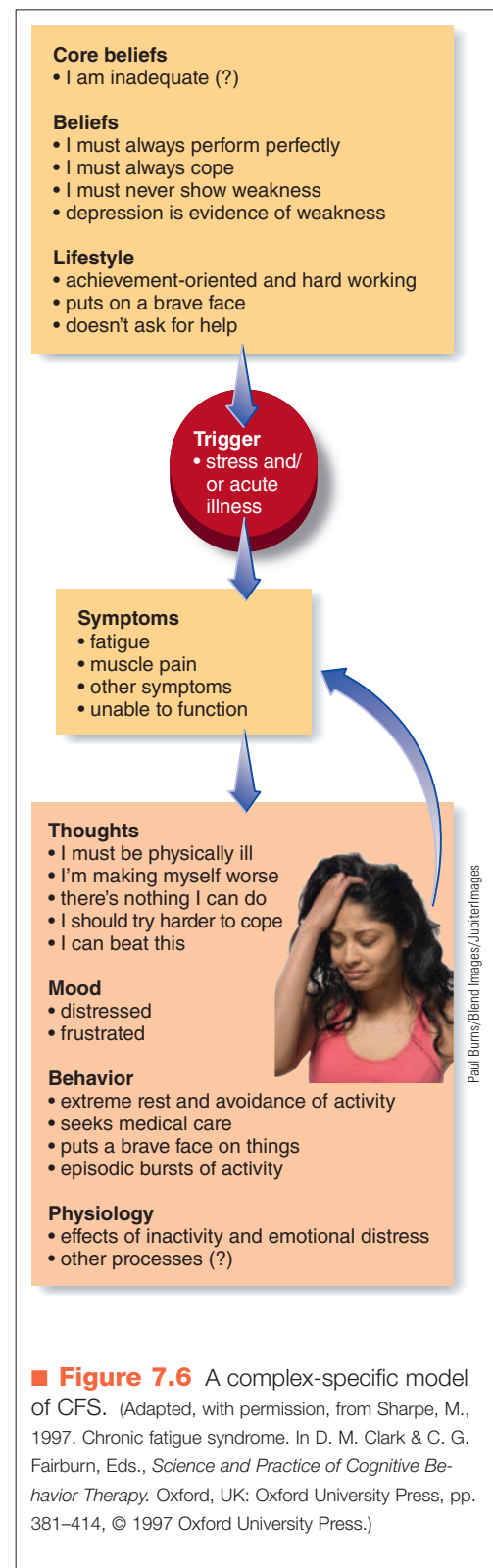


pared to whites. CFS occurs in up to 3% of patients in a primary care clinic, predominantly in women, and usually begins in early adulthood (Afari & Buchwald, 2003), but it can occur in children as young as 7 years (Sankey, Hill, Brown, Quinn, & Fletcher, 2006). A study of 4,591 twins yielded a 2.7% prevalence rate (Furberg et al., 2005), and a prospective study of a larger birth cohort revealed that by age 53, 1.1% reported a diagnosis of CFS (Harvey, Wadsworth, Wessely, & Hotopf, 2008). To get a better idea of prevalence, large-scale population studies need to be done.

People with CFS suffer considerably and often must give up their careers because the disorder runs a chronic course (Taylor et al., 2003). In a group of 100 patients followed for 18 months, chronic fatigue symptoms did not decrease significantly in fully 79% of cases. Better mental health to begin with, and less use of sedating medications and a more “psychological” as opposed to medical attribution for causes, led to better outcomes (Schmaling, Fiedelak, Katon, Bader, & Buchwald, 2003). Fortunately, CFS patients do not seem to be at risk for increased mortality (death) through disease or suicide compared to the general population (Smith, Noonan, & Buchwald, 2006). As Abbey and Garfinkel (1991) and Sharpe (1997) point out, both neurasthenia in the 19th century and CFS in the 20th century through the present have been attributed to an extremely stressful environment, the changing role of women, and the rapid dissemination of new technology and information. Both disorders are most common in women. It is possible that a virus or a specific immune system dysfunction will be found to account for CFS. Another possibility suggested by Abbey and Garfinkel (1991) is that the condition represents a rather nonspecific response to stress, and Heim and colleagues (2006) found a higher level of adverse early stressful events in people with CFS compared to nonfatigued controls, reminiscent of Sapolsky’s monkeys (discussed earlier in the chapter). Furthermore, a recent large study looking at personality factors that may contribute to CFS found preexisting stress and emotional instability to be important factors (Kato, Sullivan, Evengard, & Pederson, 2006). But it is not clear why certain individuals respond with chronic fatigue instead of some other psychological or physical disorder.

Michael Sharpe (1997) has developed one of the first models of the causes of CFS that accounts for all of its features (■ Figure 7.6). Sharpe theorizes that individuals with particularly achievement-oriented lifestyles (driven, perhaps, by a basic sense of inadequacy) undergo a period of extreme stress or acute illness. They misinterpret the lingering symptoms of fatigue, pain, and inability to function at their usual high levels as a continuing disease that is worsened by activity and improved by rest. This results in behavioral avoidance, helplessness, depression, and frustration. They think they should be able to conquer the problem and cope with its symptoms. Chronic inactivity leads to lack of stamina, weakness, and increased feelings of depression and helplessness that in turn result in episodic bursts of long activity followed by further fatigue. Certainly genetic factors probably influence the impact of



■ **Figure 7.6** A complex-specific model of CFS. (Adapted, with permission, from Sharpe, M., 1997. Chronic fatigue syndrome. In D. M. Clark & C. G. Fairburn, Eds., *Science and Practice of Cognitive Behavior Therapy*. Oxford, UK: Oxford University Press, pp. 381–414, © 1997 Oxford University Press.)

chronic fatigue syndrome (CFS) Incapacitating exhaustion following only minimal exertion, accompanied by fever, headaches, muscle and joint pain, depression, and anxiety.

stress and psychological variables in causing CFS, as is the case with all disorders (Kaiser, 2006).

Harvey et al. (2008) studied 34 individuals with CFS and found very high levels of exercise prior to the development of CFS and increased long bursts of exercise even after the onset of CFS, perhaps as an attempt to compensate for feelings of fatigue. Because no evidence emerged for increased illnesses or exposure to viruses in the lives of these individuals, one cause could be overexercise in these hard-driving, achievement-oriented people.

Pharmacological treatment has not proved effective for CFS (Afari & Buchwald, 2003; Chalder et al., 2000; Sharpe, 1992), but Sharpe has developed a cognitive-behavioral program that includes procedures to increase activity, regulate periods of rest, and direct cognitive therapy at the cognitions specified in Figure 7.7. This treatment also includes relaxation, breathing exercises, and general stress-reduction procedures, interventions we describe in the next section (Sharpe, 1992, 1993, 1997). In an early controlled trial evaluating this approach, 60 patients were assigned to the cognitive-behavioral treatment or to treatment as usual. Seventy-three percent of the patients in the cognitive-behavioral treatment group improved on measures of fatigue, disability, and illness belief, a result far superior to that in the control group (Sharpe et al., 1996). In a second, more sophisticated, large-scale evaluation of a similar cognitive-behavioral approach to CFS (Deale, Chalder, Marks, & Wessely, 1997), 60 patients with CFS were randomly assigned to cognitive-behavioral therapy or relaxation exercises alone. The results indicated that fatigue diminished and overall functioning improved significantly more in the group that received cognitive-behavioral therapy. Of individuals who completed cognitive-behavioral therapy, 70% achieved substantial improvement in physical functioning at a 6-month follow-up compared to only 19% of those in the relaxation-only group. A 5-year follow-up indicates the gains were largely maintained (Deale, Husain, Chalder, & Wessely, 2001). Subsequent studies confirm the value of this basic approach (Knoop, Prins, Moss-Morris, & Bleijenberg, 2010; Price, Mitchell, Tidy, & Hunot, 2008), but increasing emphasis is now

placed on preventing bursts of overexercise (e.g., Harvey & Wessely, 2009; Jason et al., 2010). This is because increasing exercise and activity does not seem to facilitate beneficial change. Rather, other ingredients in treatment, such as cognitive reappraisal of the meaning of fatigue in one's life, and increased self-efficacy seem more important (Friedberg & Sohl, 2009).

Concept Check 7.2

Answer the following questions about the psychosocial effects on physical disorders.

1. Which of the following is not considered part of the experience of pain?
 - a. The subjective impression of pain as reported by the patient
 - b. Pain behaviors or overt manifestations of pain
 - c. Cuts, bruises, and other injuries
 - d. An emotional component called suffering
2. Some evidence shows that psychological factors may contribute to both the course and the _____ of cancer, AIDS, and other diseases and treatment and recovery.
3. Psychosocial and biological factors contribute to the development of _____, a potentially deadly condition of high blood pressure, and to the development of _____, the blockage of arteries supplying blood to the heart muscle.
4. Psychologists identified two types of behavior patterns that they alleged to contribute to the development of disease. What types were developed? _____ and _____
5. No confirmed evidence exists to show that there is a physical cause for the disease of _____ that often causes individuals to give up their careers and suffer considerably.

Psychosocial Treatment of Physical Disorders

› What procedures and strategies are used in stress management and in prevention and intervention programs?

Certain experiments suggest that pain not only is bad for you, but also may kill you. Several years ago, John Liebeskind and his colleagues (Page, Ben-Eliyahu, Yirmiya, & Liebeskind, 1993) demonstrated that postsurgical pain in rats doubles the rate at which a certain cancer metastasizes (spreads) to the lungs. Rats undergoing abdominal surgery *without* morphine developed twice the number of

lung metastases as rats who were given morphine for the same surgery. The rats undergoing surgery with the pain-killing drug had even lower rates of metastases than rats that did not have surgery.

This effect may result from the interaction of pain with the immune system. Pain may reduce the number of natural killer cells in the immune system, perhaps because of the

general stress reaction to the pain. Thus, if a rat is in *extreme* pain, the associated stress may further enhance the pain, completing a vicious circle. Because this finding also seems to apply to humans (Taylor, 2009), it is important because the consensus is that we are reluctant to use pain-killing medication in chronic diseases such as cancer. Some estimates suggest that fewer than half of all cancer patients in the United States receive sufficient pain relief. Direct evidence is available on the benefits of early pain relief in patients undergoing surgery (Coderre, Katz, Vaccarino, & Melzack, 1993; Keefe & France, 1999; Taylor, 2009). Patients receiving pain medication before surgery reported less pain after surgery and requested less pain medication. Adequate pain-management procedures, either medical or psychological, are an essential part of the management of chronic disease.

A variety of psychological treatments have been developed for physical disorders and pain, including biofeedback, relaxation procedures, and hypnosis (Gatchel, 2005; Linden & Moseley, 2006; Otis & Pincus, 2008; Otis et al., 2010; Turk & Monarch, 2002). Because of the overriding role of stress in the cause and maintenance of many physical disorders, however, comprehensive stress-management programs are increasingly incorporated into medical centers where such disorders are treated. We briefly review specific psychosocial approaches to physical disorders and describe a typical comprehensive stress-management program.

Biofeedback

Biofeedback is a process of making patients aware of specific physiological functions that, ordinarily, they would not notice consciously, such as heart rate, blood pressure, muscle tension in specific areas of the body, electroencephalogram rhythms (brain waves), and patterns of blood flow (Andrasik, 2000; Schwartz & Andrasik, 2003).

Clinicians use physiological monitoring equipment to make the response, such as heart rate, visible or audible to the patient. The patient then works with the therapist to learn to control the response. A successful response produces some type of signal. For example, if the patient is successful in lowering her blood pressure by a certain amount, the pressure reading will be visible on a gauge and a tone will sound. It wasn't long before researchers discovered that humans could discriminate changes in autonomic nervous system activity with a high degree of accuracy (Blanchard & Epstein, 1977).

One goal of biofeedback has been to reduce tension in the muscles of the head and scalp, thereby relieving headaches. Pioneers such as Ed Blanchard, Ken Holroyd, and Frank Andrasik found that biofeedback was successful in this area (Holroyd, Andrasik, & Noble, 1980), although no



▲ In biofeedback, the patient learns to control physiological responses that are visible on a screen.

more successful than deep muscle relaxation procedures (Andrasik, 2000; Blanchard & Andrasik, 1982; Blanchard, Andrasik, Ahles, Teders, & O'Keefe, 1980; Holroyd & Penzien, 1986). Because of these results, some have thought that biofeedback might achieve its effects with tension headaches by simply teaching people to relax. However, Holroyd and colleagues (1984) concluded instead that the success of biofeedback, at least for headaches, may depend not on the reduction of tension but on the extent to which the procedures instill a sense of *control* over the pain. (How do you think this relates to the study of stress in baboons described in the beginning of the chapter?)

Whatever the mechanism, biofeedback and relaxation are more effective treatments than, for example, placebo medication interventions, and the results of these two treatments are not altogether interchangeable, in that some people benefit more from biofeedback and others benefit from relaxation procedures. Therefore, applying both treatments is a safe strategy (Andrasik, 2000; Schwartz & Andrasik, 2003). Several reviews have found that 38% to 63% of patients undergoing relaxation or biofeedback achieve significant reductions in headaches compared to approximately 35% who receive placebo medication (Blanchard, 1992; Blanchard et al., 1980; Holroyd & Penzien, 1986). Furthermore, the effects of biofeedback and relaxation seem to be long lasting (Andrasik, 2000; Blanchard, 1987; Lisspers & Öst, 1990).

biofeedback Use of physiological monitoring equipment to make individuals aware of their own bodily functions, such as blood pressure or brain waves, that they cannot normally access, with the purpose of controlling these functions.

Relaxation and Meditation

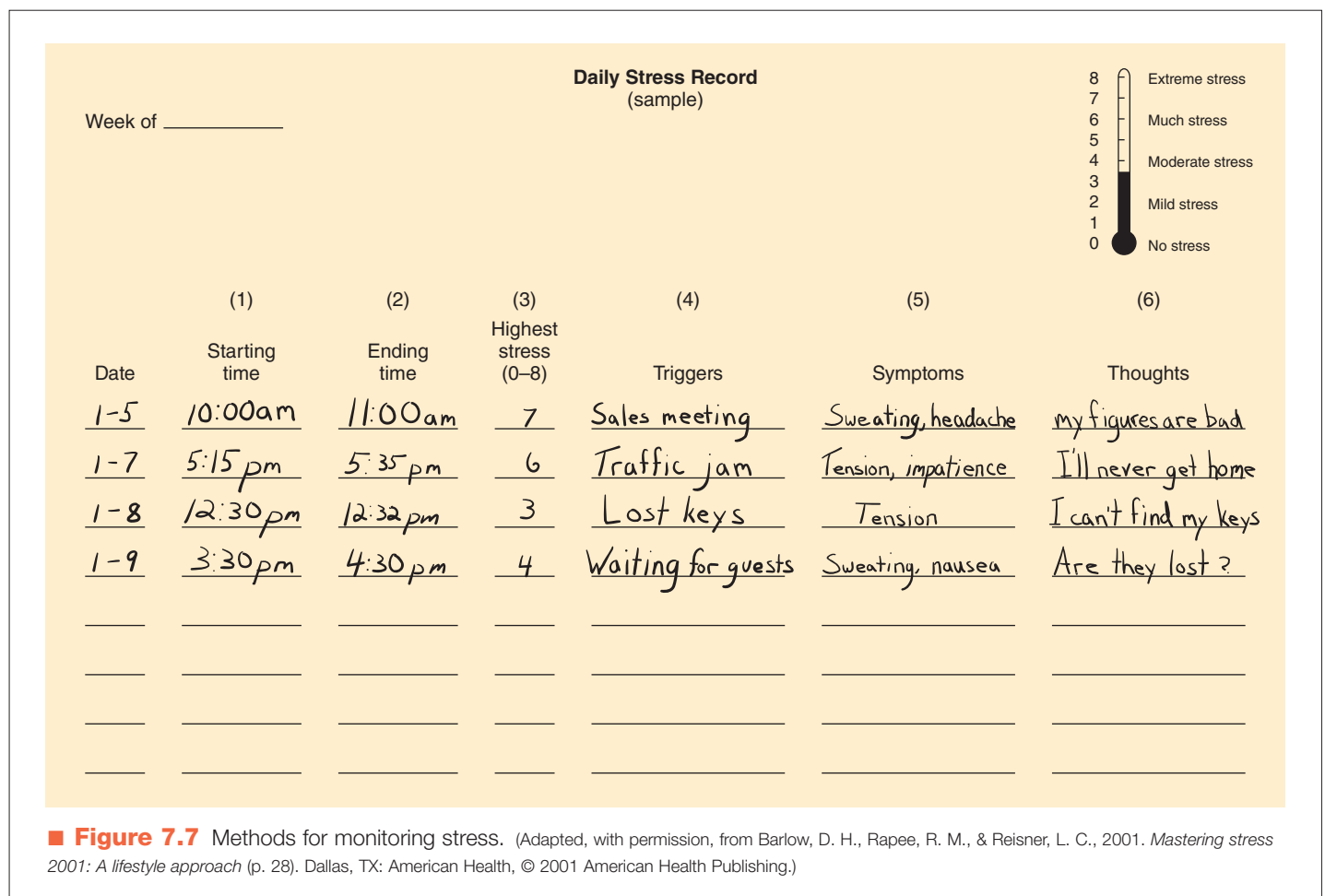
Various types of relaxation and meditation procedures have also been used, either alone or with other procedures, to treat physical disorder and pain patients. In *progressive muscle relaxation*, devised by Edmund Jacobson in 1938, people become acutely aware of any tension in their bodies and counteract it by relaxing specific muscle groups. A number of procedures focus attention either on a specific part of the body or on a single thought or image. This attentional focus is often accompanied by regular, slowed breathing. In *transcendental meditation*, attention is focused solely on a repeated syllable, or the *mantra*.

Herbert Benson stripped transcendental meditation of what he considered its nonessentials and developed a brief procedure he calls the **relaxation response**, in which a person silently repeats a mantra to minimize distraction by closing the mind to intruding thoughts. Although Benson suggested focusing on the word *one*, any neutral word or phrase would do. Individuals who meditate for 10 or 20 minutes a day report feeling calmer or more relaxed throughout the day. These brief, simple procedures can be powerful in reducing the flow of certain neurotransmitters and stress hormones, an effect that may be mediated by an increased sense of control and mastery (Benson, 1975,

1984). Benson's ideas are popular and are taught in 60% of U.S. medical schools and offered by many major hospitals (Roush, 1997). Relaxation has generally positive effects on headaches, hypertension, and acute and chronic pain, although the results are sometimes relatively modest (Taylor, 2009).

A Comprehensive Stress- and Pain-Reduction Program

In our own stress-management program (Barlow, Rapee, & Reisner, 2001), individuals practice a variety of stress-management procedures presented to them in a workbook. First, they learn to monitor their stress closely and to identify the stressful events in their daily lives. (A sample of a daily stress record is in ■ Figure 7.7.) Note that clients are taught to be specific about recording the times they experience stress, the intensity of the stress, and what seems to trigger the stress. They also note the somatic symptoms and thoughts that occur when they are stressed. All this monitoring becomes important in carrying through with the program, but it can be helpful in itself because it reveals precise patterns and causes of stress and helps clients learn what changes to make to cope better.



After learning to monitor stress, clients are taught deep muscle relaxation, which first involves tensing various muscles to identify the location of different muscle groups. (Instructions for tensing specific muscle groups are included in Table 7.3.) Clients are then systematically taught to relax the muscle groups beyond the point of inactivity—that is, to actively let go of the muscle so that no tension remains in it.

Appraisals and attitudes are an important part of stress, and clients learn how they exaggerate the negative impact of events in their day-to-day lives. In the program, therapist and client use cognitive therapy to develop more realistic appraisals and attitudes, as exemplified in the case of Sally.

Sally • Improving Her Perception

(Sally is a 45-year-old real estate agent.)

PATIENT: My mother is always calling just when I'm in the middle of doing something important and it makes me so angry, I find that I get short with her.

THERAPIST: Let's try and look at what you just said in another way. When you say that she *always* phones in the middle of something, it implies 100% of the time. Is that true? How likely is it that she will call when you are doing something important?

P: Well, I suppose that when I think back over the last 10 times she's called, most of the times I was just watching TV or reading. There was once when I was making dinner and it burned because she interrupted me. Another time, I was busy with some work I had brought home from the office, and she called. I guess that makes it 20% of the time.

T: OK, great. Now let's go a bit further. So what if she calls at an inconvenient time?

P: Well, I know that one of my first thoughts is that she doesn't think anything I do is important. But before you say anything, I know that is a major overestimation since she obviously doesn't know what I'm doing when she calls. However, I suppose I also think that it's a major interruption and inconvenience to have to stop at that point.

T: Go on. What is the chance that it is a major inconvenience?

P: When I was doing my work, I forgot what I was up to and it took me 10 minutes to work it out again. I guess that's not so bad—it's only 10 minutes. And when the dinner burned, it was really not too bad, just a little burned. Part of that was my fault anyway because I could have turned the stove down before I went to the phone.

T: So, it sounds like quite a small chance that it would be a major inconvenience, even if your mother does interrupt you.

Table 7.3 Suggestions for Tensing Muscles

Large Muscle Groups	Suggestions for Tensing Muscles
Lower arm	Make fist, palm down, and pull wrist toward upper arm.
Upper arm	Tense biceps; with arms by side, pull upper arm toward side without touching. (Try not to tense lower arm while doing this; let lower arm hang loosely.)
Lower leg and foot	Point toes upward to knees.
Thighs	Push feet hard against floor.
Abdomen	Pull in stomach toward back.
Chest and breathing	Take deep breath and hold it about 10 seconds, then release.
Shoulders and lower neck	Shrug shoulders, bring shoulders up until they almost touch ears.
Back of neck	Put head back and press against back of chair.
Lips	Press lips together; don't clench teeth or jaw.
Eyes	Close eyes tightly but don't close too hard (be careful if you have contacts).
Lower forehead	Pull eyebrows down and in (try to get them to meet).
Upper forehead	Raise eyebrows and wrinkle forehead.

Source: Adapted, with permission, from Barlow, D. H., Rapee, R. M., & Reisner, L. C. (2001). *Mastering stress 2001: A lifestyle approach*. Dallas, TX: American Health, pp. 113–114, © 2001 American Health Publishing.

P: True. And I know what you are going to say next. Even if it is a major inconvenience, it's not the end of the world. I have handled plenty of bigger problems than this at work.

In this program, individuals work hard to identify unrealistic negative thoughts and to develop new appraisals and attitudes almost instantaneously when negative thoughts occur. Such assessment is often the most difficult part of the program. After the session just related, Sally

relaxation response Active components of meditation methods, including repetitive thoughts of a sound to reduce distracting thoughts and closing the mind to other intruding thoughts, that decrease the flow of stress hormones and neurotransmitters and cause a feeling of calm.

began using what she had learned in cognitive therapy to reappraise stressful situations. Finally, clients in stress-reduction programs develop new coping strategies, such as time management and assertiveness training. During *time-management training*, patients are taught to prioritize their activities and pay less attention to nonessential demands. During *assertiveness training*, they learn to stand up for themselves in an appropriate way. Clients also learn other procedures for managing everyday problems.

A number of studies have evaluated some version of this comprehensive program. The results suggest that it is generally more effective than individual components alone, such as relaxation or biofeedback, for chronic pain (Keefe et al., 1992; Otis & Pincus, 2008; Turk & Monarch, 2002), CFS (Deale et al., 1997), tension headaches (Blanchard et al., 1990; Lipchik et al., 2002), hypertension (Ward, Swan, & Chesney, 1987), temporomandibular joint (jaw) pain (Turner, Mancl, & Aaron, 2006), and cancer pain (Andersen et al., 2007; Crichton & Morey, 2003).

Drugs and Stress-Reduction Programs

Some evidence suggests that chronic reliance on over-the-counter analgesic (pain reliever) medications lessens the efficacy of comprehensive programs in the treatment of headache and may make headaches worse because patients experience *increased* headache pain every time the medication wears off or is stopped (rebound headaches) (Capobianco, Swanson, & Dodick, 2001).

Holroyd, Nash, Pingel, Cordingley, and Jerome (1991) compared a comprehensive cognitive-behavioral treatment to an antidepressant drug, amitriptyline, in the treatment of tension headache. The psychological treatment produced at least a 50% reduction in headache activity in 56% of the patients, whereas the drug produced a comparable reduction in only 27% of users. Grazzi and colleagues (2002) treated 61 patients with migraine headaches and analgesic overuse by withdrawing the patients from analgesics and then starting them on a more comprehensive but nonaddicting medication regimen, either with biofeedback and relaxation or without these (drugs only). After 3 years, significantly more individuals in the medication-only condition had relapsed by resuming analgesic use and were experiencing more headache pain. It is important that psychological treatment also seems to reduce drug consumption fairly consistently (Radnitz, Appelbaum, Blanchard, Elliott, & Andrasik, 1988), as it did in the study by Grazzi and colleagues (2002), not only for headaches but also for severe hypertension.

Denial as a Means of Coping

We have emphasized the importance of confronting and working through our feelings, particularly after stressful or traumatic events. Beginning with Sigmund Freud, mental health professionals have recognized the importance of reliving or processing intense emotional experiences to put them behind us and to develop better coping responses.

For example, individuals undergoing coronary artery bypass surgery who were optimistic recovered more quickly, returned to normal activities more rapidly, and reported a stronger quality of life 6 months after surgery than those who were not optimistic (Scheier et al., 1989). Scheier and colleagues also discovered that optimistic people are less likely to use denial as a means of coping with a severe stressor such as surgery. Most mental health professionals work to eliminate denial because it has many negative effects. For example, people who deny the severe pain connected with disease may not notice meaningful variations in their symptoms, and they typically avoid treatment regimens or rehabilitation programs.

But is denial always harmful? The well-known health psychologist Shelley Taylor (2009) points out that most individuals who are functioning well deny the implications of a potentially serious condition, at least initially. A common reaction is to assume that what they have is not serious or will go away quickly. Most people with serious diseases react this way, including those with cancer (Meyerowitz, 1983) and CHD (Krantz & Deckel, 1983). Several groups of investigators (see, for example, Hackett & Cassem, 1973; Meyerowitz, 1983) have found that during that extremely stressful period when a person is first diagnosed, denial may help patients endure the shock more easily. They are then better able to develop coping responses later. The value of denial as a coping mechanism may depend more on timing than on anything else. In the long run, however, all evidence indicates that at some point we must face the situation, process our emotions, and come to terms with what is happening (Compas et al., 2006).

Modifying Behaviors to Promote Health

As early as 1991, the director of the National Institutes of Health said that “many common diseases can be prevented and others can be postponed or controlled simply by making possible lifestyle changes” (Department of Health and Human Services, 1991). Unhealthy eating habits, lack of exercise, and smoking are three of the most common behaviors that put us at risk in the long term for a number of physical disorders (Lewis et al., 2011). Other high-risk behaviors and conditions include unprotected sex, failure to take precautions to avoid injuries, excessive use of alcohol, and excessive exposure to the sun, just to name a few. Many of these behaviors contribute to diseases and physical disorders that are among the leading causes of death, including not only CHD and cancer but also accidents of various kinds (related to consumption of alcohol and the nonuse of safety restraints), cirrhosis of the liver (related to excessive consumption of alcohol), and a variety of respiratory diseases, including influenza and pneumonia (related to smoking and stress) (Lewis et al., 2011). Even now, fully 21% of adults in the United States are regular smokers (CDC, 2007), and smoking is the leading preventable cause of death, killing approximately 443,000 people each year (CDC, 2008). According to a recent survey from the American Cancer Society (ACS), 8.6 million people had at least

one chronic disease related to a history or prevalence of smoking (ACS, 2007).

Considerable work is ongoing to develop effective behavior modification procedures that improve diet, increase adherence to drug and medical treatment programs, and develop optimal exercise programs. Here we review briefly three areas of interest: injury control, the prevention of AIDS, and a major community intervention known as the Stanford Three Community Study.

Injury Prevention

Accidents are the leading cause of death for people age 1 to 45 and the fifth leading cause of death among all causes in the United States (see Table 7.1). Furthermore, the loss of productivity to the individual and society, and years of life lost from injuries, is far greater than from the other four leading causes of death: heart disease, cancer, stroke, and respiratory disease (Institute of Medicine, 1999). Therefore, the U.S. government has become interested in methods for reducing injury (Scheidt, Overpeck, Trifiletti, & Cheng, 2000). Spielberger and Frank (1992) point out that psychological variables are crucial in leading to virtually all factors that lead to injury. A good example is the work of the late Lizette Peterson and her colleagues (see, for example, Peterson & Roberts, 1992). Peterson was particularly interested in preventing accidents in children. Injuries kill more children than the next six causes of childhood death combined (Scheidt et al., 1995; Taylor, 2009), and nearly half of all cases of poisoning each year occur in children younger than age 6 (CDC, 2006). Yet most people, including parents, don't think too much about prevention, even in their own children, because they usually consider injuries to be fated and, therefore, out of their hands (Peterson, Farmer, & Kashani, 1990; Peterson & Roberts, 1992).

However, a variety of programs focusing on behavior change have proved effective for preventing injuries in children (Sleet, Hammond, Jones, Thomas, & Whitt, 2003; Taylor, 2009). For example, children have been systematically and successfully taught to escape fires (Jones & Haney, 1984), identify and report emergencies (Jones & Ollendick, 2002; Jones & Kazdin, 1980), safely cross streets (Yeaton & Bailey, 1978), ride bicycles safely, and deal with injuries such as serious cuts (Peterson & Thiele, 1988). In many of these programs, the participating children maintained the safety skills they had learned for months after the intervention—as long as assessments were continued, in most cases. Because little evidence indicates that repeated warnings are effective in preventing injuries, programmatic efforts to change behavior are important. Such programs, however, are nonexistent in most communities.

AIDS Prevention

Earlier we documented the horrifying spread of AIDS, particularly in developing countries. Table 7.4 illustrates modes of transmission of AIDS in the United States and the world as they existed through 2008 and 2009. In developing countries, such as Africa, for instance, AIDS is almost exclusively linked to heterosexual intercourse with an

infected partner. There is no vaccine for the disease. *Changing high-risk behavior is the only effective prevention strategy* (Catania et al., 2000).

Comprehensive programs are particularly important because testing alone to learn whether one is HIV positive or HIV negative does little to change behavior (see, for example, Landis, Earp, & Koch, 1992). Even educating at-risk individuals is generally ineffective in changing high-risk behavior (Helweg-Larsen & Collins, 1997). One of the most successful behavior-change programs was carried out in San Francisco several years ago. Table 7.5 shows what behaviors were specifically targeted and what methods were used to achieve behavior change in various groups. Before this program was introduced, frequent unprotected sex was reported by 37.4% of one sample of gay men and 33.9% of another sample (Stall, McKusick, Wiley, Coates, & Ostrow, 1986). At a follow-up point in 1988, the incidence had dropped to 1.7% and 4.2%, respectively, in the same two samples (Ekstrand & Coates, 1990). These changes did not occur in comparable groups where a program of this type had not been instituted. In a similar, large, community-based program in eight small cities, Kelly and colleagues (1997) trained popular and well-liked members of the gay community to provide information and education. Risky sexual practices were substantially reduced in the four cities where the program occurred, compared to four cities where only educational pamphlets were distributed.

It is crucial that these programs be extended to minorities and women, who often do not consider themselves at risk, probably because most media coverage in the United States until recently has focused on gay white males (Mays & Cochran, 1988). In 2003, women accounted for 50% of new AIDS cases (World Health Organization, 2003). Furthermore, the age of highest risk for women is between 15 and 25 years; the peak risk for men is during their late 20s and early 30s. In view of the different circumstances in

Table 7.4 AIDS Cases by Mode of Transmission (World, 2009; U.S., 2008) Percentage Estimates of Total Cases

Transmission Category	World (%)	United States (%)*
Male-to-male sexual contact	5–10	50
Injection drug use	10	17
Male-to-male sexual contact and injection drug use	—	5
Heterosexual contact	59–69	32
Other**	16–21	1

*Because totals were calculated independently from the subpopulations, the percentages may not sum exactly to 100%. **Includes hemophilia, blood transfusion, perinatal exposure, transmission within healthcare settings, and risk not reported or identified.

which women put themselves at risk for HIV infection—for example, prostitution in response to economic deprivation—effective behavior-change programs for them must be different from those developed for men (World Health Organization, 2000).

In Africa, where the primary mode of transmission of HIV is heterosexual, a greater focus on the interpersonal and social system of the individual at risk has also begun. One important new initiative is to focus prevention techniques on couples rather than individuals (Grabbe & Bunnell, 2010). This is important, because studies demonstrate that only 22% of adults age 15–49 years know their HIV status in Africa and condom use within regular partnerships is very low because the assumption is that their partner is “safe” and they are at low risk. Because 55% to 93% of new HIV infections occur within cohabiting relationships, this means that most transmissions occur within couples who are unaware of their HIV status. The success-

ful initiation of couples counseling and testing has occurred in Rwanda, Uganda, and Kenya. Couples counseling for HIV prevention also provides opportunities for delivering and providing more comprehensive maternal and child health services.

The Stanford Three Community Study

One of the best-known and most successful efforts to reduce risk factors for disease in the community is the Stanford Three Community Study (Meyer, Nash, McAlister, Maccoby, & Farquhar, 1980). Although it was conducted a number of years ago, it remains a model program. Rather than assemble three groups of people, these investigators studied three entire communities in central California that were reasonably alike in size and type of residents between 1972 and 1975. The target was reduction of risk factors for CHD. The positive behaviors that were introduced focused on smoking, high blood pressure, diet, and weight reduc-

Table 7.5 The San Francisco Model: Coordinated Community-Level Program to Reduce New HIV Infection

Information	Skills
<p>Intervention: Media Educate about how HIV is and is not transmitted.</p> <p>Health-Care Establishments and Providers Provide educational materials and classes about HIV transmission.</p> <p>Schools Distribute materials about HIV transmission and prevention.</p> <p>Worksites Distribute materials about HIV transmission and prevention.</p> <p>STD, Family Planning, and Drug Abuse Treatment Centers Distribute materials and video models about HIV transmission</p> <p>Community Organizations (Churches, Clubs) Make guest speakers, materials, and videos available.</p> <p>Antibody Testing Centers Distribute materials and instruction about HIV transmission.</p> <p>Motivation Provide examples of different kinds of individuals who have become HIV infected. Ask all patients about risk factors for HIV transmission. Advise high-risk patients to be tested for HIV antibodies. Provide models of teens who became infected with HIV. Provide examples of co-workers who became infected with HIV. Make detailed assessment of HIV risk. Advise about testing for antibodies to HIV. Provide examples that HIV-infected individuals are similar to club or organization membership.</p>	<p>Model how to clean needles and use condoms and spermicides. Model skills for safe sex and needle negotiation. Provide classes and videos to demonstrate safe-sex skills. Provide classes and models for safe-sex and drug injection skills. Instruct and rehearse safe-sex and drug injection skills during medical and counseling encounters. Provide classes and videos for AIDS risk-reduction skills.</p> <p>Norms Publicize the low prevalence of high-risk behaviors. Publicize public desirability of safe-sex classes and condom advertisements. Advise patients about prevalent community norms. Create a climate of acceptance for HIV-infected students and teachers. Publicize student perceptions about desirability of safe sex. Create a climate of acceptance for HIV-infected people. Provide classes and videos for AIDS risk-reduction skills.</p> <p>Policy and Legislation Generate concern and action about policy. Advocate policies and laws that will prevent spread of HIV. Mobilize students and faculty to work to allow sex education to take place in the schools. Install condom machines in public bathrooms. Allow HIV-infected people to work. Mobilize clients to request additional treatment slots and facilities. Advocate beneficial laws and policies. Advocate confidentiality and nondiscrimination. Advocate confidentiality and nondiscrimination.</p>

STD = sexually transmitted disease

Source: Reprinted, with permission, from Coates, T. J. (1990). Strategies for modifying sexual behavior for primary and secondary prevention of HIV disease. *Journal of Consulting and Clinical Psychology*, 58(1), 57–69, © 1990 American Psychological Association.

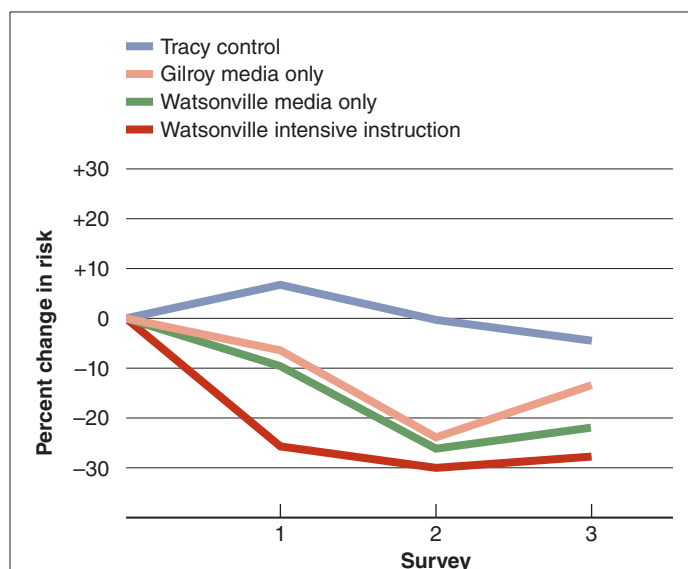
tion. In Tracy, the first community, no interventions were conducted, but detailed information was collected from a random sample of adults to assess any increases in their knowledge of risk factors, as well as any changes in risk factors over time. In addition, participants in Tracy received a medical assessment of their cardiovascular factors. The residents of Gilroy and part of Watsonville were subjected to a media blitz on the dangers of behavioral risk factors for CHD, the importance of reducing these factors, and helpful hints for doing so. Most residents of Watsonville, the third community, also had a face-to-face intervention in which behavioral counselors worked with the townspeople judged to be at particularly high risk for CHD. Participants in all three communities were surveyed once a year for a 3-year period following the intervention. Results indicate that the interventions were markedly successful at reducing risk factors for CHD in these communities (■ Figure 7.8). Furthermore, for the residents of Watsonville who also received individual counseling, risk factors were substantially lower than for people in Tracy or even for those in Gilroy and people in the part of Watsonville that received only the media blitz, and their knowledge of risk factors was substantially higher.

Interventions such as the Stanford study cost money, although in many communities the media are willing to donate time to such a worthy effort. Results show that mounting an effort like this is worthwhile to individuals, to the community, and to public health officials because many lives will be saved and disability leave will be decreased to an extent that will more than cover the original cost of the program. Unfortunately, implementation of this type of program is still not widespread.

Concept Check 7.3

Check your understanding of psychosocial treatment by matching the treatments to the correct scenarios or statements: (a) biofeedback, (b) meditation and relaxation, (c) cognitive coping procedures, (d) denial, (e) modify behaviors to promote health, and (f) Stanford Three Community Study.

1. Mary is often upset by stupid things other people are always doing. Her doctor wants her to realize her exaggeration of these events and suggests ____.
2. Tyrone can't seem to focus on anything at work. He feels too stressed. He needs ____, a way of minimizing intruding thoughts that he can do at work in a short amount of time.
3. Harry's blood pressure soars when he feels stressed. His doctor showed him how to become aware of his body process to control them better by using ____.
4. At a world conference, leaders met to discuss how to reduce the risk of childhood injuries, AIDS risks, and the number of smoking-related diseases. Professionals suggested programs involving teaching individuals how to ____.
5. Initially, strong ____ can help a patient endure the shock of bad news; however, later it can inhibit or prevent the healing process.
6. The ____ is one of the best-known efforts to reduce community disease risk factors.



■ **Figure 7.8** Results of the Stanford Three Community Study. (Reprinted, with permission, from Meyer, A. J., Nash, J. D., McAlister, A. L., Maccoby, N., & Farquhar, J. W., 1980. Skills training in a cardiovascular health education campaign. *Journal of Consulting and Clinical Psychology*, 48, 129-142, © 1980 American Psychological Association.)



On the Spectrum The Inseparability of Psychological and Physical Experience

In this chapter and earlier chapters we have described the profound influence of psychological factors on brain function and structure, showing how, for example, psychological interventions may affect physical illnesses such as CHD and AIDS. The fascinating study of the placebo response adds another layer to the discussion. To take one example, do “phony” placebo pills really decrease pain—or is it just that individuals think or report that they are feeling less pain? This is one of the major controversies in the study of placebo responses—not only for pain, but also for conditions such as depression.

With the help of the latest brain-imaging technology, several experiments have demonstrated that when pain is induced in some volunteers (for example, by injecting salt water in their jaws) after they are given a placebo, their brains operate in such a way that they actually feel less pain as opposed to simply thinking they feel less pain or reporting that they feel less pain (Wager, 2005; Zubieta et al., 2005). Specifically, broad areas of the brain are affected, but the most important system that is activated may be the endogenous opioid system (or endorphins),

which, among other functions, suppresses pain. Increased endorphin activity across broad areas of the brain was associated with lower ratings of pain intensity and reductions in the sensations of pain and emotional reactions to it. Thus, the studies show that the placebo effect is certainly not “all in your head.” “Phony” pills really do spur chemical changes in the brain that reduce pain.

But does it also work the other way? Do medical treatments, such as drugs, affect what are clearly psychological processes, and if they do, are drugs affecting different regions in the brain compared to purely psychological interventions to achieve the same end? For example, we know that drugs can relieve anxiety and depression, but the presumption is that these medications are having their effects in different areas of the brain compared to psychological treatments. Now, an interesting study has demonstrated that physical pain (such as that caused by physical injury) and social pain (such as hurt feelings caused by social rejection) may rely on some of the same behavioral and neural mechanisms (DeWall et al., 2010). In

one experiment, participants took a drug commonly used for physical pain, acetaminophen (Tylenol), while another group took a placebo. They then recorded on a form their pain feelings every day for 3 weeks. Subjects taking the acetaminophen reported substantially fewer feelings of pain than the placebo group. In a second experiment, the investigators found that the acetaminophen reduced neural responses to social rejection in brain regions known to be associated with both social pain and physical pain (the dorsal anterior cingulate cortex and the anterior insula). These findings indicate substantial overlap between social and physical pain (Wager, 2005). They also illustrate again the theme of this book: You cannot easily separate brain function induced biochemically from brain function induced by psychological factors, including expectancies and appraisals. The body and the mind are indeed inseparable, and only a multidimensional integrative approach focusing on the full spectrum of responding will produce a complete understanding of behavior, either normal or pathological.

Summary

Psychological and Social Factors that Influence Health

What is the difference between behavioral medicine and health psychology?

- › Psychological and social factors play a major role in developing and maintaining a number of physical disorders.
- › Two fields of study have emerged as a result of a growing interest in psychological factors contributing to illness. Behavioral medicine involves the application of behavioral science techniques to prevent, diagnose, and treat medical problems. Health psychology is a subfield that focuses on psychological factors involved in the promotion of health and well-being.

How are immune system function, stress, and physical disorders related?

- › Psychological and social factors may contribute directly to illness and disease through the psychological effects of stress on the immune system and other physical func-

tioning. If the immune system is compromised, it may no longer be able to attack and eliminate antigens from the body effectively, or it may even begin to attack the body's normal tissue instead, a process known as autoimmune disease.

- › Growing awareness of the many connections between the nervous system and the immune system has resulted in the new field of psychoneuroimmunology.
- › Diseases that may be partly related to the effects of stress on the immune system include AIDS, cardiovascular disease, and cancer.

Psychosocial Effects on Physical Disorders

How is stress related to AIDS, cancer, and cardiovascular disease?

- › Long-standing patterns of behavior or lifestyle may put people at risk for developing certain physical disorders. For example, unhealthy sexual practices can lead to AIDS and other sexually transmitted diseases, and un-

healthy behavioral patterns, such as poor eating habits, lack of exercise, or type A behavior pattern, may contribute to cardiovascular diseases such as stroke, hypertension, and coronary heart disease.

Of the 10 leading causes of death in the United States, fully 50% of deaths can be traced to lifestyle behaviors.

- › What are the potential causes of acute and chronic pain, and how do the two types of pain differ?

Psychological and social factors also contribute to chronic pain. The brain inhibits pain through naturally occurring endogenous opioids, which may also be implicated in a variety of psychological disorders.

Chronic fatigue syndrome is a relatively new disorder that is attributed at least partly to stress but may also have a viral or immune system dysfunction component.

Psychosocial Treatment of Physical Disorders

What procedures and strategies are used in stress management and in prevention and intervention programs?

- › A variety of psychosocial treatments have been developed with the goal of either treating or preventing physical disorders. Among these are biofeedback and the relaxation response.
- › Comprehensive stress- and pain-reduction programs include not only relaxation and related techniques but also new methods to encourage effective coping, including stress management, realistic appraisals, and improved attitudes through cognitive therapy.
- › Comprehensive programs are generally more effective than individual components delivered singly.
- › Other interventions aim to modify such behaviors as unsafe sexual practices, smoking, and unhealthy dietary habits. Such efforts have been made in a variety of areas, including injury control, AIDS prevention, smoking cessation campaigns, and programs to reduce risk factors for diseases such as CHD.

Key Terms

behavioral medicine, 250
health psychology, 250
general adaptation syndrome (GAS), 252
stress, 252
self-efficacy, 254
immune system, 254
antigens, 255
autoimmune disease, 255
rheumatoid arthritis, 255

psychoneuroimmunology (PNI), 256
AIDS-related complex (ARC), 257
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type A behavior pattern, 264
type B behavior pattern, 264
acute pain, 265
chronic pain, 265
endogenous opioids, 267
chronic fatigue syndrome (CFS), 268
biofeedback, 271
relaxation response, 272

Answers to Concept Checks

7.1

1. d; 2. a; 3. c; 4. b; 5. f; 6. e

7.2

1. c; 2. development; 3. hypertension, coronary heart disease; 4. type A (hard-driving, impatient), type B (relaxed, less concerned); 5. chronic fatigue syndrome

7.3

1. c; 2. b; 3. a; 4. e; 5. d; 6. f

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Abnormal Psychology Videos

- › *Orel, Social Support and HIV*: This African American client demonstrates the power of strong social support from family and friends and pursuing personal interests such as art, to deal with the ongoing struggles of being an HIV/AIDS patient.

- › *The Immune System, Effects of Stress and Emotion*: This video illustrates recent findings on how emotional experiences—such as stress, loneliness, and sociability—affect physical health.
- › *Cancer, Education and Support Groups*: This clip investigates whether providing group support or group education is more helpful to women facing breast cancer.

CENGAGENOW CengageNow is an easy-to-use online resource that helps you study in less time to get the grade you want—NOW. Take a pre-test for this chapter and receive a personalized study plan based on your results that will identify the topics you need to review and direct you to online resources to help you master those topics. Then take a post-test to help you determine the concepts you have mastered and what you will need to work on. If your textbook does not include an access code card, go to CengageBrain.com to gain access.

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Video Concept Reviews

CengageNOW also contains Mark Durand’s *Video Concept Reviews* on these challenging topics.

- › Behavioral Medicine
- › Health Psychology
- › Stress
- › General Adaptation Syndrome (GAS)
- › HPA-Stress Response Cycle
- › AIDS-Related Complex (ARC)
- › Cancer and Psycho-oncology
- › Hypertension
- › Acute and Chronic Pain
- › Concept Check: Integrative Process with Physical Disorders
- › Chronic Fatigue Syndrome
- › Biofeedback and Relaxation Techniques

Chapter Quiz

1. Which of the following is an interdisciplinary field that applies knowledge about human thoughts, emotions, and activities to prevent, diagnose, and treat medical problems?
 - a. behavioral medicine
 - b. endogenous medicine
 - c. health psychology
 - d. medical psychology
2. The general adaptation syndrome describes several stages people experience in response to sustained stress. These stages occur in which order?
 - a. alarm, resistance, exhaustion
 - b. resistance, alarm, exhaustion
 - c. resistance, exhaustion, alarm
 - d. exhaustion, alarm, resistance
3. Cortisol is:
 - a. a neurotransmitter that reduces anxiety
 - b. a neurohormone whose chronic secretion enhances hippocampal and immune functioning
 - c. a portion of the brain that stimulates the HPA axis in response to stress
 - d. a hormone that stimulates the hippocampus to turn off the stress response
4. Next month Shanti has to take an important college entrance exam. Which factor is most likely to influence whether her response to the exam is positive or negative?
 - a. the genetic vulnerability to stress that Shanti has inherited from her parents
 - b. whether Shanti will be taking the exam in a room by herself or with other students
 - c. Shanti’s beliefs about how much control she has over the situation
 - d. how much time Shanti has to study before the exam
5. Joan has been living with HIV for 3 years and has just started participating in a stress-management support group. Based on previous research, what might Joan expect from her participation?
 - a. an increase in the activity of T helper and natural killer cells
 - b. an increase in the amount of antigens in her system
 - c. an increase in depression as she discusses her illness
 - d. an increase in immune functioning, but only for the first few weeks of the group

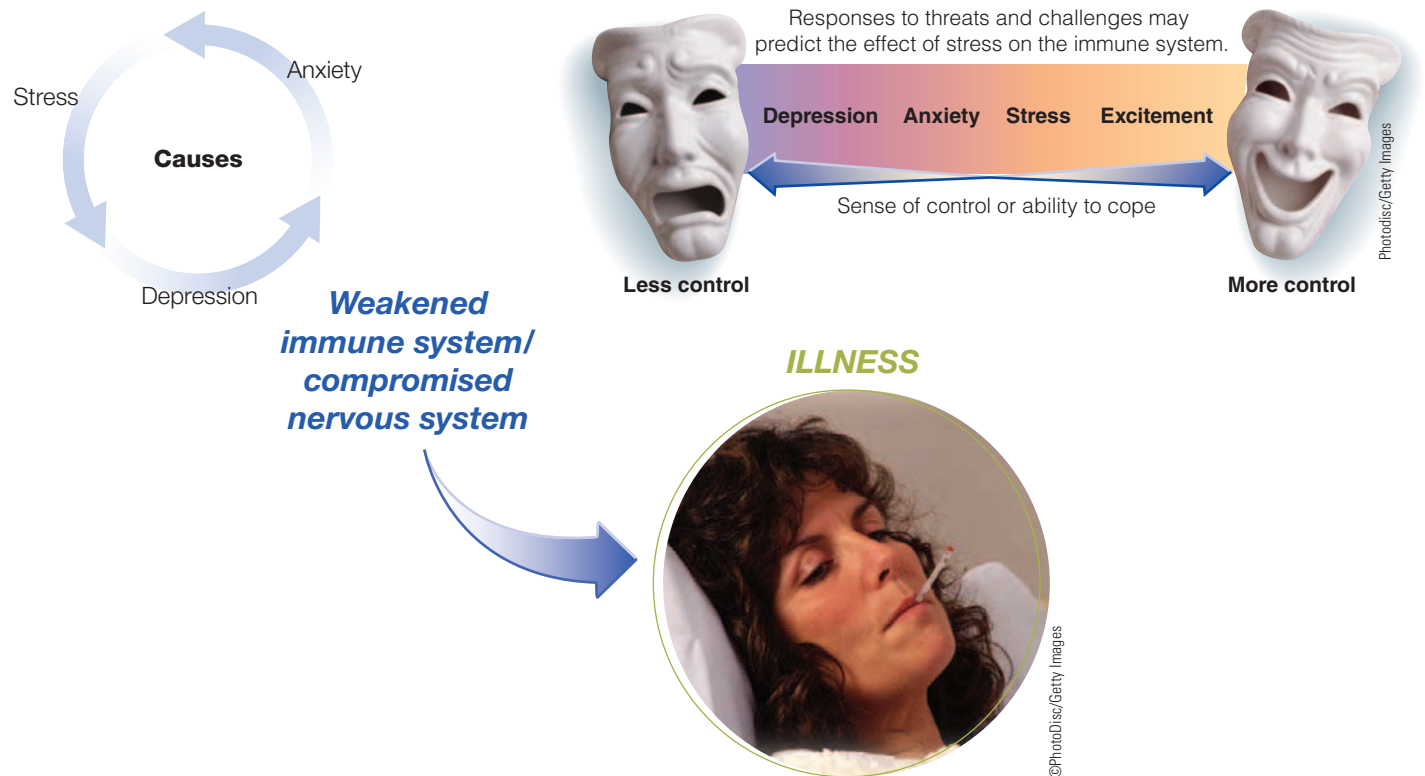
6. The study of how psychosocial factors influence cancer is known as:
 - a. psychopathology
 - b. psychopharmacology
 - c. psycho-oncology
 - d. oncosociology
7. Which of the following is a risk factor for coronary heart disease?
 - a. anger that is part of the type A behavior pattern
 - b. belligerence that is part of the type B behavior pattern
 - c. competitive drive that is part of the type B behavior pattern
 - d. carefree disregard for deadlines that is part of the type A behavior pattern
8. Biofeedback can be used to teach people how to:
 - a. reduce their competitive drive and sense of urgency
 - b. consciously control physiological functions that are outside awareness
 - c. develop more supportive social support networks
 - d. control their facial expressions to control their mood
9. Which of the following accurately characterizes the effects of denial as a coping strategy?
 - a. Individuals who undergo coronary artery bypass surgery return to normal activities more rapidly if they deny their pain.
 - b. Denial may have damaging short-term consequences in terms of the stress response, but it seems to be helpful to rehabilitation in the long term.
 - c. People who deny their disease may not notice meaningful variations in their symptoms.
 - d. Denial appears to have exclusively negative consequences on health and adaptation.
10. Which three behaviors, all of which can be modified, put people at the most risk for physical problems?
 - a. unhealthy diet, lack of exercise, smoking
 - b. pollution, unhealthy diet, lack of exercise
 - c. lack of exercise, smoking, reckless driving
 - d. smoking, alcohol use, "road rage"(See Appendix A for answers.)

Exploring Physical Disorders and Health Psychology

Psychological and behavioral factors are major contributors to illness and death.

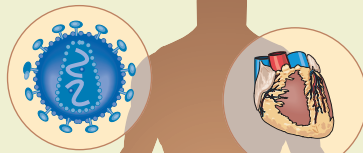
- › Behavioral medicine applies behavioral science to medical problems.
- › Health psychology focuses on psychological influences on health and improving health care.

PSYCHOLOGICAL AND SOCIAL FACTORS INFLUENCE BIOLOGY



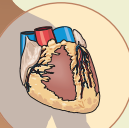
AIDS (Acquired Immune Deficiency Syndrome)

- The human immunodeficiency virus (HIV) attacks the immune system and opportunistic infections develop uncontrollably.
- Psychological treatments focus on strengthening the immune system and gaining a sense of control.
- Although drug therapy may control the virus, there is so far no biological means of prevention and the disease is still always fatal.



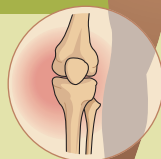
Cardiovascular Problems

- The heart and blood vessels can be damaged by
 - *Stroke*: Blockage or rupture of blood vessels in the brain
 - *Hypertension*: Constriction of blood vessels at organs and extremities puts extra pressure on the heart, which eventually weakens
 - *Coronary heart disease*: Blockage of arteries supplying blood to the heart
- Biological, psychological, and social factors contribute to all these conditions and are addressed in treatment.



Chronic Pain

- May begin with an acute episode but does not diminish when injury heals.
- Typically involves joints, muscles, and tendons; may result from enlarged blood vessels, tissue degeneration, or cancerous tumors.
- Psychological and social influences may cause and maintain chronic pain to a significant degree.



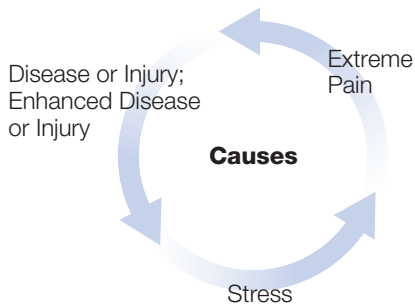
Cancer

- Abnormal cell growth produces malignant tumors.
- Psychosocial treatments may prolong life, alleviate symptoms, and reduce depression and pain.
- Different cancers have different rates of recovery and mortality.
- Psychoncology is the study of psychosocial factors involved in the course and treatment of cancer.



PSYCHOSOCIAL TREATMENTS FOR PHYSICAL DISORDERS

The stress reaction associated with pain may reduce the number of natural killer cells in the immune system:



Biofeedback

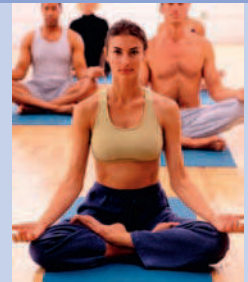
- Electronic monitors make physiological responses such as heartbeat visible on a computer screen.
- Patient learns to increase or decrease the response, thereby improving functioning (decreasing tension).
 - Developing a sense of control may be therapeutic.



Suzi Scalora/Photodisc/Getty Images

Relaxation and Meditation

- **Progressive muscle relaxation:** Person learns to locate physical tension and to counteract it by relaxing a specific muscle group.
- **Meditation:** Focusing attention on a specific body part or process or on an affirming thought or image; in some forms, focusing on a single silently repeated syllable (mantra) “empties” the mind. Meditation is accompanied by slow, regular breathing.
 - Meditating daily for at least 10 to 20 minutes imparts calm and relaxation by reducing certain neurotransmitters and stress hormones and increasing a sense of control.



Ryan McVay/Photodisc/Getty Images

BEHAVIOR MODIFICATION TO PROMOTE HEALTH

Many injuries and diseases can be prevented or controlled through lifestyle changes involving diet, substance use, exercise, and safety precautions.

Injury Control

- Injuries are the leading cause of death for people age 1 to 45, especially children.
- Most people consider injuries to be out of their control and therefore do not change high-risk behaviors.
- In children, prevention focuses on
 - escaping fires
 - crossing streets
 - using car seats, seat belts, and bicycle helmets
 - first aid.



Karl Weatherly/Photodisc/Getty Images

AIDS Prevention

- Changing high-risk behavior through individual and community education is the only effective strategy.
 - Eliminate unsafe sexual practices through cognitive-behavioral self-management training and social support networks.
 - Show drug abusers how to clean needles and make safe injections.
- Target minorities and women, groups that do not perceive themselves to be at risk.
 - Media coverage focuses on gay white males.
 - More women are infected through heterosexual interactions than through intravenous drug use.



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CHAPTER 8

Eating and Sleep Disorders

Chapter Outline

Major Types of Eating Disorders

- Bulimia Nervosa
- Anorexia Nervosa
- Binge-Eating Disorder
- Statistics

Causes of Eating Disorders

- Social Dimensions
- Biological Dimensions
- Psychological Dimensions
- An Integrative Model

Treatment of Eating Disorders

- Drug Treatments
- Psychological Treatments
- Preventing Eating Disorders

Obesity

- Statistics
- Disordered Eating Patterns in Cases of Obesity
- Causes
- Treatment

Sleep Disorders: The Major Dyssomnias

- An Overview of Sleep Disorders
- Primary Insomnia
- Primary Hypersomnia
- Narcolepsy
- Breathing-Related Sleep Disorders
- Circadian Rhythm Sleep Disorders

Treatment of Sleep Disorders

- Medical Treatments
- Environmental Treatments
- Psychological Treatments
- Preventing Sleep Disorders
- Parasomnias and Their Treatment

Abnormal Psychology Live Videos

- Anorexia Nervosa: Susan
- Weight Control: The Obesity Epidemic
- Sleep Cycle
- Web Link



Student Learning Outcomes*

Use the concepts, language, and other major theories of the discipline to account for psychological phenomena:

› Describe behavior and mental processes empirically, including operational definitions (see textbook pages 285–293, 309–317)

Identify appropriate applications of psychology in solving problems, such as:

› Origin and treatment of abnormal behavior (see textbook pages 294–304, 306–308, 318–322)

*Portions of this chapter cover learning outcomes suggested by the American Psychological Association (2007) in their guidelines for the undergraduate psychology major. Chapter coverage of these outcomes is identified by APA Goal and APA Suggested Learning Outcome (SLO).

Most of us take our bodies for granted. We wake up in the morning assuming we will be alert enough to handle our required daily activities; we eat two or three meals a day and perhaps a number of snacks; we may engage in some vigorous exercise and, on some days, in sexual activity. We don't focus on our functioning to any great degree unless it is disrupted by illness or disease. Yet psychological and social factors can significantly disrupt these "activities of survival."

In this chapter we talk about psychological disruptions of two of our relatively automatic behaviors, eating and sleeping, that substantially affect the rest of our behavior.

Major Types of Eating Disorders

- › What are the defining features of bulimia nervosa and anorexia nervosa?
- › How does binge-eating disorder differ from bulimia?

Although some disorders we discuss in this chapter can be deadly, many of us are not aware they are widespread among us. They began to increase during the 1950s or early 1960s and have spread insidiously over the ensuing decades. In **bulimia nervosa**, out-of-control eating episodes, or **binges**, are followed by self-induced vomiting, excessive use of laxatives, or other attempts to purge (get rid of) the food. In **anorexia nervosa**, the person eats nothing beyond minimal amounts of food, so body weight sometimes drops dangerously. In **binge-eating disorder**, individuals may binge repeatedly and find it distressing but do not attempt to purge the food. The chief characteristic of these related disorders is an overwhelming, all-encompassing drive to be thin. Of the people with anorexia nervosa who are followed over a sufficient period, up to 20% die as a result of their disorder, with slightly more than 5% dying within 10 years (see, for example, Keel et al., 2003; Millar et al., 2005; Papadopoulos, Ekblom, Brandt, & Ekselius, 2009; Theander, 1985; Zipfel, Lowe, Deter, & Herzog, 2000).

As many as 30% of anorexia-related deaths are suicides, which is 50 times higher than the risk of death from suicide in the general population (Agras, 2001; Chavez & Insel 2007; Keel et al., 2003; Thompson & Kinder, 2003).

A growing number of studies in different countries indicate that eating disorders are widespread and increased dramatically in Western countries from about 1960 to 1995, according to the most recent data we have (Bulik et al., 2006; Hoek, 2002). For example, Eagles and colleagues (1995) documented a steady increase of more than 5% per year in Scotland.

Even more dramatic are the data for bulimia nervosa. Garner and Fairburn (1988) reviewed rates of referral to a major eating disorder center in Canada. Between 1975 and 1986, the referral rates for anorexia rose slowly but the

bulimia nervosa An eating disorder involving recurrent episodes of uncontrolled excessive (binge) eating followed by compensatory actions to remove the food (for example, deliberate vomiting, laxative abuse, and excessive exercise).

binge A relatively brief episode of uncontrolled, excessive consumption, usually of food or alcohol.

anorexia nervosa An eating disorder characterized by recurrent food refusal, leading to dangerously low body weight.

binge-eating disorder (BED) A pattern of eating involving distress-inducing binges not followed by purging behaviors; being considered as a new DSM diagnostic category.



rates for bulimia rose dramatically—from virtually none to more than 140 per year. Similar findings have been reported from other parts of the world (Hay & Hall, 1991; Lacey, 1992), although more recent surveys suggest that rates for bulimia are leveling off or even beginning to drop from highs reached in the 1990s (Keel, Heatherton, Dorer, Joiner, & Zalta, 2006). The figures on mortality mentioned previously represent 6 times the increase in death rates from eating disorders compared to death rates in the normal population (Crisp, Callender, Halek, & Hsu, 1992; Papadopoulos et al., 2009). Eating disorders were included for the first time as a separate group of disorders in the fourth edition of the *Diagnostic and Statistical Manual (DSM-IV)*, published in 2000.

The increases in eating disorders during the last half of the 20th century would be puzzling enough if they occurred across the population. What makes them even more intriguing is that they tend to be culturally specific. Until recently, eating disorders were not found in developing countries, where access to sufficient food is so often a daily struggle; only in the West, where food is generally plentiful, have they been rampant. Now this is changing; evidence suggests that eating disorders are going global. Unsystematic interviews with health professionals in Asia (Efon, 1997), and more formal studies (Lee, 1993), show estimates of prevalence in those countries, particularly Japan and Hong Kong, are approaching those in the United States and other Western countries.

Not everyone in the world is at risk. Eating disorders tend to occur in a relatively small segment of the population. More than 90% of the severe cases are young females, mostly in families with upper-middle-class and upper-class socioeconomic status, who live in a socially competitive environment. Increasingly, this group of girls and young women with eating disorders seek one another out on the Internet through “pro-ana” (anorexia) and “pro-mia” (bulimia) websites and social networks, where they find support and, in some cases, inspiration (Peng, 2008; pro-ana-nation, 2010).

The very specificity of these disorders in terms of sex, age, and social class is unparalleled and makes the search for causes all the more interesting. In these disorders, unlike most others, the strongest contributions to etiology seem to be sociocultural rather than psychological or biological factors.

Obesity is not considered an official disorder in the *DSM*, but we consider it here because it is thought to be one of the most dangerous epidemics confronting public health authorities around the world today. The latest surveys indicate that close to 70% of adults in the United States are overweight, and more than 30% meet criteria for obesity (Flegal, Carroll, Ogden, & Curtin, 2010). These rates have been increasing for decades, although they may now be leveling off (Flegal et al., 2010; Ogden et al., 2006). Definitions of underweight, overweight, and obesity will be discussed further later, but they are based on body mass index (BMI), which is highly correlated with body fat. The more overweight someone is at a given height, the greater

the risks to health. These risks are widespread and involve greatly increased prevalence of cardiovascular disease, diabetes, hypertension, stroke, gallbladder disease, respiratory disease, muscular skeletal problems, and hormone-related cancers (Flegal, Graubard, Williamson, & Gail, 2005; Henderson & Brownell, 2004; Must et al., 1999; Williams, Wake, Hesketh, Maher, & Waters, 2005). Obesity is included in this chapter because it is produced by the consumption of a greater number of calories than are expended in energy. The behavior that produces this distorted energy equation contradicts a common assumption—namely, that people who are obese do not necessarily eat more or exercise less than their lean counterparts. They do. Although the tendency to overeat and exercise too little unquestionably has a genetic component, as described later, the excessive eating at the core of the problem is the reason that obesity could be considered a disorder of eating.

Bulimia Nervosa

You are probably familiar with bulimia nervosa from your own experience or a friend's. It is one of the most common psychological disorders on college campuses. Consider the case of Phoebe.

Phoebe ♦ Apparently Perfect

Phoebe was a classic all-American girl: popular, attractive, intelligent, and talented. By the time she was a senior in high school, she had accomplished a great deal. She was a class officer throughout high school, homecoming princess her sophomore year, and junior prom queen. She dated the captain of the football team. Phoebe had many talents, among them a beautiful singing voice and marked ability in ballet. She played on several school athletic teams. Phoebe maintained an A-minus average, was considered a model student, and was headed for a top-ranked university.

But Phoebe had a secret: She was haunted by her belief that she was fat and ugly. Every single bite of food that she put in her mouth was, in her mind, another step down the inexorable path that led to the end of her success and popularity. Phoebe had been concerned about her weight since she was 11. Ever the perfectionist, she began regulating her eating in junior high school. She would skip breakfast (over the protestations of her mother), eat a small bowl of pretzels at noon, and allow herself one half of whatever she was served for dinner.

This behavior continued into high school, but as Phoebe struggled to restrict her eating, occasionally she would binge on junk food. Sometimes she stuck her fingers down her throat after a binge (she even tried a toothbrush once), but this tactic was unsuccessful—she did not vomit. By the time she was

a senior, Phoebe was obsessed with what she would eat and when. She used every bit of her willpower attempting to restrict her eating, but occasionally she failed. One day during the fall of her senior year, she came home after school and, alone in front of the television, she ate two big boxes of candy. Depressed, guilty, and desperate, she went to the bathroom and stuck her fingers farther down her throat than she had ever before dared. She vomited. And she kept vomiting. Although so physically exhausted that she had to lie down for half an hour, Phoebe had never in her life felt such an overwhelming sense of relief from the anxiety, guilt, and tension that always accompanied her binges. She realized that she had gotten to eat all that candy and now her stomach was empty. It was the perfect solution to her problems.

Phoebe learned quickly what foods she could easily vomit. And she always drank lots of water. She began to restrict her eating even more. She ate almost nothing until after school, but then the results of her dreaming and scheming and planning all morning would be realized. She might pick up a dozen doughnuts and a box of cookies. When she got home, she might make a bowl of popcorn.

And then she ate and ate, forcing down the doughnuts, cookies, and popcorn until her stomach hurt. Finally, with a mixture of revulsion and relief, she purged, forcing herself to vomit. When she was done, she stepped on the scale to make sure she had not gained any weight and then collapsed into bed and slept for about half an hour.

This routine went on for about 6 months, until April of her senior year in high school. By this time, Phoebe had lost much of her energy, and her schoolwork was deteriorating. Her teachers noticed this and saw that she looked bad. She was continually tired, her skin was broken out, and her face puffed up, particularly around her mouth. Her teachers and mother suspected that she might have an eating problem. When they confronted her, she was relieved her problem was finally out in the open.

In an effort to eliminate opportunities to binge and purge, her mother rearranged her schedule to be home in the afternoon when Phoebe got there; in general, her parents minimized the occasions when Phoebe was left alone, particularly after eating. This tactic worked for about a month. Mortally afraid of gaining weight and losing her popularity, Phoebe resumed her pattern, but she was now much better at hiding it. For 6 months Phoebe binged and purged approximately 15 times a week.

When Phoebe went away to college that fall, things became more difficult. Now she had a roommate to contend with, and she was more determined than ever to keep her problem a secret. Although the student health service offered workshops and seminars

on eating disorders for the freshman women, Phoebe knew that she could not break her cycle without the risk of gaining weight. To avoid the communal bathroom, she went to a deserted place behind a nearby building to vomit. Social life at college often involved drinking beer and eating fattening foods, so she vomited more often. Nevertheless, she gained 10 pounds. Gaining weight was common among freshmen, but her mother commented without thinking one day that Phoebe seemed to be putting on weight. This remark was devastating to Phoebe.

She kept her secret until the beginning of her sophomore year, when her world fell apart. One night, after drinking a lot of beer at a party, Phoebe and her friends went to Kentucky Fried Chicken. Although Phoebe did not truly binge because she was with friends, she did eat a lot of fried chicken, the most forbidden food on her list. Her guilt, anxiety, and tension increased to new heights. Her stomach throbbed with pain, but when she tried to vomit, her gag reflex seemed to be gone. Breaking into hysterics, she called her boyfriend and told him she was ready to kill herself. Her loud sobbing and crying attracted the attention of her friends in her dormitory, who attempted to comfort her. At this point, Phoebe realized that her life was out of control and that she needed professional help.

Clinical Description

The hallmark of bulimia nervosa is eating a larger amount of food—typically, more junk food than fruits and vegetables—than most people would eat under similar circumstances (Fairburn & Cooper, 1993; Fairburn, Cooper, Shafran, & Wilson, 2008). Patients with bulimia readily identify with this description even though the actual caloric intake for binges varies significantly from person to person (Franko, Wonderlich, Little, & Herzog, 2004). Just as important as the *amount* of food eaten is that the eating is experienced as *out of control* (Fairburn, Cooper, & Cooper, 1986; Sysko & Wilson, 2011), a criterion that is an integral part of the definition of binge eating.

Another important criterion is that the individual attempts to *compensate* for the binge eating and potential weight gain, almost always by **purging techniques**. Techniques include self-induced vomiting immediately after eating, as in the case of Phoebe, and using laxatives (drugs that relieve constipation) and diuretics (drugs that result in

obesity An excess of body fat resulting in a body mass index (a ratio of weight to height) of 30 or more.

purging techniques In the eating disorder bulimia nervosa, the self-induced vomiting or laxative abuse used to compensate for excessive food ingestion.

loss of fluids through greatly increased frequency of urination). Some people use both methods; others attempt to compensate in other ways. Some exercise excessively (although rigorous exercising is more usually a characteristic of anorexia nervosa; Davis et al. [1997] found that 57% of a group of patients with bulimia nervosa exercised excessively but fully 81% of a group with anorexia did). Others fast for long periods between binges. Bulimia nervosa is subtyped in *DSM-IV-TR* into *purging type* (e.g., vomiting, laxatives, or diuretics) or *nonpurging type* (e.g., exercise and/or fasting). But the nonpurging type has turned out to be rare, accounting for only 6% to 8% of patients with bulimia (Hay & Fairburn, 1998; Striegel-Moore et al., 2001).

DSM Disorder Criteria Summary

Bulimia Nervosa

Features of bulimia nervosa include the following:

- Recurrent episodes of binge eating, characterized by an abnormally large intake of food within a 2-hour period, combined with a sense of lack of control over eating during these episodes
- Recurrent, inappropriate compensatory behavior to prevent weight gain, such as self-induced vomiting, misuse of laxatives, fasting, or excessive exercising
- On average, bingeing and inappropriate compensatory behaviors occur at least twice a week for at least 3 months
- Excessive preoccupation with body shape and weight

Source: Based on *DSM-IV-TR*. Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

Purging is not a particularly efficient method of reducing caloric intake. Vomiting reduces approximately 50% of the calories just consumed, less if it is delayed (Kaye, Weltzin, Hsu, McConaha, & Bolton, 1993); laxatives and related procedures have little effect, acting, as they do, so long after the binge.

One of the more important additions to the *DSM-IV* criteria is the specification of a psychological characteristic clearly present in Phoebe. Despite her accomplishments and success, she felt her continuing popularity and self-esteem would largely be determined by the weight and shape of her body. Garfinkel (1992) noted that, of 107 women seeking treatment for bulimia nervosa, only 3% did not share this attitude. Recent investigations confirm that the major features of the disorder (bingeing, purging, overconcern with body shape, and so on) “cluster together” in someone with this problem, which strongly supports the validity of the diagnostic category (Bulik, Sullivan, & Kendler, 2000; Fairburn, Cooper, Shafran, & Wilson, 2008; Fairburn, Stice, et al., 2003; Franko et al., 2004; Gleaves, Lowe, Snow, Green, & Murphy-Eberenz, 2000; Keel, Mitchell, Miller, Davis, & Crow, 2000). One problem with the *DSM-IV* criteria is that the “nonpurging” subtype has

proved difficult to define and may not be necessary in *DSM-5* (van Hoeken, Veling, Sinke, Mitchell, & Hoek, 2009).

Medical Consequences

Chronic bulimia with purging has a number of medical consequences (Mehler, Birmingham, Crow, & Jahraus, 2010; Pomeroy, 2004). One is salivary gland enlargement caused by repeated vomiting, which gives the face a chubby appearance. This was noticeable with Phoebe. Repeated vomiting also may erode the dental enamel on the inner surface of the front teeth and tear the esophagus. More important, continued vomiting may upset the chemical balance of bodily fluids, including sodium and potassium levels. This condition, called an *electrolyte imbalance*, can result in serious medical complications if unattended, including cardiac arrhythmia (disrupted heartbeat), seizures, and renal (kidney) failure, all of which can be fatal. Young women with bulimia also develop more body fat than age- and weight-matched healthy controls (Ludescher et al., 2009), the very effect they are trying to avoid. Normalization of eating habits will quickly reverse the imbalance. Intestinal problems resulting from laxative abuse are also potentially serious; they can include severe constipation or permanent colon damage. Finally, some individuals with bulimia have marked calluses on their fingers or the backs of their hands caused by the friction of contact with the teeth and throat when repeatedly sticking their fingers down their throat to stimulate the gag reflex.

Associated Psychological Disorders

An individual with bulimia usually presents with additional psychological disorders, particularly anxiety and mood disorders (Sysko & Wilson, 2011). We compared 20 patients with bulimia nervosa to 20 individuals with panic disorder and another 20 with social phobia (Schwalberg, Barlow, Alger, & Howard, 1992). The most striking finding was that 75% of the patients with bulimia also presented with an anxiety disorder such as social phobia or generalized anxiety disorder. This finding was close to the results from the recent definitive national survey on the prevalence of eating disorders and associated psychological disorders, where 80.6% of individuals with bulimia had an anxiety disorder at some point during their lives (Hudson et al., 2007). Patients with anxiety disorders in the study by Schwalberg and colleagues (1992), however, did not necessarily have an elevated rate of eating disorders. Mood disorders, particularly depression, also commonly co-occur with bulimia, with about 20% of bulimic patients meeting criteria for a mood disorder when interviewed and between 50% and 70% meeting criteria at some point during the course of their disorder (Agras, 2001; Hudson et al., 2007; Sysko & Wilson, 2011).

For a number of years, one prominent theory suggested that eating disorders are simply a way of expressing depression. But most evidence indicates that depression *follows* bulimia and may be a reaction to it (Brownell & Fairburn, 1995; Hsu, 1990). Finally, substance abuse commonly ac-

companies bulimia nervosa. For example, Kendler and colleagues (1991) surveyed more than 2,000 twins who were not necessarily seeking treatment and found an elevated rate of alcoholism (15.5%) in participants with bulimia. Keel and colleagues (2003) reported that 33% of their combined sample of individuals with bulimia, anorexia, or both also met criteria for substance abuse, including both alcohol and drugs. In summary, bulimia seems strongly related to anxiety disorders and somewhat less so to mood and substance use disorders. Underlying traits of emotional instability and novelty seeking in these individuals may account for these patterns of comorbidity.

Anorexia Nervosa

The overwhelming majority of individuals with bulimia are within 10% of their normal weight (Hsu, 1990). In contrast, individuals with anorexia nervosa (which literally means a “nervous loss of appetite,” an incorrect definition because appetite often remains healthy) differ in one important way from individuals with bulimia. They are so successful at losing weight that they put their lives in considerable danger. Both anorexia and bulimia are characterized by a morbid fear of gaining weight and losing control over eating. The major difference seems to be whether the individual is successful at losing weight. People with anorexia are proud of both their diets and their extraordinary control. People with bulimia are ashamed of both their eating issues and their lack of control (Brownell & Fairburn, 1995). Consider the case of Julie.

Julie ♦ The Thinner, the Better

Julie was 17 years old when she first came for help. She looked emaciated and unwell. Eighteen months earlier she had been overweight, weighing 140 pounds at 5 feet 1 inch. Her mother, a well-meaning but overbearing and demanding woman, nagged Julie incessantly about her appearance. Her friends were kinder but no less relentless. Julie, who had never had a date, was told by a friend she was cute and would have no trouble getting dates if she lost some weight. So she did! After many previous unsuccessful attempts, she was determined to succeed this time.

After several weeks on a strict diet, Julie noticed she was losing weight. She felt a control and mastery that she had never known before. It wasn't long before she received positive comments, not only from her friends, but also from her mother. Julie began to feel good about herself. The difficulty was that she was losing weight too fast. She stopped menstruating. But now nothing could stop her from dieting. By the time she reached our clinic, she weighed 75 pounds. Her parents had just begun to worry about her. Julie did not initially seek treatment for her eating behavior. Rather, she had developed a numbness in her left

lower leg and a left foot drop—an inability to lift up the front part of the foot—that a neurologist determined was caused by peritoneal nerve paralysis believed to be related to inadequate nutrition. The neurologist referred her to our clinic.

Like most people with anorexia, Julie said she probably should put on a little weight, but she didn't mean it. She thought she looked fine, but she had “lost all taste for food,” a report that may not have been true because most people with anorexia crave food at least some of the time but control their cravings. Nevertheless, she was participating in most of her usual activities and continued to do extremely well in school and in her extracurricular pursuits. Her parents were happy to buy her most of the workout videotapes available, and she began doing one every day—and then two. When her parents suggested she was exercising enough, and perhaps too much, she worked out when no one was around. After every meal, she exercised with a workout tape until, in her mind, she burned up all the calories she had just taken in.

The tragic consequences of anorexia among young celebrities and within the modeling world have been well publicized in the media. In November 2006, 21-year-old Brazilian model Ana Carolina Reston died; she weighed 88 pounds. At 5 feet 8 inches, she had a BMI of 13.4 (16 is considered starvation). Around the same time, first Spain, then Italy, Brazil, and India instituted bans on models with BMIs less than 18 from their top fashion shows (30% of models in Spain were turned away). It is not clear yet whether the bans have affected popular perception of ideal body size in these countries.

Clinical Description

Anorexia nervosa is less common than bulimia, but there is a great deal of overlap. For example, many individuals with bulimia have a history of anorexia—that is, they once used fasting to reduce their body weight below desirable levels (Fairburn, Cooper, Shafran, & Wilson, 2008; Fairburn, Welch, et al., 1997).

Although decreased body weight is the most notable feature of anorexia nervosa, it is not the core of the disorder. Many people lose weight because of a medical condition, but people with anorexia have an intense fear of obesity and relentlessly pursue thinness (Fairburn, Cooper, Shafran, & Wilson, 2008; Hsu, 1990; Schlundt & Johnson, 1990; Stice, Cameron, Killen, Hayward, & Taylor, 1999). As with Julie, the disorder most commonly begins in an adolescent who is overweight or who perceives herself to be. She then starts a diet that escalates into an obsessive preoccupation with being thin. Severe, almost punishing exercise is common (Davis et al., 1997). Dramatic weight loss is achieved through severe caloric restriction or by combining caloric restriction and purging.



Chris Rount/Alamy



NMSB/Custom Medical Stock

▲ These women are at different stages of anorexia.

DSM Disorder Criteria Summary

Anorexia Nervosa

Features of anorexia nervosa include the following:

- Refusal to maintain body weight at or above a minimally normal level
- Intense fear of gaining weight
- Inappropriate evaluation of one's weight or shape or denial of the seriousness of the current low body weight
- Amenorrhea

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DSM-IV specifies two subtypes of anorexia nervosa. In the *restricting type*, individuals diet to limit calorie intake; in the *binge-eating-purging type*, they rely on purging. Unlike individuals with bulimia, binge-eating-purging anorexics binge on relatively small amounts of food and purge more consistently, in some cases each time they eat. Approximately half the individuals who meet criteria for anorexia engage in binge eating and purging (Agras, 1987; Fairburn, Cooper, Shafran, & Wilson, 2008; Garfinkel, Moldofsky, & Garner, 1979). Prospective data collected over 8 years on 136 individuals with anorexia reveal few differences between these two subtypes on severity of symptoms or personality (Eddy et al., 2002). At that time, 62% of the restricting subtype had begun bingeing or purging. Thus, subtyping may not be useful in predicting the future course of the disorder but rather may reflect a certain phase or stage of anorexia, a finding confirmed in a more recent study (Eddy et al., 2008). For this reason, a proposal likely to be adopted in *DSM-5* specifies that subtyping refer only to the past 3 months (Peat, Mitchell, Hoek, & Wonderlich, 2009).

Individuals with anorexia are never satisfied with their weight loss. Staying the same weight from one day to the next or gaining any weight is likely to cause intense panic, anxiety, and depression. Only continued weight loss every day for weeks on end is satisfactory. Although *DSM-IV* criteria specify body weight 15% below that expected, the average is approximately 25% to 30% below normal by the time treatment is sought (Hsu, 1990). Another key criterion of anorexia is a marked disturbance in body image. When Julie looked at herself in the mirror, she saw something different from what others saw. They saw an emaciated, sickly, frail girl in the throes of semistarvation. Julie saw a girl who still needed to lose at least a few pounds from some parts of her body. For Julie, her face and buttocks were the problems. Other girls might focus on other parts, such as the arms or legs or stomach.

After seeing numerous doctors, people like Julie become good at mouthing what others expect to hear. They may agree they are underweight and need to gain a few pounds—but they don't believe it. Question further and they will tell you the girl in the mirror is fat. Therefore, individuals with anorexia seldom seek treatment on their own. Usually pressure from somebody in the family leads to the initial visit, as in Julie's case (Agras, 1987; Fairburn, Cooper, Shafran, & Wilson, 2008). Perhaps as a demonstration of absolute control over their eating, some individuals with anorexia show increased interest in cooking and food. Some have become expert chefs, preparing all the food for the family. Others hoard food in their rooms, looking at it occasionally.

Medical Consequences

One common medical complication of anorexia nervosa is cessation of menstruation (amenorrhea), which also occurs relatively often in bulimia (Crow, Thuras, Keel, & Mitchell, 2002). This feature can be an objective physical index of the degree of food restriction but is inconsistent because it does not occur in all cases (Franko et al., 2004). Because of this inconsistency, amenorrhea is likely to be dropped as a diagnostic criteria in *DSM-5* (Attia & Roberto, 2009; Fairburn, Cooper, Shafran, & Wilson, 2008; Mitchell, Cook-Myers, & Wonderlich, 2005). Other medical signs and symptoms of anorexia include dry skin, brittle hair or nails, and sensitivity to or intolerance of cold temperatures. Also, it is relatively common to see *lanugo*, downy hair on the limbs and cheeks. Cardiovascular problems, such as chronically low blood pressure and heart rate, can also result. If vomiting is part of the anorexia, electrolyte imbalance and resulting cardiac and kidney problems can result, as in bulimia (Mehler et al., 2010).

Associated Psychological Disorders

As with bulimia nervosa, anxiety disorders and mood disorders are often present in individuals with anorexia (Agras, 2001; Kaye et al., 1993; Sysko & Wilson, 2011;

Vitiello & Lederhendler, 2000), with rates of depression occurring at some point during their lives in as many as 71% of cases (Godart et al., 2007). Of interest, one anxiety disorder that seems to co-occur often with anorexia is obsessive-compulsive disorder (OCD) (see Chapter 4; Keel et al., 2004). In anorexia, unpleasant thoughts are focused on gaining weight, and individuals engage in a variety of behaviors, some of them ritualistic, to rid themselves of such thoughts. Substance abuse is also common in individuals with anorexia nervosa (Keel et al., 2003; Root et al., 2010), and, in conjunction with anorexia, is a strong predictor of mortality, particularly by suicide.

Binge-Eating Disorder

Beginning in the 1990s, research focused on a group of individuals who experience marked distress because of binge eating but do *not* engage in extreme compensatory behaviors and therefore cannot be diagnosed with bulimia (Castonguay, Eldredge, & Agras, 1995; Fairburn et al., 1998; Spitzer et al., 1991). These individuals have binge-eating disorder (BED). Currently, BED is in the appendix of *DSM-IV-TR* as a potential new disorder requiring further study, but it will almost certainly be included as a disorder in its own category in *DSM-5* (Wonderlich, Gordon, Mitchell, Crosby, & Engel, 2009). Evidence that supports this distinction includes somewhat different patterns of heritability compared to other eating disorders (Bulik et al., 2000) and a greater likelihood of occurring in males and a later age of onset. There is also a greater likelihood of remission and a better response to treatment in BED compared to other eating disorders (Striegel-Moore & Franko, 2008; Wonderlich et al., 2009).

Individuals who meet preliminary criteria for BED are often found in weight-control programs. For example, Brody, Walsh, and Devlin (1994) studied mildly obese participants in a weight-control program and identified 18.8% who met criteria for BED. In other programs, with participants ranging in degree of obesity, close to 30% met criteria (see, for example, Spitzer et al., 1993). But Hudson and colleagues (2006) concluded that BED is a disorder caused by a separate set of factors from obesity without BED and is associated with more severe obesity. The general consensus is that about 20% of obese individuals in weight-loss programs engage in binge eating, with the number rising to approximately 50% among candidates for bariatric surgery (surgery to correct severe or morbid obesity). Fairburn, Cooper, Doll, Norman, and O'Connor (2000) identified 48 individuals with BED and were able to prospectively follow 40 of them for 5 years. The prognosis was relatively good for this group, with only 18% retaining the full diagnostic criteria for BED at a 5-year follow-up. The percentage of this group who were obese, however, increased from 21% to 39% at the 5-year mark.

About half of individuals with BED try dieting before bingeing, and half start with bingeing and then attempt to diet (Abbott et al., 1998); those who begin bingeing first become more severely affected by BED and are more likely

to have additional disorders (Spurrell, Wilfley, Tanofsky, & Brownell, 1997). It's also increasingly clear that individuals with BED have some of the same concerns about shape and weight as people with anorexia and bulimia, which distinguishes them from individuals who are obese without BED (Fairburn, Cooper, Shafran, & Wilson, 2008; Goldschmidt et al., 2010; Grilo, Masheb, & White, 2010; Hrabosky, Masheb, White, & Grilo, 2007). It seems that approximately 33% of those with BED binge to alleviate "bad moods" or negative affect (see, for example, Grilo, Masheb, & Wilson, 2001; Stice, Akutagawa, Gaggan, & Agras, 2000; Stice et al., 2001). These individuals are more psychologically disturbed than the 67% who do not use bingeing to regulate mood (Grilo et al., 2001).

Statistics

Clear cases of bulimia have been described for thousands of years (Parry-Jones & Parry-Jones, 2002), but bulimia nervosa was recognized as a distinct psychological disorder only in the 1970s (Boskind-Lodahl, 1976; Russell, 1979). Therefore, information on prevalence has been acquired relatively recently.

Among those who present for treatment, the overwhelming majority (90% to 95%) of individuals with bulimia are women; most are white and middle to upper-middle class. Males with bulimia have a slightly later age of onset, and a large minority are predominantly gay males or bisexual (Rothblum, 2002). For example, Carlat, Camargo, and Herzog (1997) accumulated information on 135 male patients with eating disorders who were seen over 13 years and found that 42% were either gay or bisexual, a far higher rate of eating disorders than found in heterosexual males (Feldman & Meyer, 2007). Male athletes in sports that require weight regulation, such as wrestling, are another large group of males with eating disorders (Ricciardelli & McCabe, 2004). Among women, adolescent girls are most at risk. A recent prospective 8-year survey of 496 adolescent girls reported that more than 12% experienced some form of eating disorder by the time they were 20 (Stice, Marti, Shaw, & Jaconis, 2009). In another elegant prospective study, eating-related problems of 1,498 freshmen women at a large university were studied over the 4-year college experience. Only 28% to 34% had no eating-related concerns. But 29% to 34% consistently attempted to limit their food intake because of weight/shape concerns; 14% to 18% engaged in overeating and binge eating; another 14% to 17% combined attempts to limit intake with binge eating; and 6% to 7% had pervasive bulimic-like concerns. And these tendencies were stable for the most part throughout their 4 years of college (Cain, Epler, Steinley, & Sher, 2010).

A somewhat different view of the prevalence of bulimia comes from studies of the population rather than of specific groups of adolescents, with the most definitive study appearing in 2007 (Hudson et al., 2007). These results from the national comorbidity survey reflect lifetime and 12-month prevalence, not only for the three major eating

disorders described here, but also for “subthreshold” BED, where binge eating occurred at a high-enough frequency but some additional criteria, such as “marked distress” regarding the binge eating, were not met. Therefore, the disorder did not meet the diagnostic “threshold” for BED. In addition, only a 3-month duration was required for BED (or subthreshold BED), as is proposed for *DSM-5*, rather than the 6 months required in *DSM-IV-TR*. Thus, the prevalence of BED reported in this survey may be slightly higher than if the *DSM-IV* 6-month criteria were used. Finally, if binge eating occurred at least twice a week for 3 months, even if it was just a symptom of the four other disorders in Table 8.1 rather than a separate condition, the case was listed under “Any binge eating.” This latter category provides an overall picture of the prevalence of binge eating. These data are all presented in Table 8.1. As you can see, lifetime prevalence was consistently 2 to 3 times greater for females, with the exception of subthreshold BED. This sex ratio reflects a somewhat higher proportion of males than found in other samples, but because there are so few males in any study of eating disorders, these results tend to be unstable. No 12-month cases of anorexia were found in this sample, but a large study in Finland based on a telephone survey found a higher lifetime prevalence of anorexia of 2.2%, and half those cases had not been detected in the health-care system (Keski-Rahkonen et al., 2007). So it is possible that the prevalence of anorexia is underrepresented in some surveys.

The median age of onset for all eating-related disorders occurred in a narrow range of 18 to 21 years (Hudson et al., 2007). For anorexia, this age of onset was fairly consistent, with younger cases tending to begin at age 15, but it was more common for cases of bulimia to begin as early as age 10, as it did for Phoebe.

Once bulimia develops, it tends to be chronic if untreated (Fairburn et al., 2000; Fairburn, Stice, et al., 2003; Hudson et al., 2007; Keel & Mitchell, 1997); one study shows the “drive for thinness” and accompanying symptoms still present in a group of women 10 years after diagnosis (Joiner, Heatherton, & Keel, 1997). In an important study of the course of bulimia, referred to earlier, Fairburn and colleagues (2000) identified a group of 102 females with bulimia nervosa and followed 92 of them prospectively for 5 years. About a third improved to the point where they no longer met diagnostic criteria each year, but another third who had improved previously relapsed. Between 50% and 67% exhibited serious eating disorder symptoms at the end of each year of the 5-year study, indicating this disorder has a relatively poor prognosis. In a follow-up study, Fairburn, Stice, and colleagues (2003) reported that the strongest predictors of persistent bulimia were a history of childhood obesity and a continuing overemphasis on the importance of being thin. Similarly, once anorexia develops, its course seems chronic—although not so chronic as bulimia, based on data from Hudson and colleagues (2007), particularly if it is caught early and treated. But individuals with anorexia tend to maintain a low BMI over a long period, along with distorted perceptions of

Table 8.1 Lifetime and 12-Month Prevalence Estimates of *DSM-IV-TR* Eating Disorders and Related Problems

	Male	Female	Total
	%	%	%
I. Lifetime prevalence			
Anorexia nervosa	0.3	0.9	0.6
Bulimia nervosa	0.5	1.5	1.0
Binge-eating disorder	2.0	3.5	2.8
Subthreshold binge-eating disorder	1.9	0.6	1.2
Any binge eating	4.0	4.9	4.5
II. 12-month prevalence*			
Bulimia nervosa	0.1	0.5	0.3
Binge-eating disorder	0.8	1.6	1.2
Subthreshold binge-eating disorder	0.8	0.4	0.6
Any binge eating	1.7	2.5	2.1
(n) Number of participants	(1,220)	(1,760)	(2,980)

*None of the respondents met criteria for 12-month anorexia nervosa.

Source: From Hudson et al. (2007). The prevalence and correlates of eating disorders in the national comorbidity survey replication. *Biological Psychiatry*, 61, 348–358. © Society for Biological Psychiatry.

shape and weight, indicating that even if they no longer meet criteria for anorexia they continue to restrict their eating (Fairburn, Cooper, Shafran, & Wilson, 2008). Perhaps for this reason, anorexia is thought to be more resistant to treatment than bulimia, based on clinical studies (Herzog et al., 1999; Vitiello & Lederhendler, 2000). In one 7-year study following individuals who had received treatment, 33% of those with anorexia versus 66% of those with bulimia reached full remission at some point during the follow-up (Eddy et al., 2008).

Cross-Cultural Considerations

We have already discussed the highly culturally specific nature of anorexia and bulimia. A particularly striking finding is that these disorders develop in immigrants who have recently moved to Western countries (Anderson-Fye, 2009). One of the more interesting studies is Nasser’s 1986 survey of 50 Egyptian women in London universities and 60 Egyptian women in Cairo universities (Nasser, 1988). There were no instances of eating disorders in Cairo, but 12% of the Egyptian women in England had developed eating disorders.

The prevalence of eating disorders varies among most North American minority populations, including African Americans, Hispanics, Native Americans, and Asians. Compared to Caucasians, the prevalence of eating disorders is lower among African American and Asian American females, equally common among Hispanic females, and



Jonathan Kantor Studio/JupiterImages

▲ Anorexia seldom occurs among North American black women.

more common among Native Americans (Crago, Shisslak, & Estes, 1997). Generally, surveys reveal that African American adolescent girls have less body dissatisfaction, fewer weight concerns, and a more positive self-image and perceive themselves to be thinner than they are compared to Caucasian adolescent girls (Celio, Zabinski, & Wilfley, 2002). Greenberg and LaPorte (1996) observed in an experiment that young white males preferred somewhat thinner figures in women than African American males, which may contribute to the somewhat lower incidence of eating disorders in African American women.

There is a relatively high incidence of purging behavior in some minority groups. In most cases, the purging seems to be associated with obesity. Rosen and colleagues (1988) found widespread purging and related behaviors in a group of American Indian Chippewa women. Among this group, 74% had dieted and 55% had used harmful weight-loss techniques such as fasting or purging; 12% had vomited and 6% reported use of laxatives or diuretics.

In Japan, the prevalence of anorexia nervosa among teenage girls is still lower than the rate in North America, but, as mentioned previously, it seems to be increasing. The need to be thin or the fear of becoming overweight has not been as important in Japanese culture as it is in North America, although this may be changing as cultures around the world become more Westernized (Kawamura, 2002).

In conclusion, anorexia and bulimia are relatively homogeneous and, until recently, were overwhelmingly associated with Western cultures. In addition, the frequency and pattern of occurrence among minority Western cultures differs somewhat but is associated with closer identification with Caucasian middle-class and upper-class values.

Developmental Considerations

Because the overwhelming majority of cases begin in adolescence, it is clear that anorexia and bulimia are strongly related to development (Smith, Simmons, Flory, Annus, & Hill, 2007). As pointed out by Striegel-Moore, Silberstein, and Rodin (1986) and Attie and Brooks-Gunn (1995), differential patterns of physical development in girls and boys

interact with cultural influences to create eating disorders. After puberty, girls gain weight primarily in fat tissue, whereas boys develop muscle and lean tissue. As the ideal look in Western countries is tall and muscular for men and thin and prepubertal for women, physical development brings boys closer to the ideal and takes girls further away.

Eating disorders, particularly anorexia nervosa, occasionally occur in children younger than age 11 (Walsh, 2010). Negative attitude toward being overweight emerges as early as 3 years of age, and more than half of girls age 6–8 would like to be thinner (Striegel-Moore & Franko, 2002). By 9 years of age, 20% of girls reported trying to lose weight, and by 14, 40% were trying to lose weight (Field et al., 1999).

Both bulimia and anorexia can occur in later years, particularly after the age of 55. Hsu and Zimmer (1988) reported that most of these individuals had had an eating disorder for decades with little change in their behavior. However, in a few cases onset did not occur until later years, and it is not yet clear what factors were involved. Generally, concerns about body image decrease with age (Tiggemann & Lynch, 2001; Whitbourne & Skultety, 2002).

Concept Check 8.1

Check your understanding of eating disorders by identifying the proper disorder in the following scenarios: (a) bulimia nervosa, (b) anorexia nervosa, and (c) binge-eating disorder.

1. Manny has been having episodes lately when he eats prodigious amounts of food. He's been putting on a lot of weight because of it. _____
2. I noticed Elena eating a whole pie, a cake, and two bags of potato chips the other day when she didn't know I was there. She ran to the bathroom when she was finished and it sounded like she was vomiting. This disorder can lead to an electrolyte imbalance, resulting in serious medical problems. _____
3. Joo-Yeon eats large quantities of food in a short time. She then takes laxatives and exercises for long periods to prevent weight gain. She has been doing this almost daily for several months and feels she will become worthless and ugly if she gains even an ounce. _____
4. Kirsten has lost several pounds and now weighs less than 90 pounds. She eats only a small portion of the food her mother serves her and fears that intake above her current 500 calories daily will make her fat. Since losing the weight, Kirsten has stopped having periods. She sees a fat person in the mirror. _____



We all eat. However, what we eat and how much of it we consume is strongly influenced by the culture in which we live. As mentioned earlier, cultural influences contribute to differences in the rates of eating disorders, such as anorexia nervosa and bulimia nervosa, across sexes, ethnicities, and geographic regions. Eating disorders are much more prevalent among women than men and occur significantly more often among European American women than African American women (Striegel-Moore et al., 2003).

How is it that culture influences eating in way that makes eating disorders more prevalent among these groups? A leading possibility is the beliefs held in different cultures about the ideal body shape. The more a culture values thinness, the greater the desire of people within that culture to attain a lower weight and thinner body shape. Interestingly, studies have shown that as the ideal body shape for women to have has become ever thin-

ner (as shown, for example, in the shrinking measurements of *Playboy* centerfolds and Miss America Pageant contestants over the past several decades), the rates of eating disorders among young girls in Western cultures have increased (Keel & Klump, 2003).

Evidence of the influence of cultural factors—and not some genetic or other biological factor operating within Western cultures—comes from several interesting studies that investigate how a change in culture can influence the rate of eating disorders. Such studies have shown that women from Eastern and Middle Eastern cultures who attend Western universities have much higher rates of eating disorders while in the Western culture compared with women from their home country (Mumford, Whitehouse, & Platts, 1991; Nasser, 1988). One could argue that something about the women who decided to study in the West influenced the occurrence of the eating disorders in that

group. However, further evidence of the influence of aspects of Western culture, such as the thin ideal for women, comes from an interesting study on the development of eating problems among girls on the island of Fiji after the introduction of television on Fiji in 1995. Within 1 month of seeing television for the first time, 7.9% of Fijian girls reported binge eating, and the rate of self-induced vomiting increased from 0% to 11% over the next 3 years (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002). Interviews with Fijian girls revealed that they had begun to model themselves after the girls observed on television, providing evidence for the influence of Western culture on their eating behavior. Overall, although there appears to be a genetic basis for eating disorders, these studies highlight the strong influence that culture can have on a person's self-image, eating habits, and likelihood of developing an eating disorder.

Causes of Eating Disorders

› What social, psychological, and neurobiological factors might cause eating disorders?

As with all disorders discussed in this book, biological, psychological, and social factors contribute to the development of these serious eating disorders. However, the evidence is increasingly clear that the most dramatic factors are social and cultural.

Social Dimensions

Remember that anorexia and bulimia are the most culturally specific psychological disorders yet identified. What drives so many young people into a punishing and life-threatening routine of semistarvation or purging? For many young Western women, looking good is more important than being healthy. For young females in middle- to upper-class competitive environments, self-worth, happiness, and success are largely determined by body measurements and percentage of body fat—factors that have little or no correlation with personal happiness and success in the long run. The cultural imperative for thinness directly results in dieting, the first dangerous step down the slippery slope to anorexia and bulimia.

Levine and Smolak (1996) refer to “the glorification of slenderness” in magazines and on television, where most females are thinner than average American women. Because overweight men are 2 to 5 times more common as television characters than overweight women, the message from the media to be thin is clearly aimed at women, and the message gets through loud and clear. Grabe, Ward, and Hyde (2008), reviewing 77 studies, demonstrated a strong relationship between exposure to media images depicting the thin-ideal body and body image concerns in women. An analysis of prime-time television situation comedies revealed that 12% of female characters were dieting and many were making disparaging comments about their body image (Tiggemann, 2002). Finally, Thompson and Stice (2001) found that risk for developing eating disorders was directly related to the extent to which women internalize or “buy in” to the media messages and images glorifying thinness, a finding also confirmed by Cafri, Yamamiya, Brannick, and Thompson (2005).

The problem with today's standards is that they are increasingly difficult to achieve because the size and weight of the average woman has increased over the years with

improved nutrition; there is also a general increase in size throughout history (Brownell, 1991; Brownell & Rodin, 1994). Whatever the cause, the collision between our culture and our physiology (Brownell, 1991; Brownell & Fairburn, 1995) has had some negative effects, one of which is that women became dissatisfied with their bodies.

Fallon and Rozin (1985), studying male and female undergraduates, found that men rated their current size, their ideal size, and the size they figured would be most attractive to the opposite sex as approximately equal; indeed, they rated their ideal body weight as *heavier* than the weight females thought most attractive in men (■ Figure 8.1). Women, however, rated their current figures as much heavier than what they judged the most attractive, which in turn, was rated as heavier than what they thought was ideal. This conflict between reality and fashion seems most closely related to the current epidemic of eating disorders.

Other researchers have presented interesting data that support Fallon and Rozin's findings that men have different body image perceptions than women. Pope and colleagues (2000) confirmed that men generally desire to be heavier and more muscular than they are. The authors measured the height, weight, and body fat of college-age men in three countries—Austria, France, and the United States. They asked the men to choose the body image that they felt represented (1) their own body, (2) the body they ideally would like to have, (3) the body of an average man of their age, and (4) the male body they believed was preferred by women. In all three countries, men chose an ideal body weight that was approximately 28 pounds more muscular than their current one. They also estimated that women would prefer a male body about 30 pounds more muscular than their current one. In contradiction to the impression, Pope and colleagues (2000) demonstrated, in a pilot study, that most women preferred an ordinary male body without the added muscle. Men who abuse anabolic-androgenic steroids to increase muscle mass and “bulk up” possess these distorted attitudes toward muscles, weight,

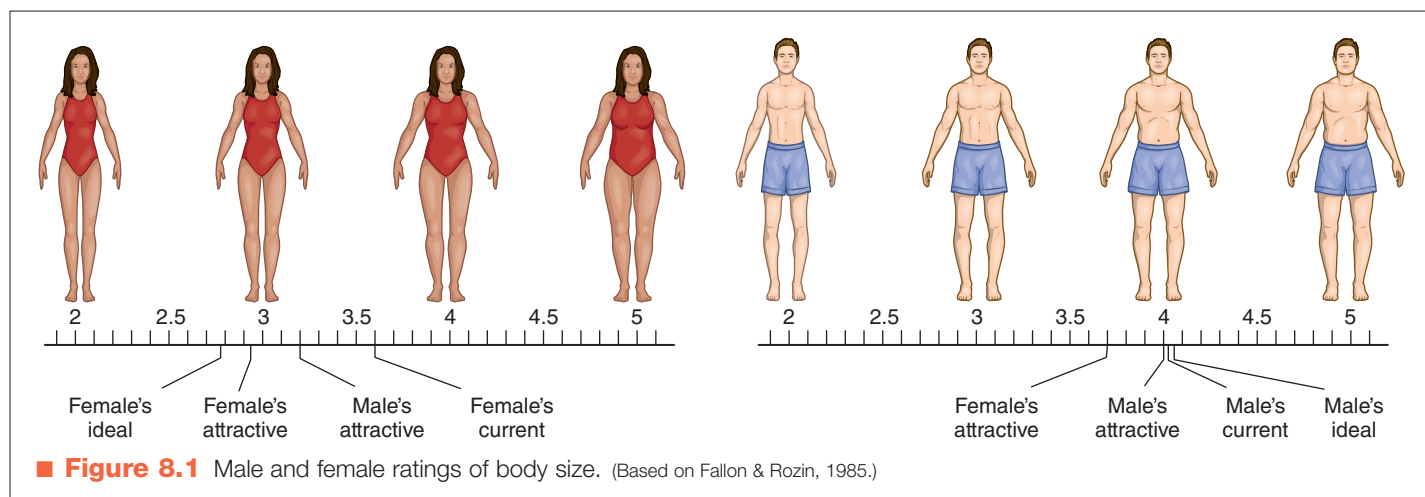
and the “ideal man” to a greater degree than men who don't use steroids (Kanayama, Barry, & Pope, 2006).

We have some specific information on how these attitudes are socially transmitted in adolescent girls. Paxton, Schutz, Wertheim, and Muir (1999) explored the influence of close friendship groups on attitudes concerning body image, dietary restraint, and extreme weight-loss behaviors. In a clever experiment, the authors identified 79 different friendship cliques in a group of 523 adolescent girls. They found that these friendship cliques tended to share the same attitudes toward body image, dietary restraint, and the importance of attempts to lose weight. It was also clear from the study that these friendship cliques contributed significantly to the formation of individual body image concerns and eating behaviors. In other words, if your friends tend to use extreme dieting or other weight-loss techniques, there is a greater chance that you will, too (Field et al., 2001; Vander Wal & Thelen, 2000).

The abhorrence of fat can have tragic consequences. In one study, toddlers with affluent parents appeared at hospitals with “failure to thrive” syndrome, in which growth and development are severely retarded because of inadequate nutrition. In each case, the parents had put their young, healthy, but somewhat chubby toddlers on diets in the hope of preventing obesity at a later date (Pugliese, Weyman-Daun, Moses, & Lifshitz, 1987).

Most people who diet don't develop eating disorders, but Patton, Johnson-Sabine, Wood, Mann, and Wakeling (1990) determined in a prospective study that adolescent girls who dieted were 8 times more likely to develop an eating disorder 1 year later than those who weren't dieting. And Telch and Agras (1993) noted marked increases in bingeing during and after rigorous dieting in 201 obese women.

Stice and colleagues (1999) demonstrated that one of the reasons attempts to lose weight may lead to eating disorders is that weight-reduction efforts in adolescent girls are more likely to result in weight *gain* than weight



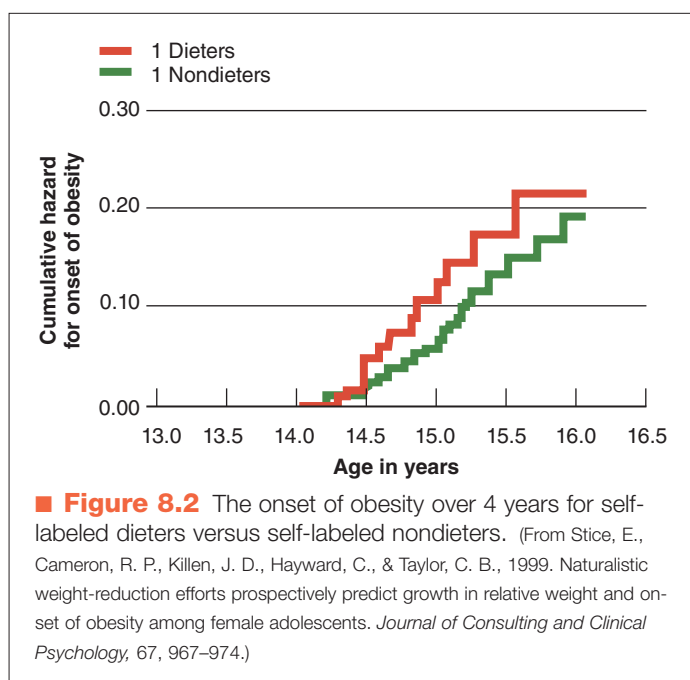


Peter Will/SuperStock



Michael Bush/UP/Landov

▲ Changing concepts of ideal weight are evident in a 17th-century painting by Peter Paul Rubens and in a photograph of a current fashion model.



loss. To establish this finding, 692 girls, initially the same weight, were followed for 4 years. Girls who attempted dieting faced more than 300% greater risk of obesity than those who did not diet. Results are presented in ■ Figure 8.2.

It is not yet entirely clear why dieting leads to bingeing in only some people (Polivy & Herman, 1993), but the relationship is strong. In one study, Urbszat, Herman, and Polivy (2002) told 46 undergraduates that they would either be dieting for a week (Group 1) or not (Group 2) and then presented them with food under the pretext of giving them a taste test. But investigators were really looking at how much they ate during the test, not their ratings of taste. People who expected to go on a diet ate more than the group that didn't—but *only* if they were “restrained eaters” who were continually attempting to restrict their intake of food, particularly fattening food. Thus, attempts to restrict intake may put people at risk for bingeing. Fairburn, Cooper, Doll, and Davies (2005) examined a group of 2,992 young women who were dieting and identified 104 who developed an eating disorder over the next 2 years. Among all of these dieters, several risk factors

were identified. Those most at risk for developing an eating disorder were already binge eating and purging, were eating in secret, expressed a desire to have an empty stomach, were preoccupied with food, and were afraid of losing control over eating.

Distortions of body image in some males can also have tragic consequences. Olivardia, Pope, and Hudson (2000) have described a syndrome in men, particularly male weight lifters, that they initially termed “reverse anorexia nervosa.” Men with this syndrome reported they were extremely concerned about looking small, even though they were muscular. Many of these men avoided beaches, locker rooms, and other places where their bodies might be seen. These men also were prone to using anabolic-androgenic steroids to bulk up, risking both the medical and the psychological consequences of taking steroids. The conflict over body image would be bad enough if size were infinitely malleable, but it is not. Increasing evidence indicates a strong genetic contribution to body size; that is, some of us are born to be heavier than others, and we are all shaped differently. Although most of us can be physically fit, few can achieve the levels of fitness and shape so highly valued today. Biologically, it is nearly impossible (Brownell, 1991; Brownell & Fairburn, 2002). Nevertheless, many young people in our society fight biology to the point of starvation. In adolescence, cultural standards are often experienced as peer pressure and are more influential than reason and fact. The high number of males who are homosexual among the relatively small numbers of males with eating disorders has also been attributed to pressures among gay men to be physically trim (Carlat et al., 1997; Feldman & Meyer, 2007). Conversely, pressure to appear more fit and muscular is also apparent for a substantial proportion of men (Pope et al., 2000).

Dietary Restraint

If cultural pressures to be thin are as important as they seem to be in triggering eating disorders, then such disorders would be expected to occur where these pressures are particularly severe, which is just what happens to ballet dancers, who are under extraordinary pressures to be thin. Garner, Garfinkel, Rockert, and Olmsted (1987) followed a group of 11- to 14-year-old female students in ballet school. The conservative estimate was that at least 25% of these girls developed eating disorders during the 2 years of the study. Similar results are apparent among athletes (such as gymnasts), particularly females. What goes on in ballet classes that has such a devastating effect on girls? Consider the case of Phoebe again.



Abnormal Psychology Inside Out. Produced by Ira Wohl, Only Child Motion Pictures

Anorexia Nervosa: Susan

“Basically . . . I don’t want to eat because it seems like, as soon as I eat, I just gain weight, get fat. . . . There are some times when I can’t stop it, I just have to, and then, once I eat, there is a strong urge to either purge or take a laxative. . . . It never stops. . . . It becomes very obsessive, where you’re getting on the scales 10 times a day. . . . I weigh 96 pounds now.”

Go to Psychology CourseMate at www.cengagebrain.com to watch this video.

Phoebe • Dancing to Destruction

Phoebe remembered clearly that during her early years in ballet the older girls talked incessantly about their weight. Phoebe performed well and looked forward to the rare compliment. The ballet mistress seemed to comment more on weight than on dance technique, often remarking, “You’d dance better if you lost weight.” If one little girl lost a few pounds through heroic dieting, the instructor always pointed it out: “You’ve done well working on your weight. The rest of you had better follow this example.” One day, without warning, the instructor said to Phoebe, “You need to lose 5 pounds before the next class.” At that time, Phoebe was 5 feet 2 inches and weighed 98 pounds. The next class was in 2 days. After one of these admonitions and several days of restrictive eating, Phoebe experienced her first uncontrollable binge.

Early in high school, Phoebe gave up the rigors of ballet to pursue a variety of other interests. She did not forget the glory of her starring roles as a young dancer or how to perform the steps. She still danced occasionally by herself and retained the grace that serious dancers effortlessly display. But in college, as she stuck her head in the toilet bowl, vomiting her guts out for perhaps the third time that day, she realized there was one lesson she had learned in ballet class more deeply and thoroughly than any other—the life-or-death importance of being thin at all costs.

Thus, dieting is one factor that can contribute to eating disorders (Polivy & Herman, 2002), and, along with dissatisfaction with one’s body, is a primary risk factor for later eating disorders (Stice, Ng, & Shaw, 2010).

Family Influences

Much has been made of the possible significance of family interaction patterns in cases of eating disorders. A number of investigators (see, for example, Attie & Brooks-Gunn,

1995; Bruch, 1985; Humphrey, 1986, 1988, 1989; Minuchin, Rosman, & Baker, 1978) have found that the “typical” family of someone with anorexia is successful, hard-driving, concerned about external appearances, and eager to maintain harmony. To accomplish these goals, family members often deny or ignore conflicts or negative feelings and tend to attribute their problems to other people at the expense of frank communication among themselves (Fairburn, Shafran, & Cooper, 1999; Hsu, 1990).

Pike and Rodin (1991) confirmed the differences in interactions within the families of girls with disordered eating in comparison with control families. Basically, mothers of girls with disordered eating seemed to act as “society’s messengers” in wanting their daughters to be thin (Steinberg & Phares, 2001). They were likely to be dieting themselves and, generally, were more perfectionistic than comparison mothers in that they were less satisfied with their families and family cohesion (Fairburn, Cooper, et al., 1999; Fairburn, Welch, et al., 1997).

Whatever the preexisting relationships, after the onset of an eating disorder, particularly anorexia, family relationships can deteriorate quickly. Educated and knowledgeable parents, including psychologists and psychiatrists with full understanding of the disorder, have reported resorting to physical violence (for example, hitting or slapping) in moments of extreme frustration, in a vain attempt to get their daughters to put some food, however little, in their mouths. The parents’ guilt and anguish was considerable.

Biological Dimensions

Like most psychological disorders, eating disorders run in families and thus seem to have a genetic component (Strober, 2002). Although completed studies are only preliminary, they suggest that relatives of patients with eating disorders are 4 to 5 times more likely than the general population to develop eating disorders themselves, with the risks for female relatives of patients with anorexia a bit higher (see, for example, Hudson, Pope, Jonas, & Yurgelun-Todd, 1983; Strober, Freeman, Lampert, Diamond, & Kaye, 2000; Strober & Humphrey, 1987). In important twin studies of bulimia by Kendler and colleagues (1991) and of anorexia by Walters and Kendler (1995), researchers used structured interviews to ascertain the prevalence of the disorders among 2,163 female twins. In 23% of identical twin pairs, both twins had bulimia, as compared to 9% of fraternal twins. Because no adoption studies have yet been reported, strong sociocultural influences cannot be ruled out, and other studies have produced inconsistent results (Fairburn, Cowen, & Harrison, 1999). For anorexia, numbers were too small for precise estimates, but the disorder in one twin did seem to confer a significant risk for both anorexia and bulimia in the co-twin.

An emerging consensus is that genetic makeup is about half of the equation among causes of anorexia and bulimia

(Klump, Kaye, & Strober, 2001; Strober, 2002; Wade, Bulik, Neale, & Kendler, 2000). Again, there is no clear agreement on just *what* is inherited (Fairburn, Cowen, et al., 1999). Hsu (1990) speculates that nonspecific personality traits such as emotional instability and, perhaps, poor impulse control might be inherited. In other words, a person might inherit a tendency to be emotionally responsive to stressful life events and, as one consequence, might eat impulsively in an attempt to relieve stress and anxiety (Kaye, 2008; Strober, 2002). Klump and colleagues (2001) mention perfectionist traits, along with negative affect. This biological vulnerability might then interact with social and psychological factors to produce an eating disorder. Wade and colleagues (2008) found support for this idea in a study of 1,002 same-sex twins in which anorexia was associated with, and maybe a reflection of, a trait of perfectionism and a need for order that runs in families.

Biological processes are quite active in the regulation of eating and thus of eating disorders, and substantial evidence points to the hypothalamus as playing an important role. Investigators have studied the hypothalamus and the major neurotransmitter systems—including norepinephrine, dopamine, and, particularly, serotonin—that pass through it to determine whether something is malfunctioning when eating disorders occur (Kaye, 2008; Vitiello & Lederhendler, 2000). Low levels of serotonergic activity are associated with impulsivity generally and binge eating specifically (see Chapter 2). Thus, most drugs under study as treatments for bulimia target the serotonin system (see, for example, de Zwaan, Roerig, & Mitchell, 2004; Kaye, 2008; Kaye et al., 1998; Walsh et al., 1997).

If investigators do find a strong association between neurobiological functions and eating disorders, the question of cause or effect remains. At present, the consensus is that some neurobiological abnormalities do exist in people with eating disorders but that they are a *result* of semistarvation or a binge–purge cycle rather than a cause, although they may well contribute to the *maintenance* of the disorder once it is established.

Psychological Dimensions

Clinical observations indicate that many young women with eating disorders have a diminished sense of personal control and confidence in their own abilities and talents (Bruch, 1973, 1985; Striegel-Moore, Silberstein, & Rodin, 1993; Walters & Kendler, 1995). This may manifest as strikingly low self-esteem (Fairburn, Cooper, & Shafran, 2003). They also display more perfectionistic attitudes, perhaps learned or inherited from their families, which may reflect attempts to exert control over important events in their lives (Fairburn, Cooper, et al., 1999; Fairburn, Welch, et al., 1997; Joiner et al., 1997). Shafran, Lee, Payne, and Fairburn (2006) artificially raised perfectionistic standards in otherwise normal women by instructing them to pursue the highest possible standards in everything they do for the

next 24 hours. These instructions caused them to eat fewer high-calorie foods, to restrict their eating, and to have more regret after eating than women told to just do the minimum for 24 hours. This occurred even though eating was not specifically mentioned as part of pursuing the “highest standards.”

Perfectionism alone, however, is only weakly associated with the development of an eating disorder because individuals must consider themselves overweight and manifest low self-esteem before the trait of perfectionism makes a contribution (Vohs, Bardone, Joiner, Abramson, & Heatherton, 1999). But when perfectionism is directed to distorted perception of body image, a powerful engine to drive eating disorder behavior is in place (Lilenfeld, Wonderlich, Riso, Crosby, & Mitchell, 2006; Shafran, Cooper, & Fairburn, 2002). Women with eating disorders are intensely preoccupied with how they appear to others (Fairburn, Stice, et al., 2003; Smith et al., 2007). They also perceive themselves as frauds, considering false any impressions they make of being adequate, self-sufficient, or worthwhile. In this sense, they feel like impostors in their social groups and experience heightened levels of social anxiety (Smolak & Levine, 1996). Striegel-Moore and colleagues (1993) suggest these social self-deficits are likely to increase as a consequence of the eating disorder, further isolating the woman from the social world.

Specific distortions in perception of body shape change often, depending on day-to-day experience. McKenzie, Williamson, and Cubic (1993) found that women with bulimia judged that their bodies were larger after they ate a candy bar and soft drink, whereas the judgments of women in control groups were unaffected by snacks. Thus, rather minor events related to eating may activate fear of gaining weight, further distortions in body image, and corrective schemes such as purging.

Rosen and Leitenberg (1985) observed substantial anxiety before and during snacks, which they theorized is *relieved* by purging. They suggested the state of relief strongly reinforces the purging, in that we tend to repeat behavior that gives us pleasure or relief from anxiety. This seemed to be true for Phoebe. However, other evidence suggests that in treating bulimia, reducing the anxiety associated with eating is less important than countering the tendency to overly restrict food intake and the associated negative attitudes about body image that lead to bingeing and purging (see, for example, Agras, Schneider, Arnow, Raeburn, & Telch, 1989; Fairburn, Agras, & Wilson, 1992; Fairburn, Cooper, Shafran, & Wilson, 2008).

Another important observation is that at least a subgroup of these patients has difficulty tolerating any negative emotion (mood intolerance) and may binge or engage in other behaviors, such as self-induced vomiting or intense exercise, in an attempt to regulate their mood (Paul, Schroeter, Dahme, & Nutzinger, 2002).

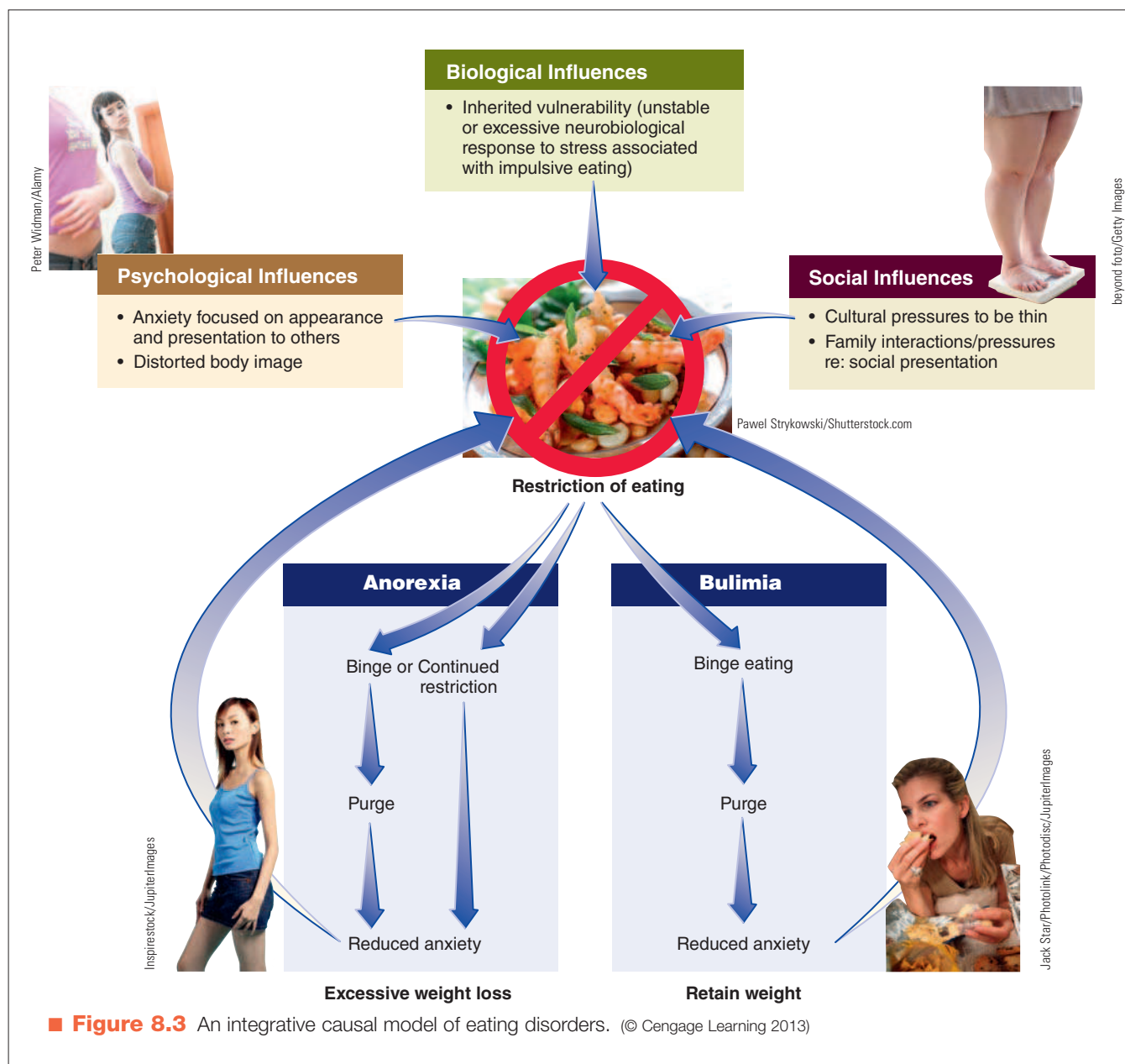
An Integrative Model

Although the three major eating disorders are identifiable by their unique characteristics, and the specific diagnoses have some validity, it is becoming increasingly clear that all eating disorders have much in common in terms of causal factors. It may be more useful to lump the eating disorders into one diagnostic category, simply noting which specific features occur, such as dietary restraint, bingeing, or purging.

In putting together what we know about eating disorders, it is important to remember, again, that no one factor seems sufficient to cause them (see ■ Figure 8.3). Individuals with eating disorders may have some of the same biological vulnerabilities (such as being highly responsive to stressful life events) as individuals with anxiety disorders (Kendler et al., 1995; Rojo, Conesa, Bermudez, & Livianos, 2006). Anxiety and mood disorders are also common in the families of individuals with eating disorders (Schwalberg et al., 1992), and negative emotions, along with “mood intolerance,” seem to trigger binge eating in many patients. In addition, as you will see, drug and psychological treatments with proven effectiveness for anxiety disorders are also the treatments of choice for eating disorders. Indeed, we could conceptualize eating disorders as anxiety disorders focused exclusively on a fear of becoming overweight.

In any case, it is clear that social and cultural pressures to be thin motivate significant restriction of eating, usually through severe dieting. Remember, however, that many people go on strict diets, including adolescent females, but only a small minority develop eating disorders, so dieting alone does not account for the disorders. It is also important to note that the social interactions in high-income, high-achieving families may well be a factor. An emphasis in these families on looks and achievement, and perfectionistic tendencies, may help establish strong attitudes about the overriding importance of physical appearance to popularity and success. These attitudes result in an exaggerated focus on body shape and weight.

Finally, there is the question of why a small minority of individuals with eating disorders can successfully control their intake through dietary restraint, resulting in alarming weight loss (anorexia), whereas the majority are unsuccessful at losing weight and compensate in a cycle of bingeing and purging (bulimia), although most individuals with anorexia do go on to bingeing and purging at some point (Eddy et al., 2002; Eddy et al., 2008). These differences, at least initially, may be determined by biology or physiology, such as a genetically determined disposition to be somewhat thinner initially. Then again, perhaps preexisting personality characteristics, such as a tendency to be overcontrolling, are important determinants of which disorder an individual develops.



■ **Figure 8.3** An integrative causal model of eating disorders. (© Cengage Learning 2013)

Treatment of Eating Disorders

› How does the use of medications compare with psychological therapies for the treatment of eating disorders?

Only since the 1980s have there been treatments for bulimia; treatments for anorexia have been around much longer but were not well developed. Rapidly accumulating evidence indicates that at least one, and possibly two, psychological treatments are effective, particularly for bulimia nervosa. Certain drugs may also help, although the evidence is not so strong.

Drug Treatments

At present, drug treatments have not been found to be effective in the treatment of anorexia nervosa (see, for example, Attia, Haiman, Walsh, & Flater, 1998; Crow, Mitchell, Roerig, & Steffen, 2009; de Zwaan et al., 2004; Vitiello & Lederhendler, 2000; Wilson & Fairburn, 2002).

For example, a recent definitive study reported that fluoxetine (Prozac) had no benefit in preventing relapse in patients with anorexia after weight has been restored (Walsh et al., 2006).

However, there is some evidence that drugs may be useful for some people with bulimia. The drugs generally considered the most effective for bulimia are the same antidepressant medications that proved effective for mood disorders and anxiety disorders (Broft, Berner, & Walsh, 2010; Shapiro et al., 2007; Wilson & Fairburn, 2002). The Food and Drug Administration (FDA) in 1996 approved Prozac as effective for eating disorders. Effectiveness is usually measured by reductions in the frequency of binge eating, and by the percentage of patients who stop binge eating and purging altogether, at least for a while. In two studies, one of several tricyclic antidepressant drugs and the other of Prozac, researchers found the average *reduction* in binge eating and purging was, respectively, 47% and 65% (Walsh, 1991; Walsh, Hadigan, Devlin, Gladis, & Roose, 1991). However, although antidepressants are more effective than placebo in the short term and they may enhance the effects of psychological treatment somewhat (Whittal, Agras, & Gould, 1999; Wilson et al., 1999), the available evidence suggests that antidepressant drugs alone do not have substantial long-lasting effects on bulimia nervosa (Walsh, 1995; Wilson & Fairburn, 2002).

Psychological Treatments

Short-term cognitive-behavioral treatments target problem eating behavior and associated attitudes about the overriding importance and significance of body weight and shape, and these strategies have become the treatment of choice for bulimia (Pike, Devlin, & Loeb, 2004; Sysko & Wilson, 2011; Wilson, Grilo, & Vitousek, 2007).

Bulimia Nervosa

In the cognitive-behavioral treatment approach pioneered by Fairburn (1985), the first stage is teaching the patient the physical consequences of binge eating and purging and the ineffectiveness of vomiting and laxative abuse for weight control. The adverse effects of dieting are also described, and patients are scheduled to eat small, manageable amounts of food 5 or 6 times per day with no more than a 3-hour interval between any planned meals and snacks, which eliminates the alternating periods of overeating and dietary restriction that are hallmarks of bulimia. In later stages of treatment, cognitive therapy focuses on altering dysfunctional thoughts and attitudes about body shape, weight, and eating. Coping strategies for resisting the impulse to binge and purge are also developed, including arranging activities so that the individual will not spend time alone after eating during the early stages of treatment (Fairburn, Marcus, & Wilson, 1993; Fairburn, Cooper, Shafran, & Wilson, 2008).

Evaluations of short-term (approximately 3 months) cognitive-behavioral treatments for bulimia have been good, showing superior efficacy to credible alternative

psychological treatments not only for bingeing and purging but also for distorted attitudes and accompanying depression. Furthermore, these results seem to last (Fairburn, Jones, Peveler, Hope, & O'Connor, 1993; Pike, Walsh, Vitousek, Wilson, & Bauer, 2003; Thompson-Brenner, Glass, & Westen, 2003; Whittal et al., 1999), although there are, of course, a number of patients who improve only modestly or do not benefit. One study is worth examining more closely.

Agras, Walsh, Fairburn, Wilson, and Kraemer (2000) randomly assigned 220 patients meeting diagnostic criteria for bulimia nervosa to 19 sessions of either cognitive-behavioral therapy (CBT) or interpersonal psychotherapy (IPT) focused on improving interpersonal functioning. The investigators found that, for those who completed treatment, CBT was significantly superior to IPT at the end of treatment, with 45% recovered in the CBT group versus 8% in the IPT group. The percentage who remitted (no longer met diagnostic criteria for an eating disorder but still had some problems) was 67% in the CBT group versus 40% in the IPT group. However, after 1 year, these differences again were no longer significant, as patients in the IPT group tended to “catch up” to patients in the CBT group. The results for both recovered and remitted patients indicate that approximately the same percentage of patients (40%) remained recovered in the CBT group but 27% of those receiving IPT had now recovered. The results are similar for the less stringent criteria of remission. In a subsequent analysis, Agras and colleagues (2000) were able to demonstrate that substantial improvement in the first six sessions was the best predictor of who would recover by the end of treatment.

Phoebe • Taking Control

During her sophomore year in college, Phoebe entered a short-term CBT program similar to the program discussed here. She made good progress during the first several months and worked carefully to eat regularly and gain control over her eating. She also made sure that she was with somebody during her high-risk times and planned alternative activities that would reduce her temptation to purge if she felt she had eaten too much at a restaurant or drunk too much beer at a party. During the first 2 months, Phoebe had three slips, and she and her therapist discussed what led to her temporary relapse. Much to Phoebe's surprise, she did not gain weight on this program, even though she did not have time to increase her exercise. Nevertheless, she still was preoccupied with food, was concerned about her weight and appearance, and had strong urges to vomit if she thought she had overeaten the slightest amount.

During the 9 months following treatment, Phoebe reported that her urges seemed to decrease somewhat, although she had one major slip after eating a

big pizza and drinking a lot of beer. She reported that she was thoroughly disgusted with herself for purging and was careful to return to her program after this episode. Two years after finishing treatment, Phoebe reported that her urges to vomit had disappeared, a report confirmed by her parents.

Short-term treatments for bulimia, although effective for many, may not provide a lasting solution. Indeed, some people do not benefit from short-term CBT. Evidence now suggests that combining drugs with psychosocial treatments might boost the overall outcome, at least in the short term (Whittal et al., 1999; Wilson et al., 1999). In the largest study to date (Walsh et al., 1997), CBT was significantly superior to supportive psychotherapy (in which the therapist is understanding and sympathetic and encourages patients to achieve their goals) in the treatment of bulimia nervosa; adding two antidepressant medications to CBT, including a serotonin-specific reuptake inhibitor (SSRI), modestly increased the benefit of CBT. But CBT remains the preferred treatment for bulimia and is superior to medication alone (Sysko & Wilson, 2011). There is also evidence that people who do not respond to CBT might benefit from interpersonal psychotherapy (Fairburn, Jones, et al., 1993; Klerman, Weissman, Rounsaville, & Chevron, 1984) or from antidepressant medication (Walsh et al., 2000).

Binge-Eating Disorder

Smith, Marcus, and Kaye (1992) adapted CBT for bulimia to obese binge eaters and demonstrated that the frequency of binge eating was reduced by an average of 81%, with 50% of the participants abstinent from bingeing by the end of treatment. Agras, Telch, Arnow, Eldredge, and Marnell (1997) followed 93 obese individuals with BED for 1 year and found that immediately after treatment with CBT, 41% of the participants abstained from bingeing and 72% binged less frequently. After 1 year, binge eating was reduced by 64%, and 33% of the group refrained from bingeing altogether. Importantly, those who had stopped binge eating during CBT maintained a weight loss of approximately 9 pounds over this 1-year follow-up period; those who continued to binge gained approximately 8 pounds. Thus, stopping binge eating is critical to sustaining weight loss in obese patients, a finding consistent with other studies of weight-loss procedures (Marcus, Wing, & Hopkins, 1988; Marcus et al., 1990; Telch, Agras, & Rossiter, 1988).

In contrast to results with bulimia, it appears that IPT is every bit as effective as CBT for binge eating. Wilfley and colleagues (2002) treated 162 overweight or obese men and women with BED with either CBT or IPT and found comparable results from each treatment. Fully 60% refrained from bingeing at a 1-year follow-up. In an important comparative study of treatments for binge eating, Grilo, Masheb, and Wilson (2004) compared Prozac, placebo,

CBT and Prozac, and CBT and placebo. Prozac showed no effect on BED compared to placebo, and both CBT treatments (with Prozac or placebo) were superior with no difference between them. Fully 73% of the CBT and placebo patients completing treatment did not binge for a month, which was the definition of remission. Thus, Prozac did not add anything to CBT, at least right after treatment terminated. If individuals began to respond rapidly to CBT treatment (by the 4th week), the response was particularly good, both short term and long term (Grilo, Masheb, & Wilson, 2006). Fortunately, it appears that self-help procedures may be useful in the treatment of BED. In one of the best studies of this approach, Carter and Fairburn (1998) randomly assigned 72 females with BED to either a pure self-help group, in which participants were simply mailed their manual; guided self-help, in which therapists would meet with the patients periodically as they read the manual; or a wait-list control group. Fifty percent of the guided self-help group and 43% of the pure self-help group eliminated binge eating versus 8% of the wait-list control group. These improvements were maintained at a 6-month follow-up.

More recently, CBT delivered as guided self-help was demonstrated to be more effective than a standard behavioral weight-loss program for BED both after treatment and at a 2-year follow-up (Wilson, Wilfley, Agras, & Bryson, 2010), and this same program is effective when delivered out of a doctor's office in a primary care setting (Striegel-Moore et al., 2010). In view of these results, it would seem a self-help approach should probably be the first treatment offered before engaging in more expensive and time-consuming therapist-led treatments. Much as with bulimia, however, more severe cases may need the more intensive treatment delivered by a therapist, particularly cases with multiple (comorbid) disorders in addition to BED, as well as and low self-esteem (Wilson et al., 2010). It is also important to emphasize again that if an obese person is bingeing, standard weight-loss procedures will be ineffective without treatment directed at bingeing.

Anorexia Nervosa

In anorexia, the most important initial goal is to restore the patient's weight to a point that is at least within the low-normal range (American Psychiatric Association, 2010). If body weight is below 85% of the average healthy body weight for a given individual or if weight has been lost rapidly and the individual continues to refuse food, inpatient treatment is recommended (American Psychiatric Association, 2010; Casper, 1982) because severe medical complications, particularly acute cardiac failure, could occur if weight is not restored immediately. If the weight loss has been more gradual and seems to have stabilized, weight restoration can be accomplished on an outpatient basis.

Restoring weight is probably the easiest part of treatment. Clinicians who treat patients in different settings, as reported in a variety of studies, find that at least 85% will be able to gain weight. The gain is often as much as a half-

pound to a pound a day until weight is within the normal range. Knowing they can leave the hospital when their weight gain is adequate is often sufficient to motivate individuals with anorexia (Agras, Barlow, Chapin, Abel, & Leitenberg, 1974). Julie gained about 18 pounds during her 5-week hospital stay.

Then the difficult stage begins. As Hsu (1988) and others have demonstrated, initial weight gain is a poor predictor of long-term outcome in anorexia. Without attention to the patient's underlying dysfunctional attitudes about body shape and interpersonal disruptions in her life, she will almost always relapse. For restricting anorexics, the focus of treatment must shift to their marked anxiety over becoming obese and losing control of eating and to their undue emphasis on thinness as a determinant of self-worth, happiness, and success. In this regard, effective treatments for restricting anorexics are similar to those for patients with bulimia nervosa (Fairburn, Cooper, Shafran, & Wilson, 2008; Pike, Loeb, & Vitousek, 1996; Vitousek, Watson, & Wilson, 1998). In one well done study (Pike, Walsh, Vitousek, Wilson, & Bauer, 2003), extended (1-year) outpatient CBT was found to be significantly better than continued nutritional counseling in preventing relapse after weight restoration, with only 22% failing (relapsing or dropping out) with CBT versus 73% failing with nutritional counseling. More recently, Carter et al. (2009) reported similar findings and both studies demonstrate the ineffectiveness of nutritional counseling alone.

In addition, every effort is made to include the family to accomplish two goals. First, the negative and dysfunctional communication in the family regarding food and eating must be eliminated and meals must be made more structured and reinforcing. Second, attitudes toward body shape and image distortion are discussed at some length in family sessions. Unless the therapist attends to these attitudes, individuals with anorexia are likely to face a lifetime preoccupation with weight and body shape, struggle to maintain marginal weight and social adjustment, and be subject to repeated hospitalization. Family therapy directed at the goals mentioned here seems effective, particularly with young girls (younger than 19 years of age) with a short history of the disorder (Eisler et al., 1997; Eisler et al., 2000; Lock, le Grange, Agras, & Dare, 2001). Nevertheless, the long-term results of treatment for anorexia are more discouraging than for bulimia, with substantially lower rates of full recovery than for bulimia over a 7.5-year period (Eddy et al., 2008; Herzog et al., 1999). A recent proposal to focus treatment more directly on the extreme anxiety over gaining weight using therapeutic principles successful in anxiety disorders is promising (Steinglass et al., 2010).

Preventing Eating Disorders

Attempts are being made to prevent the development of eating disorders (Stice, Shaw, & Marti, 2007). If successful methods are confirmed, they will be important because many cases of eating disorders are resistant to treatment

and most individuals who do not receive treatment suffer for years, in some cases all of their lives (Eddy et al., 2008; Herzog et al., 1999; Keel, Mitchell, Miller, Davis, & Crow, 1999). The development of eating disorders during adolescence is a risk factor for a variety of additional disorders during adulthood, including cardiovascular symptoms, chronic fatigue and infectious diseases, and anxiety and mood disorders (Johnson, Cohen, Kasen, & Brook, 2002). Before implementing a prevention program, however, it is necessary to target specific behaviors to change. Killen and colleagues (1994) conducted a prospective analysis on a sample of 887 young adolescent girls. Over a 3-year interval, 32 girls, or 3.6% of the sample, developed symptoms of eating disorders.

Early concern about being overweight was the most powerful predictive factor of later symptoms. The instrument used to measure weight concerns is presented in Table 8.2. Girls who scored high on this scale (an average score of 58) were at substantial risk for developing serious symptoms compared to girls who scored lower (an average score of 33). Killen and colleagues (1996) then evaluated a prevention program on 967 sixth- and seventh-grade girls from 11 to 13 years of age. This is the universal approach described in Chapter 7, where the program is applied to everyone. Half the girls were put on the intervention program, and the other half were not. The program emphasized that female weight gain after puberty is normal and that excessive caloric restriction could cause increased gain. The interesting results were that the intervention had relatively little effect on the treatment group compared to the control group. But for those girls at high risk for developing eating disorders (as reflected by a high score on the scale in Table 8.2), the program significantly reduced weight concerns (Killen, 1996; Killen et al., 1994). The authors conclude from this preliminary study that the most cost-effective preventive approach would be to carefully screen girls who are at high risk for developing eating disorders and to apply the program selectively to them (Killen, 1996). Could these preventive programs be delivered over the Internet? It seems they can! Winzelberg and colleagues (2000) studied a group of university women who did not have eating disorders at the time of the study but were concerned about their body image and the possibility of being overweight. College women in general are a high-risk group, and sorority women in particular are at higher risk than nonsorority women (Becker, Smith, & Ciao, 2005). The investigators developed the "student bodies program" (Winzelberg et al., 1998), a structured, interactive health education program designed to improve body image satisfaction and delivered through the Internet. The interactive software featured text, audio, and video components and online self-monitoring journals and behavior change assignments. The program continued for 8 weeks with various assignments administered each week. In addition, participants were expected to post a message to a discussion group related to the themes under consideration that week. If participants missed their assignments, they were contacted by e-mail and encouraged to get back

Table 8.2 Weight Concerns*

1. How much *more* or *less* do you feel you worry about your weight and body shape than other girls your age?
 - a. I worry a lot less than other girls (4)
 - b. I worry a little less than other girls (8)
 - c. I worry about the same as other girls (12)
 - d. I worry a little more than other girls (16)
 - e. I worry a lot more than other girls (20)
2. How afraid are you of gaining 3 pounds?
 - a. Not afraid of gaining (4)
 - b. Slightly afraid of gaining (8)
 - c. Moderately afraid of gaining (12)
 - d. Very afraid of gaining (16)
 - e. Terrified of gaining (20)
3. When was the last time you went on a diet?
 - a. I've never been on a diet (3)
 - b. I was on a diet about 1 year ago (6)
 - c. I was on a diet about 6 months ago (9)
 - d. I was on a diet about 3 months ago (12)
 - e. I was on a diet about 1 month ago (15)
 - f. I was on a diet less than 1 month ago (18)
 - g. I'm now on a diet (21)
4. How important is your weight to you?
 - a. My weight is not important compared to other things in my life (5)
 - b. My weight is a little more important than some other things (10)
 - c. My weight is more important than most, but not all, things in my life (15)
 - d. My weight is the most important thing in my life (20)
5. Do you ever feel fat?
 - a. Never (4)
 - b. Rarely (8)
 - c. Sometimes (12)
 - d. Often (16)
 - e. Always (20)

*Value assigned to each answer is in parentheses. Thus, if you chose an answer worth 12 in questions 1, 2, 3, and 5 and an answer worth 10 in question 4, your score would be 58. (Remember that the prediction from this scale worked for girls age 11–13 but hasn't been evaluated in college students.)
Source: Killen, J. D. (1996). Development and evaluation of a school-based eating disorder symptoms prevention program. In L. Smolak, M. P. Levine, & R. Striegel-Moore (Eds.), *The developmental psychopathology of eating disorders: Implications for research, prevention, and treatment* (pp. 313–339). Mahwah, NJ: Erlbaum.

on track. The results indicated this program was markedly successful because participants, compared to controls, reported a significant improvement in body image and a decrease in drive for thinness. Subsequently, these investigators developed innovations to improve compliance with this program to levels of 85% (Celio, Winzelberg, Dev, & Taylor, 2002).

Concept Check 8.2

Mark the following statements about the causes and treatment of eating disorders as either true (T) or false (F).

1. ___ Many young women with eating disorders have a diminished sense of personal control and confidence in their own abilities and talents, are perfectionists, and/or are intensely preoccupied with how they appear to others.
2. ___ Biological limitations, and the societal pressure to use diet and exercise to achieve nearly impossible weight goals, contribute to the high numbers of people with anorexia nervosa and bulimia nervosa.
3. ___ One study showed that males consider a smaller female body size to be more attractive than women do.
4. ___ Antidepressants help individuals overcome anorexia nervosa but have no effect on bulimia nervosa.
5. ___ Cognitive-behavioral treatment (CBT) and interpersonal psychotherapy (IPT) are both successful treatments for bulimia nervosa, although CBT is the preferred method.
6. ___ Attention must be focused on dysfunctional attitudes about body shape in anorexia or relapse will most likely occur after treatment.

Obesity

- › What are some possible causes of obesity?
- › What treatments are available?

As noted at the beginning of the chapter, obesity is not formally considered an eating disorder in the *DSM*. But, in the year 2000, the number of adults with excess weight worldwide surpassed the number of those who were underweight (Caballero, 2007). Indeed, the prevalence of obesity is so high that one might consider it statistically “normal” if it weren’t for the serious implications for health and social and psychological functioning.

Statistics

The prevalence of obesity (BMI 30 or greater) among adults in the United States in 2000 was 30.5% of the population, increasing to 30.6% in 2002, 32.2% in 2004, and 33.8% in 2008 (Flegal, Carroll, Ogden, & Curtin, 2010; Ogden et al., 2006). What is particularly disturbing is that this prevalence of obesity represents close to a tripling

from 12% of adults in 1991. Medical costs for obesity and overweight are estimated at \$147 billion or 9.1% of U.S. health-care expenditures (Brownell et al., 2009). This condition accounted for more than 164,000 deaths in the United States in 2000 (Flegal et al., 2005). The direct relationship between obesity and mortality (dying prematurely) is shown in ■ Figure 8.4. At a BMI of 30, risk of mortality increases by 30%, and at a BMI of 40 or more, risk of mortality is 100% or more (Manson et al., 1995; Wadden, Brownell, & Foster, 2002). Because 5.7% of the adult population has a BMI over 40 (Flegal et al., 2010), a substantial number of people, perhaps 10 million or more in the United States alone, are in serious danger.

For children and adolescents, the numbers are even worse, with the number of overweight youngsters tripling in the past 25 years (Critser, 2003). In the past decade, the obesity rates for children ages 2–19 (defined as above the 95th percentile for sex-specific BMI for that age) have increased from 13.9% in 2000 to 17.1% in 2004 (Ogden et al., 2006), but now may be leveling off with a 16.9% rate in 2008 (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). If one looks at children and adolescents either overweight (above the 85th percentile in BMI) or obese, the rate is 31.7%. The stigma of obesity has a major impact on quality of life

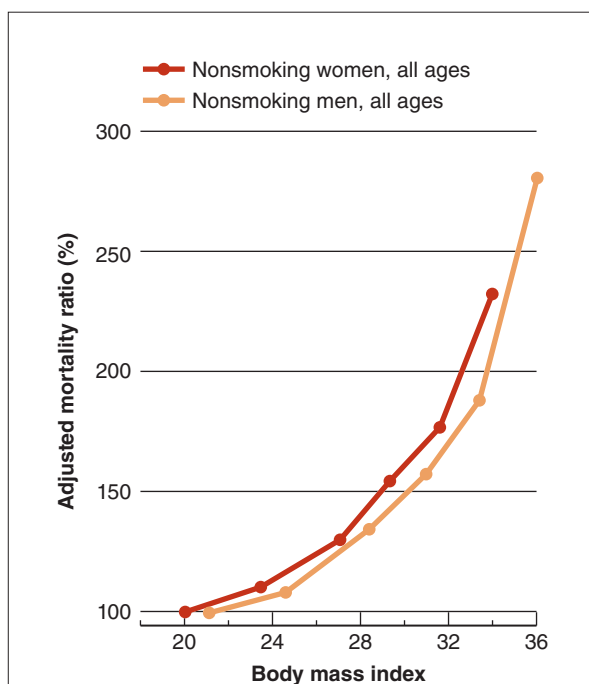
(Neumark-Sztainer & Haines, 2004). For example, most overweight individuals are subjected to prejudice and discrimination in college, at work, and in housing (Henderson and Brownell, 2004). Obesity is not limited to North America. Rates of obesity in eastern and southern European nations are as high as 50% (Berghöfer et al., 2008; Bjorntorp, 1997), and the rate is greatly increasing in developing nations. In Japan, obesity in men has doubled since 1992 and has nearly doubled in young women. Although less extreme, increases in obesity are also occurring in China (Henderson & Brownell, 2004; World Health Organization, 1998), where the proportion of Chinese who are overweight increased from 6% to 8% in a 7-year period (Holden, 2005). Obesity is also the main driver of type 2 diabetes, which has reached epidemic status. Ethnicity also is a factor in rates of obesity. In the United States, 50% of African American women and 43% of Hispanic American women are obese compared to 33% of Caucasian women (Flegal et al., 2010). Rates among minority adolescents are even more concerning. First Lady Michelle Obama has made lowering rates of childhood obesity her top priority.

Disordered Eating Patterns in Cases of Obesity

There are two forms of maladaptive eating patterns in people who are obese. The first is binge eating, and the second is **night eating syndrome** (Striegel-Moore, Franko, & Garcia, 2009). We discussed BED earlier in the chapter, but it is important to note that only a minority of patients with obesity, between 7% and 19%, present with patterns of binge eating. When they do, treatment for binge eating reviewed earlier should be integrated into weight-loss programs.

More interesting is the pattern of night eating syndrome that occurs in between 6% and 16% of obese individuals seeking weight-loss treatment but in as many as 42% of those with extreme obesity seeking bariatric surgery (discussed later) (Lamberg, 2003; Sarwer, Foster, & Wadden, 2004; Stunkard, Allison, & Lundgren, 2008). Individuals with night eating syndrome consume a third or more of their daily intake after their evening meal and get out of bed at least once during the night to have a high-calorie snack. In the morning, however, they are not hungry and do not usually eat breakfast. These individuals do not binge during their night eating and seldom purge. Occasionally, nonobese individuals will engage in night eating, but the behavior is overwhelmingly associated with being overweight or obese (Lundgren et al., 2006; Striegel-Moore et al., 2010).

Notice that this condition is not the same as the nocturnal eating syndrome described later in the chapter in the



■ **Figure 8.4** Mortality rates in relation to the body mass index (BMI) of nonsmoking men and women (of all ages) who participated in the American Cancer Society study. (Reprinted, with permission, from Vanitallie, T. B., & Lew, E. A., 1992. Assessment of morbidity and mortality risk in the overweight patient. In T. A. Wadden and T. B. Vanitallie, Eds., *Treatment of the seriously obese patient* (p. 28). New York: Guilford Press, © 1992 Guilford Press.)

night eating syndrome Consuming a third or more of daily food intake after the evening meal and getting out of bed at least once during the night to have a high-calorie snack. In the morning, individuals with night eating syndrome are not hungry and do not usually eat breakfast. These individuals do not binge during their night eating and seldom purge.

section about sleep disorders. In that condition, individuals get up during the night and raid the refrigerator but never wake up. They also may eat uncooked or other dangerous foods while asleep. On the contrary, in night eating syndrome, the individuals are awake as they go about their nightly eating patterns. Night eating syndrome is an important target for treatment in any obesity program to regulate patterns of eating so that individuals eat more during the day, when their energy expenditure is highest.

Causes

Henderson and Brownell (2004) make a point that this obesity epidemic is clearly related to the spread of modernization. In other words, as we advance technologically, we are getting fatter. The promotion of an inactive, sedentary lifestyle and the consumption of a high-fat, energy-dense diet is the largest single contributor to the obesity epidemic (Caballero, 2007; Levine et al., 2005). Kelly Brownell (2002, 2003; Brownell et al., 2010) notes that in our modern society, individuals are continually exposed to heavily advertised, inexpensive fatty foods that have low nutritional value. When consumption of these is combined with an increasingly inactive lifestyle, it is not surprising that the prevalence of obesity is increasing. Brownell has referred to this as the “toxic environment” (Schwartz & Brownell, 2007). He notes that the best example of this phenomenon comes from a study of the Pima Indians from Mexico. A portion of this tribe of Indians migrated to Arizona relatively recently. Examining the result of this migration, Ravussin, Valencia, Esparza, Bennett, and Schulz (1994) determined that Arizona Pima women consumed 41% of their total calories in fat on the average and weighed 44 pounds on average more than Pima women who stayed in Mexico, who consumed 23% of their calories from fat. Because this relatively small tribe retains a strong genetic similarity, it is likely that the “toxic environment” in the more modern United States has contributed to the obesity epidemic among the Arizona Pima women.

Not everyone exposed to the modernized environment such as that in the United States becomes obese, and this is where genetics, physiology, and personality come in. On average, genetic contributions may constitute a smaller portion of the cause of obesity than cultural factors, but it helps explain why some people become obese and some don't when exposed to the same environment. For example, genes influence the number of fat cells an individual has, the likelihood of fat storage, and, most likely, activity levels (Cope, Fernandez, & Allison, 2004; Hetherington & Cecil, 2010). Generally, genes are thought to account for about 30% of the equation in causation of obesity (Bouchard, 2002), but this is misleading because it takes a “toxic” environment to turn on these genes. Physiological processes, particularly hormonal regulation of appetite, play a large role in the initiation and maintenance of eating and vary considerably from individual to individual (Friedman, 2009; Smith & Gibbs, 2002). Psychological processes of emotional regulation (for example, eating to try

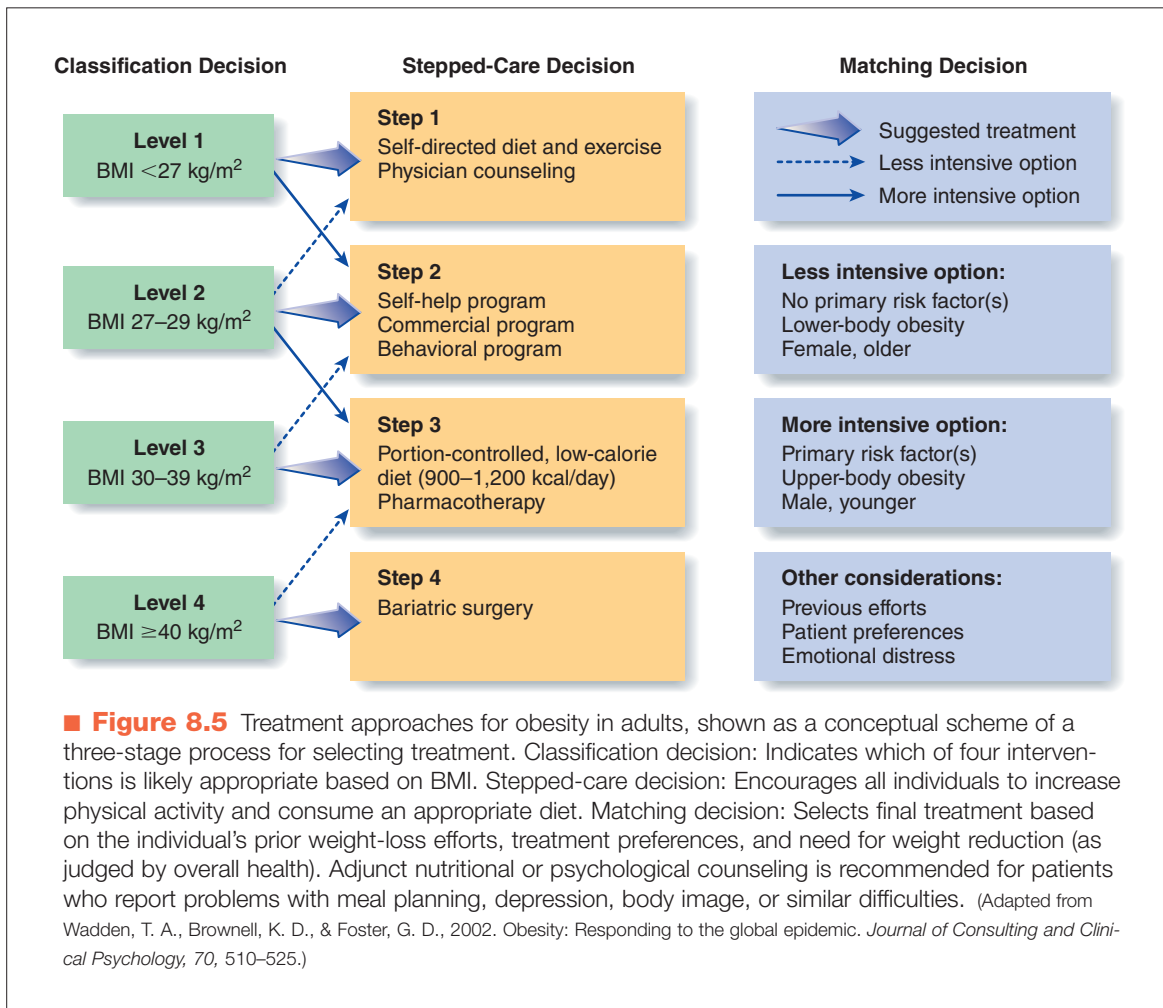
to cheer yourself up when you're feeling down), impulse control, attitudes and motivation toward eating, and responsiveness to the consequences of eating are also important (Blundell, 2002; Stice, Presnell, Shaw, & Rohde, 2005).

Many of these attitudes and eating habits are strongly influenced by family and close friends. In an important study, Christakis and Fowler (2007) studied the social networks (close friends and neighbors) of more than 12,000 people for more than 30 years. They found that a person's chance of becoming obese increased from 37% to 57% if a spouse, sibling, or even a close friend was obese, but it did not if a neighbor or coworker with whom the person did not socialize was obese. Thus, it seems that obesity spreads through social networks. Although the etiology of obesity is extraordinarily complex, as with most disorders, an interaction of biological and psychological factors with a notably strong environmental and cultural contribution provides the most complete account.

Treatment

The treatment of obesity is only moderately successful at the individual level (Svetkey et al., 2008), with somewhat greater long-term evidence for effectiveness in children and adolescents compared to adults (Sarwer et al., 2004). Treatment is usually organized in a series of steps from least intrusive to most intrusive depending on the extent of obesity. One plan is presented in ■ Figure 8.5. As you can see, the first step is usually a self-directed weight-loss program in individuals who buy a popular diet book. The most usual result is that some individuals may lose some weight in the short term but almost always regain that weight. Furthermore, these books do little to change lifelong eating and exercise habits (Freedman, King, & Kennedy, 2001) and few individuals successfully achieve long-term results on these diets, one of the reasons the latest one is always on the best-seller list. Similarly there is little evidence that physician counseling results in any changes. Nevertheless, physicians can play an important role by providing specific treatment recommendations, including referral to professionals (Sarwer et al., 2004).

The next step is commercial self-help programs such as Weight Watchers, Jenny Craig, and similar programs. Weight Watchers reports that more than 1.4 million people attend more than 50,000 meetings weekly around the world (Weight Watchers International, 2010). These programs stand a better chance of achieving some success, at least compared to self-directed programs (Heshka et al., 2003). Among members who successfully lost weight initially and kept their weight off for at least 6 weeks after completing the program, between 19% and 37% weighed within 5 pounds of their goal weight at least 5 years after treatment (Lowe, Miller-Kovach, Frie, & Phelan, 1999; Sarwer et al., 2004). This means that up to 80% of individuals, even if they are initially successful, are not successful in the long run. The most successful programs are professionally directed behavior modification programs, particularly if patients attend group maintenance sessions periodically in the year following initial weight reduction



(Perri et al., 2001). In a major study, Svetkey et al. (2008) randomly assigned 1,032 overweight or obese adults who had lost at least 10 pounds (4 kilograms) during a 6-month behavior modification program to one of three weight-loss maintenance conditions for 30 months: (1) once-a-month contact with a counselor to help them maintain their program, (2) a website they could log on to when they wanted to maintain their program (interactive technology group), and (3) a control comparison where they were on their own. Overall, 71% remained below their entry weights, which was a very good result, but the group with once-a-month contact gained back less weight than the interactive technology and the control comparison groups. Nevertheless, even these programs do not produce impressive results. For those individuals who have become more dangerously obese, very-low-calorie diets and possibly drugs, combined with behavior modification programs, are recommended. Patients lose as much as 20% of their weight on very-low-calorie diets, which typically consist of 4–6 liquid meal replacement products, or “shakes,” a day. At the end of 3 or 4 months, they are then placed on a low-calorie balanced diet. As with all weight-loss programs, patients typically regain up to 50% of their lost weight in the year following treatment (Wadden & Osei, 2002). But

more than half of them are able to maintain a weight loss of at least 5%, which is important in these very obese people (Sarwer et al., 2004). Similarly, drug treatments that reduce internal cues signaling hunger may be effective, particularly if combined with a behavioral approach targeting lifestyle change. Currently the FDA has approved two drugs for this purpose, sibutramine (Meridia) and orlistat (Xenical). For patients who remain on medication for more than 1 year, weight loss of 7% to 8% has been observed on average, but just recently warnings have been issued that adverse cardiovascular functioning can be a major side effect of sibutramine (Kuehn, 2010). Thus, there is promise for these combination treatments in maintaining some weight loss (Wadden et al., 2005). However, medications produce a number of side effects and are not well tolerated by some.

Finally, the surgical approach to extreme obesity—called **bariatric surgery**—is an increasingly popular ap-

bariatric surgery The surgical approach to extreme obesity, usually accomplished by stapling the stomach to create a small stomach pouch or bypassing the stomach through gastric bypass surgery.

proach for individuals with a BMI of at least 40 (Omalu et al., 2007; Wolfe & Morton, 2005). As noted earlier, 5.7% of the population in the United States now falls into this BMI of 40 or above category (Flegal et al., 2010). Up to 220,000 individuals received bariatric surgery in 2009 (American Society for Metabolic & Bariatric Surgery, 2009). Because the surgery is permanent, it is reserved only for the most severely obese individuals for whom the obesity is an imminent health risk. Typically, patients must have one or more obesity-related physical conditions, such as heart disease or diabetes. In the most common surgery, the stomach is stapled to create a small stomach pouch at the base of the esophagus, which severely limits food intake. Alternatively, a gastric bypass operation creates a bypass of the stomach, as the name implies, which limits not only food intake but also absorption of calories.

Approximately 15% of patients who have bariatric surgery fail to lose significant weight or regain lost weight after surgery (Latfi, Kellum, DeMaria, & Sugarman, 2002). A small percentage of individuals, from 0.1% to 0.5%, do not survive the operation, and an additional 15% to 20% experience severe complications requiring rehospitalization and additional surgery within the first year after surgery and in each of the next 2 years after that (O'Brien et al., 2010; Zingmond, McGory, & Ko, 2005). Therefore, surgeons typically require patients to exhaust all other treatment options and to undergo a thorough psychological assessment to ascertain whether they can adapt to the radically changed eating patterns required postsurgery (Kral, 2002; Livingston, 2010; Sarwer et al., 2004).

New psychological programs have been designed specifically to prepare patients for this surgery and help them adapt following surgery (Apple, Lock, & Peebles, 2006). In contrast to adults, the treatment of obesity in children and adolescents has achieved better outcome both short term and long term (Cooperberg & Faith, 2004; Epstein, Myers, Raynor, & Saelens, 1998). A number of studies report that behavior modification programs, particularly those that include parents, may produce a 20% reduction in overweight, a change maintained for at least several years after the end of the study. Again, these behavior modification programs include a number of strategies to change dietary habits, particularly decreasing high-calorie, high-fat snacks. These programs also target reduction of sedentary habits in children and adolescents, such as viewing television, playing video games, and sitting in front of a computer. These programs may be more successful than with

adults because parents are typically fully engaged in the program and provide constant and continuing support. Also, dietary habits in children are less engrained than adults. In addition, children are generally more physically active if provided with appropriate activities (Cooperberg & Faith, 2004). For more seriously obese adolescents (BMI from 32 to 44), one important study confirmed that combining medication with a comprehensive behavioral program was more effective than the behavioral program alone (Berkowitz, Wadden, Tershakovec, & Cronquist, 2003). And for the most severely obese adolescents with a BMI greater than 35, a less intrusive and safer bariatric surgical procedure than the one typically done on adults is now being evaluated (O'Brien et al., 2010).

Society is increasingly turning its attention to ways in which we might prevent continuation of the obesity epidemic. The greatest benefits may come from strategies that focus on prevention by altering factors in the “toxic environment” that strongly encourage the intake of unhealthy foods and a sedentary lifestyle (Brownell, 2002).

Most of us recognize that eating is essential to our survival. Equally important is sleep, a still relatively mysterious process crucial to everyday functioning and strongly implicated in many psychological disorders. We turn our attention to this additional survival activity in an effort to understand better how and why we can be harmed by sleep disturbances.

Concept Check 8.3

Mark the following statements about obesity as either true (T) or false (F).

1. ___ Obesity is the single most expensive health problem in the United States, surpassing both smoking and alcohol abuse.
2. ___ Individuals with night eating syndrome consume at least half their daily intake after their evening meal.
3. ___ Fatty foods and technology are not to blame for the obesity epidemic in the United States.
4. ___ Professionally directed behavior modification programs represent the most successful treatment for obesity.



Sleep Disorders: The Major Dyssomnias

- › What are the critical diagnostic features of the major sleep disorders?
- › What medical and psychological treatments are used for the treatment of sleep disorders?
- › How are rapid eye movement and nonrapid eye movement sleep related to the parasomnias?

We spend about one third of our lives asleep. That means most of us sleep nearly 3,000 hours per *year*. For many of us, sleep is energizing, both mentally and physically. Unfortunately, most people do not get enough sleep, and 20% of Americans report getting less than 6 hours of sleep per night, up from 12% who reported this lack of sleep in 1998 (National Sleep Foundation, 2009). Most of us know what it's like to have a bad night's sleep. The next day we're a little groggy, and as the day wears on we may become irritable. Research tells us that even minor sleep deprivation over only a few days impedes our ability to think clearly (Buysse, Strollo, Black, Zee, & Winkelman, 2008). Lack of sleep also affects you physically. People who do not get enough sleep are more susceptible to illnesses such as the common cold (Cohen, Doyle, Alper, Janicki-Deverts, & Turner, 2009), perhaps because immune system functioning is reduced with the loss of even a few hours of sleep (Imeri & Opp, 2009).

Here you might ask yourself how sleep disorders fit into a textbook on abnormal psychology. Different variations of disturbed sleep clearly have physiological bases and therefore could be considered purely medical concerns. However, like other physical disorders, sleep problems interact in important ways with psychological factors.

An Overview of Sleep Disorders

The study of sleep has long influenced concepts of abnormal psychology. Moral treatment, used in the 19th century for people with severe mental illness, included encouraging patients to get adequate amounts of sleep as part of therapy (Charland, 2008). Researchers who prevented people from sleeping for prolonged periods found that chronic sleep deprivation often had profound effects. A number of the disorders covered in this book are often associated with sleep complaints, including schizophrenia, major depression, bipolar disorder, and anxiety-related disorders. You may think at first that a sleep problem is the result of a psychological disorder. For example, how often have you been anxious about a future event (an upcoming exam, perhaps) and not been able to fall asleep? However, the relationship between sleep disturbances and mental health is more complex. Sleep problems may cause the difficulties people experience in everyday life (Buysse et al., 2008), or they may result from some disturbance common to a psychological disorder.

In Chapter 4 we explained how a brain circuit in the limbic system may be involved with anxiety. We know that this region of the brain is also involved with our dream

sleep, which is called **rapid eye movement (REM) sleep** (Steiger, 2008). This mutual neurobiological connection suggests that anxiety and sleep may be interrelated in important ways, although the exact nature of the relationship is still unknown. Similarly, REM sleep seems related to depression, as noted in Chapter 7 (Joska & Stein, 2008). Sleep abnormalities are preceding signs of serious clinical depression, which may suggest that sleep problems can help predict who is at risk for later mood disorders (Terman & Terman, 2006). In an intriguing study, researchers found that CBT improved symptoms among a group of depressed men and normalized REM sleep patterns (Nofzinger et al., 1994). Furthermore, sleep deprivation has temporary antidepressant effects on some people (Benedetti et al., 2003), although in people who are not already depressed sleep deprivation may bring on a depressed mood (Perlis et al., 2006). We do not fully understand how psychological disorders are related to sleep, yet accumulating research points to the importance of understanding sleep if we are to complete the broader picture of abnormal behavior.

Sleep disorders are divided into two major categories: **dyssomnias** and **parasomnias** (Table 8.3). Dyssomnias involve difficulties in getting enough sleep, problems with sleeping when you want to (not being able to fall asleep until 2 A.M. when you have a 9 A.M. class), and complaints about the quality of sleep, such as not feeling refreshed even though you have slept the whole night. Parasomnias are characterized by abnormal behavioral or physiological events that occur during sleep, such as nightmares and sleepwalking.

The clearest and most comprehensive picture of your sleep habits can be determined only by a **polysomnographic (PSG) evaluation** (Savard, Savard, & Morin, 2010). The patient spends one or more nights sleeping in a sleep laboratory being monitored on a number of measures, including respiration and oxygen desaturation

rapid eye movement (REM) sleep The periodic intervals of sleep during which the eyes move rapidly from side to side, and dreams occur, but the body is inactive.

dyssomnias A problem in getting to sleep or in obtaining sleep of sufficient quality.

parasomnias An abnormal behavior such as a nightmare or sleepwalking that occurs during sleep.

polysomnographic (PSG) evaluation An assessment of sleep disorders in which a client sleeping in the lab is monitored for heart, muscle, respiration, brain wave, and other functions.

Table 8.3 Summary of *DSM* Sleep Disorders

Sleep Disorder	Description
Dyssomnias	(Disturbances in the amount, timing, or quality of sleep)
Primary insomnia	Difficulty initiating or maintaining sleep or sleep that is not restorative (person not feeling rested even after normal amounts of sleep)
Primary hypersomnia	Complaint of excessive sleepiness that is displayed as either prolonged sleep episodes or day-time sleep episodes
Narcolepsy	Irresistible attacks of refreshing sleep occurring daily, accompanied by episodes of brief loss of muscle tone (cataplexy)
Breathing-related sleep disorder	Sleep disruption leading to excessive sleepiness or insomnia that is caused by sleep-related breathing difficulties
Circadian rhythm sleep disorder (sleep–wake schedule disorder)	Persistent or recurrent sleep disruption leading to excessive sleepiness or insomnia that is due to a mismatch between the sleep–wake schedule required by a person’s environment and his or her circadian sleep–wake pattern
Parasomnias	(Disturbances in arousal and sleep stage transition that intrude into the sleep process)
Nightmare disorder (dream anxiety disorder)	Repeated awakenings with detailed recall of extended and extremely frightening dreams, usually involving threats to survival, security, or self-esteem; the awakenings generally occur during the second half of the sleep period
Sleep terror disorder	Recurrent episodes of abrupt awakening from sleep, usually occurring during the first third of the major sleep episode and beginning with a panicky scream
Sleepwalking disorder	Repeated episodes of arising from bed during sleep and walking about, usually occurring during the first third of the major sleep episode

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(a measure of airflow); leg movements; brain wave activity, measured by an *electroencephalogram*; eye movements, measured by an *electrooculogram*; muscle movements, measured by an *electromyogram*; and heart activity, measured

by an *electrocardiogram*. Daytime behavior and typical sleep patterns are also noted—for example, whether the person uses drugs or alcohol, is anxious about work or interpersonal problems, takes afternoon naps, or has a psychological disorder.

Collecting all these data can be both time consuming and costly, but it is important to ensure an accurate diagnosis and treatment plan. One alternative to the comprehensive assessment of sleep is to use a wristwatch-size device called an **actigraph**. This instrument records the number of arm movements, and the data can be downloaded into a computer to determine the length and quality of sleep. Several studies have now tested the usefulness of this type of device in measuring the sleep of astronauts aboard the space shuttle, and they find it can reliably detect when they fall asleep, when they wake up, and how restful their in-space sleep is (e.g., Barger, Wright, & Czeisler, 2008).

In addition, clinicians and researchers find it helpful to know the average number of hours the individual sleeps each day, taking into account **sleep efficiency (SE)**, the percentage of time actually



▲ This participant is undergoing a polysomnograph, an overnight electronic evaluation of sleep patterns.

spent asleep, not just lying in bed trying to sleep. SE is calculated by dividing the amount of time sleeping by the amount of time in bed. An SE of 100% would mean you fall asleep as soon as your head hits the pillow and do not wake up during the night. In contrast, an SE of 50% would mean half your time in bed is spent trying to fall asleep; that is, you are awake half the time. Such measurements help the clinician determine objectively how well you sleep.

One way to determine whether a person has a problem with sleep is to observe his daytime sequelae, or behavior while awake. For example, if it takes you 90 minutes to fall asleep at night but this doesn't bother you and you feel rested during the day, then you do not have a problem. A friend who also takes 90 minutes to fall asleep but finds this delay anxiety provoking and is fatigued the next day might be considered to have a sleep problem. It is to some degree a subjective decision, partly depending on how the person perceives the situation and reacts to it.

Primary Insomnia

Insomnia is one of the most common sleep disorders. You may picture someone with insomnia as being awake all the time. However, it isn't possible to go completely without sleep. For example, after being awake for about 40 hours, a person begins having **microsleeps** that last several seconds or longer (Mendelson, 2005). In the rare occurrences of fatal familial insomnia (a degenerative brain disorder), total lack of sleep eventually leads to death (Minagar, Alekseeva, Shapshak, & Fernandez, 2009). Despite the common use of the term *insomnia* to mean "not sleeping," it actually applies to a number of complaints. People are considered to have insomnia if they have trouble falling asleep at night (difficulty initiating sleep), if they wake up frequently or too early and can't go back to sleep (difficulty maintaining sleep), or even if they sleep a reasonable number of hours but are still not rested the next day (nonrestorative sleep). Consider the case of Sonja.

Sonja ♦ School on Her Mind

Sonja was a 23-year-old law student with a history of sleep problems. She reported that she never really slept well, both having trouble falling asleep at night and usually awakening again in the early morning. Since she started law school last year, her sleep problems had grown even worse. She would lie in bed awake until the early morning hours thinking about school, getting only 3–4 hours of sleep on a typical night. In the morning, she had a great deal of difficulty getting out of bed and was frequently late for her early-morning class.

Sonja's sleep problems and their interference with her schoolwork were causing her to experience increasingly severe depression. In addition, she recently reported having a severe anxiety attack that woke her

in the middle of the night. All of these difficulties caused her to be increasingly isolated from family and friends, who finally convinced her to seek help.

We return to Sonja later in this chapter.

Clinical Description

Sonja's symptoms meet the *DSM-IV-TR* criteria for **primary insomnia**, with *primary* indicating that the complaint is not related to other medical or psychiatric problems. Looking at sleep disorders as primary recalls the overlap of sleep problems with psychological disorders such as anxiety and depression. Because not sleeping makes you anxious and anxiety further interrupts your sleep, which makes you more anxious, and so on, it is uncommon to find a person with a simple sleep disorder and no related problems.

Sonja's is a typical case of insomnia. She had trouble both initiating and maintaining sleep. Other people sleep all night but still feel as if they've been awake for hours. Although most people can carry out necessary day-to-day activities, their inability to concentrate can have serious consequences, such as debilitating accidents when they attempt to drive long distances (like bus drivers) or handle dangerous material (like electricians). Students with insomnia like Sonja's may do poorly in school because of difficulty concentrating.

Statistics

Almost a third of the population reports some symptoms of insomnia during any given year (National Sleep Foundation, 2009). For many of these individuals, sleep difficulties are a lifetime affliction (Mendelson, 2005). Approximately 35% of older adults report excessive daytime sleepiness, with older black men reporting the most problems (Green, Ndao-Brumblay, & Hart-Johnson, 2009).

A number of psychological disorders are associated with insomnia. Total sleep time often decreases with depression, substance use disorders, anxiety disorders, and dementia of the Alzheimer's type. The interrelationship between alcohol use and sleep disorders can be particularly troubling. Alcohol is often used to initiate sleep (Schuckit, 2009). In small amounts, it helps make people drowsy, but it also interrupts ongoing sleep. Interrupted sleep causes anxiety, which often leads to repeated alcohol use and an obviously vicious cycle.

actigraph A small electronic device that is worn on the wrist like a watch and records body movements. This device can be used to record sleep–wake cycles.

sleep efficiency (SE) The percentage of time actually spent sleeping of the total time spent in bed.

microsleeps The short, seconds-long periods of sleep that occurs when someone has been deprived of sleep.

primary insomnia A difficulty in initiating, maintaining, or gaining from sleep; not related to other medical or psychological problems.

DSM Disorder Criteria Summary

Primary Insomnia

Features of primary insomnia include the following:

- › Difficulty initiating or maintaining sleep, or nonrestorative sleep, for at least 1 month
- › The sleep disturbance (or associated daytime fatigue) causes clinically significant distress or impairment in functioning
- › The sleep disturbance does not occur exclusively during the course of narcolepsy, a breathing-related sleep disorder, a circadian rhythm sleep disorder, or a parasomnia
- › The disturbance does not occur exclusively during the course of another mental disorder
- › The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition

Source: Based on DSM-IV-TR. Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

Women report insomnia twice as often as men. Does this mean that men sleep better than women? Not necessarily. Remember, a sleep problem is considered a disorder *only if you experience discomfort* about it. Women may be more often diagnosed as having insomnia because they more often report the problem, not necessarily because their sleep is disrupted more. Just as people's needs concerning normal sleep change over time, complaints of insomnia differ in frequency among people of different ages. Children who have difficulty falling asleep usually throw a tantrum at bedtime or do not want to go to bed. Many children cry when they wake in the middle of the night. Estimates of insomnia among young children range from 25% to more than 40% (Owens, Rosen, & Mindell, 2003). Growing evidence points to both biological and cultural explanations for poor sleep among adolescents. As children move into adolescence, their biologically determined sleep schedules shift toward a later bedtime (Mindell & Owens, 2009). However, at least in the United States, children are still expected to rise early for school, causing chronic sleep deprivation. This problem is not observed among all adolescents, with ethnocultural differences reported among youth from different backgrounds. One study, for example, found that Chinese American youth reported the least problems with insomnia, and Mexican American adolescents reported the most difficulty sleeping (Roberts, Roberts, & Chen, 2000).

The percentage of individuals who complain of sleep problems increases as they become older adults. This higher rate in reports of sleeping problems among older people makes sense when you remember that the number of hours we sleep decreases as we age. It is not uncommon for someone older than age 65 to sleep fewer than 6 hours and wake up several times each night.

Causes

Insomnia accompanies many medical and psychological disorders, including pain and physical discomfort, physical inactivity during the day, and respiratory problems. Sometimes insomnia is related to problems with the biological clock and its control of temperature. Some people who can't fall asleep at night may have a delayed temperature rhythm: Their body temperature doesn't drop and they don't become drowsy until later at night. As a group, people with insomnia seem to have higher body temperatures than good sleepers, and their body temperatures seem to vary less; this lack of fluctuation may interfere with sleep (Lack, Gradisar, Van Someren, Wright, & Lushington, 2008).

Among the other factors that can interfere with sleeping are drug use and a variety of environmental influences such as changes in light, noise, or temperature. People admitted to hospitals often have difficulty sleeping because the noises and routines differ from those at home. Other sleep disorders, such as *sleep apnea* (a disorder that involves obstructed nighttime breathing) or *periodic limb movement disorder* (excessive jerky leg movements), can cause interrupted sleep and may seem similar to insomnia.

Finally, various psychological stresses can also disrupt your sleep. For example, one study looked at how medical and dental school students were affected by a particularly stressful event—in this case, participating in cadaver dissection (Snelling, Sahai, & Ellis, 2003). Among the effects reported by the students was a decrease in their ability to sleep.

People with insomnia may have unrealistic expectations about how much sleep they need ("I need a full 8 hours") and about how disruptive disturbed sleep will be ("I won't be able to think or do my job if I sleep for only 5 hours") (Sidani et al., 2009). The actual amount of sleep each person needs varies, and is assessed by how it affects you during the day. It is important to recognize the role of cognition in insomnia; our thoughts alone may disrupt our sleep.

Is poor sleeping a learned behavior? It is generally accepted that people suffering from sleep problems associate the bedroom and bed with the frustration and anxiety that go with insomnia. Eventually, the arrival of bedtime itself may cause anxiety (Ebben & Spielman, 2009). Interactions associated with sleep may contribute to children's sleep problems. For example, one study found that when a parent was present when the child fell asleep, the child was more likely to wake during the night (Adair, Bauchner, Philipp, Levenson, & Zuckerman, 1991). Researchers think that some children learn to fall asleep only with a parent present; if they wake up at night, they are frightened at finding themselves alone and their sleep is disrupted. Cross-cultural sleep research has focused primarily on children. In the predominant culture in the United States, infants are expected to sleep on their own, in a separate bed, and, if possible, in a separate room. However, in many other cultures as diverse as rural Guatemala and Korea and urban Japan, the child spends the first few years of life in the same room and sometimes the same bed as the mother (Mosko, Richard, & McKenna, 1997). In many cultures, mothers report that they do not ignore the cries of their children (K. Lee, 1992;



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▲ In the United States, children usually sleep alone (*left*). In many cultures, all family members share the same bed (*right*).

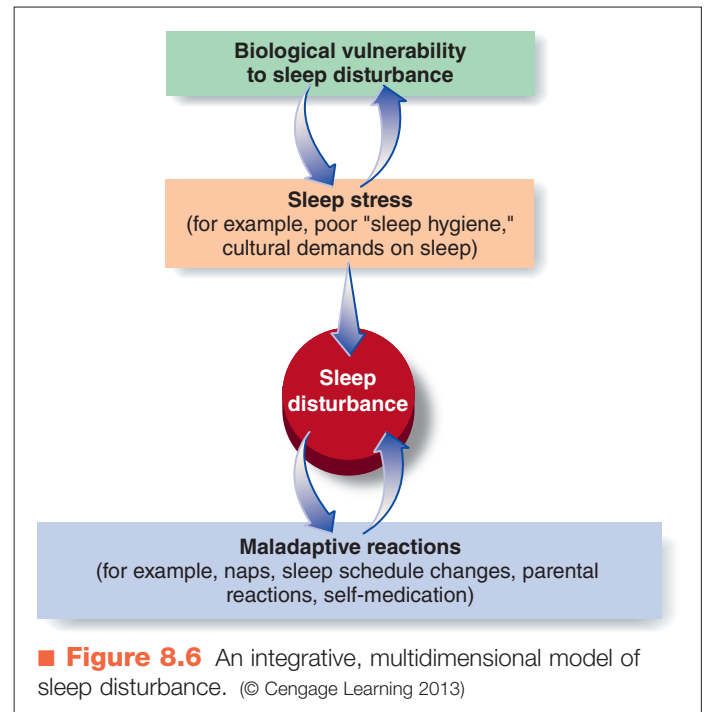
Morelli, Rogoff, Oppenheim, & Goldsmith, 1992), in stark contrast to the United States, where many pediatricians recommend that parents ignore the cries of their infants over a certain age at night (Ferber, 1985). One conclusion from this research is that sleep can be affected by cultural norms. Unmet demands can result in stress that negatively affects the ultimate sleep outcome for children (Durand, 2008).

An Integrative Model

An integrative view of sleep disorders includes several assumptions. The first is that, at some level, both biological and psychological factors are present in most cases. A second assumption is that these multiple factors are reciprocally related. This can be seen in the study we noted earlier, in which Adair and colleagues (1991) observed that children who woke frequently at night often fell asleep in the presence of parents. However, they also noted that child temperament (or personality) may have played a role in this arrangement because these children had comparatively difficult temperaments and their parents were presumably present to attend to sleep initiation difficulties. In other words, personality characteristics, sleep difficulties, and parental reaction interact in a reciprocal manner to produce and maintain sleep problems.

People may be biologically vulnerable to disturbed sleep. This vulnerability differs from person to person and can range from mild to more severe disturbances. For example, a person may be a light sleeper (easily aroused at night) or have a family history of insomnia, narcolepsy, or obstructed breathing. All these factors can lead to eventual sleeping problems. Such influences have been referred to as *predisposing conditions* (Spielman & Glovinsky, 1991); they may not, by themselves, always cause problems, but they may combine with other factors to interfere with sleep (■ Figure 8.6).

Biological vulnerability may, in turn, interact with *sleep stress* (Durand, 2008), which includes a number of events that can negatively affect sleep. For example, poor bedtime habits (such as having too much alcohol or caffeine) can interfere with falling asleep (Stepanski, 2006). Note that biological vulnerability and sleep stress influence each other (see Figure 8.6). Although we may intuitively assume that biological factors come first, extrinsic influences such



as poor sleep hygiene (the daily activities that affect how we sleep) can affect the physiological activity of sleep. One of the most striking examples of this phenomenon is jet lag, in which people's sleep patterns are disrupted, sometimes seriously, when they fly across several time zones. Whether disturbances continue or become more severe may depend on how they are managed. For example, many people react to disrupted sleep by taking over-the-counter sleeping pills. Unfortunately, most people are not aware that **rebound insomnia**—where sleep problems reappear,

rebound insomnia In a person with insomnia, the worsened sleep problems that can occur when medications are used to treat insomnia and then withdrawn.

sometimes worse—may occur when the medication is withdrawn. This rebound leads people to think they still have a sleep problem, readminister the medicine, and go through the cycle repeatedly. In other words, taking sleep aids can perpetuate sleep problems.

Other ways of reacting to poor sleep can also prolong problems. It seems reasonable that a person who hasn't had enough sleep can make up for this loss by napping during the day. Unfortunately, naps that alleviate fatigue during the day can also disrupt sleep that night. Anxiety can also extend the problem. Lying in bed worrying about school, family problems, or even about not being able to sleep will interfere with sleep (Uhde, Cortese, & Vedeniapin, 2009). The behavior of parents can also help maintain these problems in children. Children who receive a great deal of positive attention at night when they wake up may wake up during the night more often (Durand, 2008). Such maladaptive reactions, when combined with a biological predisposition to sleep problems and sleep stress, may account for continuing problems.

Primary Hypersomnia

Insomnia involves not getting enough sleep (the prefix *in* means “lacking” or “without”), and **hypersomnia** is a problem of sleeping too much (*hyper* means “in great amount” or “abnormal excess”). Many people who sleep all night find themselves falling asleep several times the next day. Consider the case of Ann.

Ann ♦ Sleeping in Public

Ann, a college student, came to my office to discuss her progress in class. We talked about several questions that she got wrong on the last exam, and as she was about to leave she said that she never fell asleep during my class. This seemed like faint praise, but I thanked her for the feedback. “No,” she said, “you don’t understand. I usually fall asleep in *all* of my classes, but not in yours.” Again, I didn’t quite understand what she was trying to tell me and joked that she must pick her professors more carefully. She laughed. “That’s probably true. But I also have this problem with sleeping too much.”

As we talked more seriously, Ann told me that excessive sleeping had been a problem since her teenage years. In situations that were monotonous or boring, or when she couldn’t be active, she fell asleep. This could happen several times a day, depending on what she was doing. Recently, large lecture classes had become a problem unless the lecturer was particularly interesting or animated. Watching television and driving long distances were also problematic.

Ann reported that her father had a similar problem. He had recently been diagnosed with narcolepsy (which we discuss next) and was now getting help at

a clinic. Both she and her brother had been diagnosed with hypersomnia. Ann had been prescribed Ritalin (a stimulant medication) about 4 years ago and said that it was only somewhat effective in keeping her awake during the day. She said the drug helped reduce the sleep attacks but did not eliminate them altogether.

The *DSM-IV-TR* diagnostic criteria for hypersomnia include not only the excessive sleepiness that Ann described but also the subjective impression of this problem (American Psychiatric Association, 2000). Remember that whether insomnia is a problem depends on how it affects each person. Ann found her disorder disruptive because it interfered with driving and paying attention in class. Hypersomnia caused her to be less successful academically and upset her personally, both of which are defining features of this disorder. She slept approximately 8 hours each night, so her daytime sleepiness couldn’t be attributed to insufficient sleep.

DSM Disorder Criteria Summary

Primary Hypersomnia

Features of primary hypersomnia include the following:

- ▶ Excessive sleepiness for at least 1 month (or less if recurrent) as evidenced by either prolonged sleep episodes or daytime sleep episodes that occur almost daily
- ▶ The excessive sleepiness causes clinically significant distress or impairment in functioning
- ▶ The excessive sleepiness is not better accounted for by insomnia, does not occur exclusively during the course of another sleep disorder, and cannot be accounted for by an inadequate amount of sleep
- ▶ The disturbance does not occur exclusively during the course of another mental disorder
- ▶ The disturbance is not due to the direct physiological effects of a substance or a general medical condition

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Several factors that can cause excessive sleepiness would not be considered hypersomnia. For example, people with insomnia (who get inadequate amounts of sleep) often report being tired during the day. In contrast, people with hypersomnia sleep through the night and appear rested upon awakening but still complain of being excessively tired throughout the day. Another sleep problem that can cause a similar excessive sleepiness is a breathing-related sleep disorder called **sleep apnea**. People with this problem have difficulty breathing at night. They often snore loudly, pause between breaths, and wake in the morning

with a dry mouth and headache. In identifying hypersomnia, the clinician needs to rule out insomnia, sleep apnea, or other reasons for sleepiness during the day (American Psychiatric Association, 2000).

We are just beginning to understand the nature of hypersomnia, so relatively little research has been done on its causes. Genetic influences seem to be involved in a portion of cases, with individuals having an increased likelihood of having certain gene factors (HLA-Cw2 and HLA-DR11) (Buysse et al., 2008). A significant subgroup of people diagnosed with hypersomnia previously were exposed to a viral infection such as mononucleosis, hepatitis, and viral pneumonia, which suggests there may be more than one cause (Hirshkowitz, Seplovitz, & Sharafkhaneh, 2009).



Monkey Business Images/Shutterstock.com

▲ Excessive sleepiness can be disruptive.

Narcolepsy

Ann described her father as having **narcolepsy**, a different form of the sleeping problem she and her brother shared (Buysse et al., 2008). In addition to daytime sleepiness, people with narcolepsy experience *cataplexy*, a sudden loss of muscle tone. Cataplexy occurs while the person is awake and can range from slight weakness in the facial muscles to complete physical collapse. Cataplexy lasts from several seconds to several minutes; it is usually preceded by strong emotion such as anger or happiness. Imagine that while cheering for your favorite team, you suddenly fall asleep; while arguing with a friend, you collapse to the floor in a sound sleep. You can imagine how disruptive this disorder can be!

Cataplexy appears to result from a sudden onset of REM sleep. Instead of falling asleep normally and going through the four nonrapid eye movement (NREM) stages that typically precede REM sleep, people with narcolepsy periodically progress right to this dream-sleep stage almost directly from the state of being awake. One outcome of REM sleep is the inhibition of input to the muscles, and this seems to be the process that leads to cataplexy.

Two other characteristics distinguish people who have narcolepsy (Buysse et al., 2008). They commonly report *sleep paralysis*, a brief period after awakening when they can't move or speak that is often frightening to those who go through it. The last characteristic of narcolepsy is *hypnagogic hallucinations*, vivid and often terrifying experiences that begin at the start of sleep and are said to be unbelievably realistic because they include not only visual aspects, but also touch, hearing, and even the sensation of body movement. Examples of hypnagogic hallucinations, which, like sleep paralysis, can be terrifying, include the vivid illusion of being caught in a fire or flying through the air. Narcolepsy is relatively rare, occurring in 0.03% to 0.16% of the population, with the numbers approximately equal among males and females. Although some cases have been reported in young children, the problems associated

with narcolepsy usually are first seen during the teenage years. Excessive sleepiness usually occurs first, with cataplexy appearing either at the same time or with a delay of up to 30 years. Fortunately, the cataplexy, hypnagogic hallucinations, and sleep paralysis often decrease in frequency over time, although sleepiness during the day does not seem to diminish with age.

DSM Disorder Criteria Summary

Narcolepsy

Features of narcolepsy include the following:

- Irresistible attacks of refreshing sleep that occur daily over at least 3 months
- The presence of one or both of the following: (1) cataplexy (i.e., brief episodes of sudden bilateral loss of muscle tone, most often in association with intense emotion), (2) recurrent intrusions of elements of rapid eye movement (REM) sleep into the transition between sleep and wakefulness, as manifested by either hypnopompic or hypnagogic hallucinations or sleep paralysis at the beginning or end of sleep episodes
- The disturbance is not due to the direct physiological effects of a substance or another general medical condition

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hypersomnia Abnormally excessive sleep. A person with this condition falls asleep several times a day.

sleep apnea A disorder involving brief periods when breathing ceases during sleep.

narcolepsy The sleep disorder involving sudden and irresistible sleep attacks.

Specific genetic models of narcolepsy are now being developed (Tafti, 2009). Previous research with Doberman pinschers and Labrador retrievers, which also inherit this disorder, suggests that narcolepsy is associated with a cluster of genes on chromosome 6, and it may be an autosomal recessive trait. Advances in understanding the etiology and treatment of such disorders can be credited to the help of “man’s best friend.”

Breathing-Related Sleep Disorders

For some people, sleepiness during the day or disrupted sleep at night has a physical origin—namely, problems with breathing while asleep. In *DSM-IV-TR*, these problems are diagnosed as **breathing-related sleep disorders**. People whose breathing is interrupted during their sleep experience numerous brief arousals throughout the night and do not feel rested even after 8 or 9 hours asleep (Hirshkowitz et al., 2009). For all of us, the muscles in the upper airway relax during sleep, constricting the passage-way somewhat and making breathing a little more difficult. For some, unfortunately, breathing is constricted a great deal and may be labored (*hypoventilation*) or, in the extreme, there may be short periods (10 to 30 seconds) when they stop breathing altogether, called *sleep apnea*. Often the affected person is only minimally aware of breathing difficulties and doesn’t attribute the sleep problems to the breathing. However, a bed partner usually notices loud snoring (which is one sign of this problem) or will have noticed frightening episodes of interrupted breathing. Other signs that a person has breathing difficulties are heavy sweating during the night, morning headaches, and episodes of falling asleep during the day (*sleep attacks*) with no resulting feeling of being rested (Hirshkowitz et al., 2009).

There are three types of apnea, each with different causes, daytime complaints, and treatment: obstructive, central, and mixed sleep apnea. *Obstructive sleep apnea* occurs when airflow stops despite continued activity by the respiratory system (Abad & Guilleminault, 2009). In some people, the airway is too narrow; in others, some abnormality or damage interferes with the ongoing effort to breathe. Everyone in a group of people with obstructive sleep apnea reported snoring at night (Guilleminault, 1989). Obesity is sometimes associated with this problem, as is increasing age. Some work now suggests that the use of MDMA (ecstasy) can lead to obstructive apnea even in young and otherwise healthy adults (McCann, Sgambati, Schwartz, & Ricaurte, 2009). Obstructive sleep apnea is most common in males and is thought to occur in 10% to 20% of the population (Jennum & Riha, 2009).

The second type of apnea, *central sleep apnea*, involves the complete cessation of respiratory activity for brief periods and is often associated with certain central nervous system disorders, such as cerebral vascular disease, head trauma, and degenerative disorders (Buysse et al., 2008). Unlike people with obstructive sleep apnea, those with central sleep apnea wake up frequently during the night but they tend not to report excessive daytime sleepiness

and often are not aware of having a serious breathing problem. Because of the lack of daytime symptoms, people tend not to seek treatment, so we know relatively little about this disorder’s prevalence or course.

The third breathing disorder, *mixed sleep apnea*, is a combination of both obstructive and central sleep apneas. All these breathing difficulties interrupt sleep and result in symptoms similar to those of insomnia.

DSM Disorder Criteria Summary

Breathing-Related Sleep Disorders

Features of breathing-related sleep disorders include the following:

- Sleep disruption, leading to excessive sleepiness or insomnia, that is judged to be due to a sleep-related breathing condition (e.g., obstructive or central sleep apnea syndrome, central alveolar hypoventilation syndrome)
- The disruption is not better accounted for by another mental disorder and is not due to the direct physiological effects of a substance or another general medical condition

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DSM Disorder Criteria Summary

Circadian Rhythm Sleep Disorders (Formerly Sleep-Wake Schedule Disorders)

Features of circadian rhythm sleep disorders include the following:

- A persistent or recurrent pattern of sleep disruption leading to excessive sleepiness or insomnia that is due to a mismatch between the sleep-wake schedule required by a person’s environment and his or her circadian sleep-wake pattern
- The sleep disturbance causes clinically significant distress or impairment in functioning
- The disturbance does not occur exclusively during the course of another sleep disorder or other mental disorder
- The disturbance is not due to the direct physiological effects of a substance or a general medical condition

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Circadian Rhythm Sleep Disorders

“Spring ahead; fall back”: People in most of the United States use this mnemonic device to remind themselves to turn the clocks ahead 1 hour in the spring and back again 1 hour in the fall. Most of us are surprised to see how disruptive this time change can be. For at least a day or two, we may be sleepy during the day and have difficulty falling asleep at night, almost as if we had jet lag. The reason for

this disruption is not just that we gain or lose 1 hour of sleep; our bodies adjust to this fairly easily. The difficulty has to do with how our biological clocks adjust to this change in time. Convention says to go to sleep at this new time while our brains are saying something different. If the struggle continues for any length of time, you may have what is called a **circadian rhythm sleep disorder**. This disorder is characterized by disturbed sleep (either insomnia or excessive sleepiness during the day) brought on by the brain's inability to synchronize its sleep patterns with the current patterns of day and night.

In the 1960s, German and French scientists identified several bodily rhythms that seem to persist without cues from the environment, rhythms that are self-regulated (Aschoff & Wever, 1962; Siffre, 1964). Because these rhythms don't exactly match our 24-hour day, they are called circadian (from *circa* meaning "about" and *dian* meaning "day"). If our circadian rhythms don't match the 24-hour day, why isn't our sleep completely disrupted over time?

Fortunately, our brains have a mechanism that keeps us in sync with the outside world. Our biological clock is in the *suprachiasmatic nucleus* in the hypothalamus. Connected to the suprachiasmatic nucleus is a pathway that comes from our eyes. The light we see in the morning and the decreasing light at night signal the brain to reset the biological clock each day. Unfortunately, some people have trouble sleeping when they want to because of problems with their circadian rhythms. The causes may be outside the person (for example, crossing several time zones in a short amount of time) or internal.

There are several types of circadian rhythm sleep disorders. *Jet lag type* is, as its name implies, caused by rapidly crossing multiple time zones (Buysse et al., 2008). People with jet lag usually report difficulty going to sleep at the proper time and feeling fatigued during the day. Older people, introverts (loners), and early risers (morning people) are most likely to be negatively affected by these time zone changes (Gillin, 1993). Research with mice suggests that the effects of jet lag can be serious—at least among older adults. When older mice were exposed to repeated artificial jet lag, a significant number of them lived shorter lives (Davidson et al., 2006). *Shift work type* sleep problems are associated with work schedules (Åkerstedt & Wright Jr., 2009). Many people, such as hospital employees, police, or emergency personnel, work at night or must work irregular hours; as a result, they may have problems sleeping or experience excessive sleepiness during waking hours. Unfortunately, the problems of working (and thus staying awake) at unusual times can go beyond sleep and may contribute to cardiovascular disease, ulcers, and breast cancer in women (Richardson, 2006). Research suggests that people with circadian rhythm disorders are at greater risk of having one or more personality disorders (Dagan, Dela, Omer, Hallis, & Dar, 1996). Almost two thirds of all workers on rotating shifts complain of poor sleep (Neylan, Reynolds, & Kupfer, 2003).

In contrast with jet lag and shift work sleep-related problems, which have external causes such as long-distance

travel and job selection, several circadian rhythm sleep disorders seem to arise from within the person experiencing the problems. Extreme night owls, people who stay up late and sleep late, may have a problem known as *delayed sleep phase type*. Sleep is delayed or later than normal bedtime. At the other extreme, people with an *advanced sleep phase type* of circadian rhythm disorder are "early to bed and early to rise." Here, sleep is advanced or earlier than normal bedtime. Partly because of our general lack of knowledge about them, *DSM-IV-TR* does not include these sleep phases as circadian rhythm sleep disorders.

Research on why our sleep rhythms are disrupted is advancing at a great pace, and we are beginning to understand the circadian rhythm process. Scientists believe the hormone *melatonin* contributes to the setting of our biological clocks that tell us when to sleep. This hormone is produced by the pineal gland, in the center of the brain. Melatonin (don't confuse this with *melanin*, the chemical that determines skin color) has been nicknamed the "Dracula hormone" because its production is stimulated by darkness and ceases in daylight. When our eyes see that it is nighttime, this information is passed on to the pineal gland, which, in turn, begins producing melatonin. Researchers believe that both light and melatonin help set the biological clock.

Concept Check 8.4

Match the following descriptions of sleeping problems with the correct term: (a) cataplexy, (b) primary hypersomnia, (c) primary insomnia, (d) sleep apnea, (e) sleep paralysis, (f) narcolepsy, (g) circadian rhythm sleep disorder, and (h) breathing-related sleep disorder.

1. Timothy wakes up frequently every night because he feels he is about to hyperventilate. He can't seem to get enough air, and many times his wife will wake him to tell him to quit snoring. He is suffering from a _____.
2. Sonia has problems staying awake throughout the day. Even while talking on the phone or riding the bus, she unexpectedly loses muscle tone and falls asleep for a while. This is due to _____.
3. Jaime sometimes awakens and cannot move or speak. This is a particularly frightening experience known as _____.

breathing-related sleep disorders A sleep disruption leading to excessive sleepiness or insomnia, caused by a breathing problem such as interrupted (sleep apnea) or labored (hypoventilation) breathing.

circadian rhythm sleep disorders A sleep disturbance resulting in sleepiness or insomnia, caused by the body's inability to synchronize its sleep patterns with the current pattern of day and night.

4. Brett has started a new job that requires him to change shifts monthly. He sometimes has day shifts and at other times has night shifts. Since then he has had considerable trouble sleeping. _____
5. Rama is extremely overweight. His wife suspects he may be suffering from _____ because

he snores every night and often wakes up exhausted as though he never slept.

6. Melinda sleeps all night and still finds herself falling asleep throughout the next day. This happens even when she goes to bed early and gets up as late as possible. _____

Treatment of Sleep Disorders

- › What medical treatments are available for chronic sleep problems?
- › What are the limitations of those treatments?

When we can't fall asleep or we awaken frequently, or when sleep does not restore our energy and vitality, we need help. A number of biological and psychological interventions have been designed and evaluated to help people regain the benefits of normal sleep.

Medical Treatments

People who complain of insomnia to a medical professional are likely prescribed one of several benzodiazepine or related medications, which include short-acting drugs such as triazolam (Halcion), zaleplon (Sonata), and zolpidem (Ambien) and long-acting drugs such as flurazepam (Dalmane). Short-acting drugs (those that cause only brief drowsiness) are preferred because the long-acting drugs sometimes do not stop working by morning and people report more daytime sleepiness. The long-acting medications are sometimes preferred when negative effects such as daytime anxiety are observed in people taking the short-acting drugs (Neubauer, 2009). Newer medications, such as those that work directly with the melatonin system (e.g., ramelteon [Rozerem]), are also being developed to help people fall and stay asleep. People older than age 65 are most likely to use medication to help them sleep, although people of all ages, including young children (Durand, 2008), have been prescribed medications for insomnia.

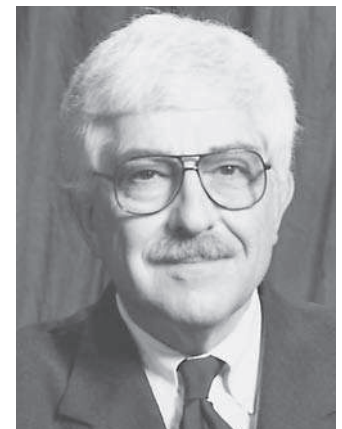
There are several drawbacks to medical treatments for insomnia (Pagel, 2006). First, benzodiazepine medications can cause excessive sleepiness. Second, people can easily become dependent on them and rather easily misuse them, deliberately or not. Third, these medications are meant for short-term treatment and are not recommended for use longer than 4 weeks. Longer use can cause dependence and rebound insomnia. A newer concern for some medications (e.g., Ambien) is that they may increase the likelihood of sleepwalking-related problems, such as sleep-related eating disorder (Morgenthaler & Silber, 2002). Therefore, although medications may be helpful for sleep problems that will correct themselves in a short period (e.g., insomnia

because of anxiety related to hospitalization), they are not intended for long-term chronic problems.

To help people with hypersomnia or narcolepsy, physicians usually prescribe a stimulant such as methylphenidate (Ritalin, the medication Ann was taking) or modafinil (Nevsimalova, 2009). Cataplexy, or loss of muscle tone, can be treated with antidepressant medication, not because people with narcolepsy are depressed but because antidepressants suppress REM (or dream) sleep. Also, gamma-hydroxybutyrate (GHB) is the first medication specifically approved to treat cataplexy. Cataplexy seems to be related to the sudden onset of REM sleep; therefore, the antidepressant medication can be helpful in reducing these attacks.

Treatment of breathing-related sleep disorders focuses on helping the person breathe better during sleep. For some, this means recommending weight loss. In some people who are obese, the neck's soft tissue compresses the airways. Unfortunately, as we have seen earlier in this chapter, voluntary weight loss is rarely successful in the long term; as a result, this treatment has not proved successful for breathing-related sleep disorders (Sanders & Givelber, 2006).

The gold standard for the treatment of obstructive sleep apnea involves the use of a mechanical device—called the continuous positive air pressure (CPAP) machine—that improves breathing. Patients wear a mask that provides slightly pressurized air during sleep and it helps them breathe more normally throughout the night. Unfortunately, many peo-



Courtesy of William Dement

▲ William C. Dement is a pioneering sleep researcher and director of the Sleep Disorders Center at Stanford University.

ple have difficulty using the device because of issues of comfort and some even experience a form of claustrophobia. To assist these individuals, a variety of strategies are tried, including the use of psychological interventions including desensitization for claustrophobia, patient and partner education, and attendance of support groups (Abad & Guilleminault, 2009). Severe breathing problems may require surgery to help remove blockages in parts of the airways.

Environmental Treatments

Because medication as a primary treatment isn't usually recommended, other ways of getting people back in step with their sleep rhythms are usually tried. One general principle for treating circadian rhythm disorders is that *phase delays* (moving bedtime later) are easier than *phase advances* (moving bedtime earlier). In other words, it is easier to stay up several hours later than usual than to force yourself to go to sleep several hours earlier. Scheduling shift changes in a clockwise direction (going from day to evening schedule) seems to help workers adjust better. People can best readjust their sleep patterns by going to bed several hours later each night until bedtime is at the desired hour (Buysse et al., 2008). A drawback of this approach is that it requires the person to sleep during the day for several days, which is difficult for people with regularly scheduled responsibilities.

Another strategy to help people with sleep problems involves using bright light to trick the brain into readjusting the biological clock. Research indicates that bright light (also referred to as *phototherapy*) may help people with circadian rhythm problems readjust their sleep patterns (Bjorvatn & Pallesen, 2009). People typically sit in front of a bank of fluorescent lamps that generate light greater than 2,000 lux, an amount significantly different from normal

indoor light (250 lux). Several hours of exposure to this bright light have successfully reset the circadian rhythms of many individuals. This type of treatment provides some hope for people with schedule-related sleep problems.

Psychological Treatments

As you can imagine, the limitations of using medication to help people sleep better has led to the development of psychological treatments. Table 8.4 briefly describes some psychological approaches to insomnia. Different treatments help people with different kinds of sleep problems. For example, relaxation treatments reduce the physical tension that seems to prevent some people from falling asleep at night. Some people report that their anxiety about work, relationships, or other situations prevents them from sleeping or wakes them up in the middle of the night. To address this problem, cognitive treatments are used.

Research shows that some psychological treatments for insomnia may be more effective than others. For adult sleep problems, stimulus control may be recommended. People are instructed to use the bedroom only for sleeping and for sex and *not* for work or other anxiety-provoking activities (for example, watching the news on television). Progressive relaxation or sleep hygiene (changing daily habits that may interfere with sleep) alone may not be as effective as stimulus control alone for some people (Means & Edinger, 2006). Because sleep problems are so widespread, there is a growing interest in developing Internet-based treatments to determine if certain sufferers can help themselves with appropriate guidance. One study, for example, randomly assigned adults to a control group or an Internet-based education group (Ritterband et al., 2009). The Internet group received online instruction on the proper use of several of the psychological treatments (e.g.,

Table 8.4 Psychological Treatments for Insomnia

Sleep Treatment	Description
Cognitive	This approach focuses on changing the sleepers' unrealistic expectations and beliefs about sleep ("I must have 8 hours of sleep each night"; "If I get less than 8 hours of sleep, it will make me ill"). The therapist attempts to alter beliefs and attitudes about sleeping by providing information on topics such as normal amounts of sleep and a person's ability to compensate for lost sleep.
Guided imagery relaxation	Because some people become anxious when they have difficulty sleeping, this approach uses meditation or imagery to help with relaxation at bedtime or after a night waking.
Graduated extinction	Used for children who have tantrums at bedtime or wake up crying at night, this treatment instructs the parent to check on the child after progressively longer periods until the child falls asleep on his or her own.
Paradoxical intention	This technique involves instructing individuals in the opposite behavior from the desired outcome. Telling poor sleepers to lie in bed and try to stay awake as long as they can is used to try to relieve the performance anxiety surrounding efforts to try to fall asleep.
Progressive relaxation	This technique involves relaxing the muscles of the body in an effort to introduce drowsiness.

sleep restriction, stimulus control, sleep hygiene, cognitive restructuring, and relapse prevention). The findings were striking, suggesting that not only could the treatment be delivered over the Internet, but also that sleep improved in this group even 6 months later. Under certain circumstances people are able to use *evidence-based instruction* (education on the use of a treatment that has empirical support) to improve a variety of psychological problems.

Sonja—the law student we profiled in the beginning of this section—was helped with her sleep problems using several techniques. She was instructed to limit her time in bed to about 4 hours of sleep time (sleep restriction), about the amount of time she slept each night. The period was lengthened when she began to sleep through the night. Sonja was also asked not to do any schoolwork while in bed and to get out of bed if she couldn't fall asleep within 15 minutes (stimulus control). Finally, therapy involved confronting her unrealistic expectations about how much sleep was enough for a person of her age (cognitive therapy). Within about 3 weeks of treatment, Sonja was sleeping longer (6 to 7 hours per night as opposed to 4 to 5 hours previously) and had fewer interruptions in her sleep. Also, she felt more refreshed in the morning and had more energy during the day. Sonja's results mirror those of studies that find combined treatments to be effective in older adults with insomnia (Petit, Azad, Byszewski, Sarazan, & Power, 2003). One important study, using a randomized placebo-control design, found that cognitive-behavioral therapy (CBT) may be more successful treating sleep disorders in older adults than a medical (drug) intervention (Sivertsen et al., 2006).

For young children, some cognitive treatments may not be possible. Instead, treatment often includes setting up bedtime routines such as a bath, followed by a parent's reading a story, to help children go to sleep at night. Graduated extinction (described in Table 8.5) has been used with some success for bedtime problems and for waking up at night (Durand, 2008).

Preventing Sleep Disorders

Sleep professionals generally agree that a significant portion of the sleep problems people experience daily can be prevented by following a few steps during the day. Referred to as *sleep hygiene*, these changes in lifestyle can be relatively simple to follow and can help avoid problems such as insomnia for some people (Gellis & Lichstein, 2009). Some sleep hygiene recommendations rely on allowing the brain's normal drive for sleep to take over, replacing the restrictions we place on our activities that interfere with sleep. For example, setting a regular time to go to sleep and awaken each day can help make falling asleep at night easier. Avoiding the use of caffeine and nicotine—which are both stimulants—can also help prevent problems such as nighttime awakening. Table 8.5 illustrates a number of the sleep hygiene steps recommended for preventing sleep problems.

Table 8.5 Good Sleep Habits

- Establish a set bedtime routine.
- Develop a regular bedtime and a regular time to awaken.
- Eliminate all foods and drinks that contain caffeine 6 hours before bedtime.
- Limit any use of alcohol or tobacco.
- Drink milk before bedtime.
- Eat a balanced diet, limiting fat.
- Go to bed only when sleepy and get out of bed if you are unable to fall asleep or back to sleep after 15 minutes.
- Do not exercise or participate in vigorous activities in the hours before bedtime.
- Do include a weekly program of exercise during the day.
- Restrict activities in bed to those that help induce sleep.
- Reduce noise and light in the bedroom.
- Increase exposure to natural and bright light during the day.
- Avoid extreme temperature changes in the bedroom (that is, too hot or too cold).

Source: Adapted, with permission, from Durand, V. M. (1998). *Sleep better: A guide to improving sleep for children with special needs* (p. 60). Baltimore: Paul H. Brookes.

A few studies have investigated the value of educating parents about the sleep of their young children in an effort to prevent later difficulties. Adachi and colleagues (2009), for example, provided 10 minutes of group guidance and a simple educational booklet to the parents of 4-month-old children. They followed up on these children 3 months later and found that, compared to a randomly selected control group of children, the ones whose parents received education about sleep experienced fewer sleep problems. Because so many children display disruptive sleep problems, this type of preventive effort could significantly improve the lives of many families.

Parasomnias and Their Treatment

Parasomnias are not problems with sleep itself but abnormal events that occur either during sleep or during that twilight time between sleeping and waking. Some events associated with parasomnia are not unusual if they happen while you are awake (e.g., walking to the kitchen to look into the refrigerator) but can be distressing if they take place while you are sleeping.

Parasomnias are of two types: those that occur during REM sleep, and those that occur during NREM sleep. As you might have guessed, **nightmares** occur during REM or dream sleep (Blanes, Burgess, Marks, & Gill, 2009). About 10% to 50% of children and about 1% of adults experience them regularly (Hirshkowitz et al., 2009). To qualify as a nightmare disorder, according to *DSM-IV-TR* criteria, these experiences must be so distressful that they impair a person's ability to carry on normal activities (such as making a person too anxious to try to sleep at night). Some researchers distinguish nightmares from bad dreams by whether or not you wake up as a result. Nightmares are defined as disturbing dreams that awaken the sleeper; bad



Katrina Wittlamp/Photodisc/Jupiterimages

▲ A nightmare is distressing for both child and parent.

dreams are those that do not awaken the person experiencing them. Using this definition, college students report an average of 30 bad dreams and 10 nightmares per year (Zadra & Donderi, 2000). Because nightmares are so common, you would expect that a great deal of research would have focused on their causes and treatment. Unfortunately, this is not so, and we still know little about why people have nightmares and how to treat them. Fortunately, they tend to decrease with age.

Sleep terrors, which most commonly afflict children, usually begin with a piercing scream. The child is extremely upset, often sweating, and frequently has a rapid heartbeat. On the surface, sleep terrors appear to resemble nightmares—the child cries and appears frightened—but they occur during NREM sleep and therefore are not caused by frightening dreams. During sleep terrors, children cannot be easily awakened and comforted, as they can during a nightmare. Children do not remember sleep terrors, despite their often dramatic effect on the observer (Durand, 2008). Approximately 5% of children (more boys than girls) may experience sleep terrors; for adults, the prevalence rate is less than 1% (Buysse, Reynolds, & Kupfer, 1993). As with nightmares, we know relatively little about sleep terrors, although several theories have been proposed, including the possibility of a genetic component because the disorder tends to occur in families (Durand, 2008). Treatment for sleep terrors usually begins with a recommendation to wait and see if they disappear on their own.

DSM Disorder Criteria Summary

Nightmare Disorder

Features of nightmare disorder include the following:

- › Repeated awakenings from the major sleep period or naps with detailed recall of extended and extremely frightening dreams, generally during the second half of the sleep period
- › On awakening from the frightening dreams, the person rapidly becomes oriented and alert
- › The dream experience, or the sleep disturbance resulting from the awakening, causes significant distress or impairment in functioning
- › Nightmares do not occur exclusively during the course of another mental disorder and are not due to the direct physiological effects of a substance or a general medical condition

Source: Based on *DSM-IV-TR*. Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

One approach to reducing chronic sleep terrors is the use of *scheduled awakenings*. In the first controlled study of its kind, Durand and Mindell (1999) instructed parents of children who were experiencing almost nightly sleep terrors to awaken their child briefly approximately 30 minutes before a typical episode (these usually occur around the same time each evening). This simple technique, which was faded out over several weeks, was successful in almost eliminating these disturbing events.

It might surprise you to learn that **sleepwalking** (also called **somnambulism**) occurs during NREM sleep (Shatkin & Ivanenko, 2009). This means that when people walk in their sleep, they are probably not acting out a dream. This parasomnia typically occurs during the first few hours while a person is in the deep stages of sleep. The *DSM-IV-TR* criteria for sleepwalking require that the person leave the bed, although less active episodes can involve small motor behaviors, such as sitting up in bed and picking at the blanket or gesturing. Because sleepwalking occurs during the deepest stages of sleep, waking someone during an episode is difficult; if the person is awakened, she typically will not remember what has happened. It is not true, however, that waking a sleepwalker is somehow dangerous.

nightmare A frightening and anxiety-provoking dream occurring during rapid eye movement sleep. The individual recalls the bad dream and recovers alertness and orientation quickly.

sleep terror An episode of apparent awakening from sleep, accompanied by signs of panic and followed by disorientation and amnesia for the incident. Sleep terrors occur during nonrapid eye movement sleep and so do not involve frightening dreams.

sleepwalking (somnambulism) Parasomnia that involves leaving the bed during nonrapid eye movement sleep. See also somnambulism.

DSM Disorder Criteria Summary

Sleep Terror Disorder

Features of sleep terror disorder include the following:

- › Recurrent episodes of abrupt awakening from sleep, usually occurring during the first third of the major sleep episode and beginning with a panicky scream
- › Intense fear and signs of autonomic arousal, such as tachycardia, rapid breathing, and sweating, during each episode
- › Relative unresponsiveness to efforts of others to comfort the person during the episode
- › No detailed dream is recalled, and there is amnesia for the episode
- › The episodes cause clinically significant distress or impairment in functioning
- › The disturbance is not due to the direct physiological effects of a substance or a general medical condition

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DSM Disorder Criteria Summary

Sleepwalking Disorder

Features of sleepwalking disorder include the following:

- › Repeated episodes of rising from bed during sleep and walking about, usually occurring during the first third of the major sleep episode
- › While sleepwalking, the person has a blank, staring face; is relatively unresponsive to the efforts of others to communicate; and can be awakened only with great difficulty
- › On awakening (either from the sleepwalking episode or the next morning), the person has amnesia for the episode
- › Within several minutes after awakening from the sleepwalking episode, there is no impairment of mental activity or behavior (although there may initially be a short period of confusion or disorientation)
- › The sleepwalking causes clinically significant distress or impairment in functioning
- › The disturbance is not due to the direct physiological effects of a substance or a general medical condition

Source: Based on DSM-IV-TR. Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

Sleepwalking is primarily a problem during childhood, although a small proportion of adults are affected. A relatively large number of children—from 15% to 30%—have at least one episode of sleepwalking, with about 2% reported to have multiple incidents (Neylan et al., 2003). In most cases, the course of sleepwalking is short, and few people older than age 15 continue to exhibit this parasomnia.

We do not yet clearly understand why some people sleepwalk, although factors such as extreme fatigue, previous sleep deprivation, the use of sedative or hypnotic drugs,

and stress have been implicated (Shatkin & Ivanenko, 2009). On occasion, sleepwalking episodes have been associated with violent behavior, including homicide and suicide (Cartwright, 2006). In one case, a man drove to his in-laws' house, succeeded in killing his mother-in-law, and attempted to kill his father-in-law. He was acquitted of the charges of murder, using sleepwalking as his legal defense (Broughton, Billings, & Cartwright, 1994). These cases are still controversial, although there is evidence for the legitimacy of some violent behavior coinciding with sleepwalking episodes.

There also seems to be a genetic component to sleepwalking, with a higher incidence observed among identical twins and within families (Broughton, 2000). A related disorder, *nocturnal eating syndrome*, is when individuals rise from their beds and eat although they are still asleep (Striegel-Moore et al., 2010). This problem, which is different than the *night eating syndrome* discussed earlier in the chapter in the eating disorders section, may be more frequent than previously thought; it was found in almost 6% of individuals in one study who were referred because of insomnia complaints (Manni, Ratti, & Tartara, 1997; Winkelman, 2006).

There is an increasing awareness that sleep is important for both our mental and our physical well-being. Sleep problems are also comorbid with many other disorders and therefore can compound the difficulties of people with significant psychological difficulties. Researchers are coming closer to understanding the basic nature of sleep and its disorders, and we anticipate significant treatment advances in the years to come.

Concept Check 8.5

Part A

Diagnose the sleep problems of the cases here using one of the following: (a) nocturnal eating syndrome, (b) sleep terrors, and (c) nightmares.

1. Jaclyn's dad is sometimes awakened by his daughter's screams. He runs to Jaclyn's room to comfort her and is eventually able to calm her down. Jaclyn usually explains that she was being chased by a big, one-eyed, purple monster. The events typically happen after watching scary movies with friends. _____
2. Sho-jen's parents hear her piercing screams on many nights and rush to comfort her, but she does not respond. During these episodes, her heart rate is elevated and her pajamas are soaked in sweat. However, when she gets up the next day she has no memory of the experience. _____
3. Jack has made a serious commitment to his diet for more than a month but continues to gain weight. He has no memory of eating but

noticed that food is always missing from the refrigerator. _____

Part B

Fill in the blanks to make the following statements correct about the treatment of sleep disorders.

4. Karen wakes up screaming every night, disregarding her parents' efforts to comfort her. Her heart rate is elevated in these episodes, and her pajamas are soaked in sweat. The next day, she has no memory of the experience. To help reduce

these night terrors, Karen's pediatrician used _____.

5. After George's wife died at the age of 68, he could not sleep. To help him through the hardest first week, Dr. Brown prescribed _____ for his insomnia.
6. Carl's doctor suggested some relatively simple lifestyle changes, otherwise known as good _____, when he expressed concern about developing a sleep disorder.



On the Spectrum A Transdiagnostic Treatment of Eating Disorders

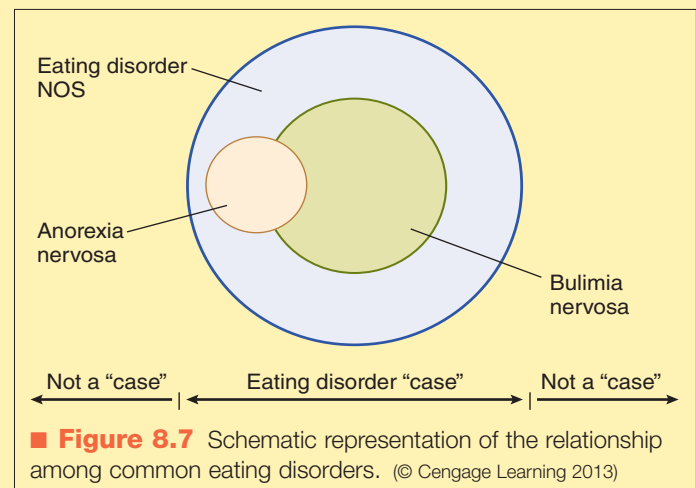
In *DSM-IV*, eating disorders for the most part are considered to be mutually exclusive. For example, according to *DSM-IV* guidelines a person cannot meet criteria for both anorexia and bulimia. But investigators working in this area have discovered that features of the various eating disorders overlap considerably (Fairburn, Cooper, Shafran, & Wilson, 2008). Furthermore, a large portion of patients, perhaps as many as 50% or more, who meet criteria for a clinically severe eating disorder do not meet criteria for anorexia or bulimia and are diagnosed with "eating disorder not otherwise specified" (eating disorder NOS) (Fairburn & Bohn, 2005). As described earlier in the chapter, some of these patients would now meet criteria for "binge eating disorder," which is likely to be included as a full-fledged diagnostic category in *DSM-5*. A schematic representation of the relationship of anorexia, bulimia, and eating disorder NOS is presented in ■ Figure 8.7. The figure's two inner circles, representing anorexia and bulimia, overlap; this overlapping area would include those people who would meet criteria for both disorders, if *DSM-IV* allowed such overlap.

As noted in Figure 8.3, these eating disorders have very similar causal influences including similar inherited biological vulnerabilities, similar social influences (primarily cultural influences glorifying thinness), and a strong family influence toward perfectionism in all things. Finally, all eating disorders seem to share anxiety focused on one's appearance and presentation to others and distorted body image. Now, Christopher Fairburn and

associates have proposed a transdiagnostic treatment protocol designed to be applicable across several eating disorder diagnoses (Fairburn, Cooper, Shafran, & Wilson, 2008; Fairburn, Cooper, Doll, et al., 2009). In this treatment protocol, the essential components of

cognitive-behavioral therapy (CBT) directed at causal factors common to all eating disorders are targeted in an integrated way. (Individuals with anorexia and a very low weight—BMI of 17.5 or less—who would need inpatient treatment would be excluded until their weight was restored to an adequate level when they could then benefit from the program.) Thus, the principal foci of this protocol are on the distorted evaluation of body shape and weight; maladaptive attempts to control weight in the form of strict dieting, possibly accompanied by binge eating; and methods to compensate for overeating such as purging, laxative misuse, etc.

Because additional psychological problems including difficulty tolerating negative moods, tendencies to perfectionism, accompanying low self-esteem, and interpersonal difficulties commonly accompany eating disorders, Fairburn and colleagues developed what they called an "enhanced treatment" (CBT-E) that also addresses



■ **Figure 8.7** Schematic representation of the relationship among common eating disorders. (© Cengage Learning 2013)

these factors (Fairburn, Cooper, Shafran, Bohn, et al., 2008). In a landmark study (Fairburn, Cooper, Doll, et al., 2009), this CBT-E protocol was evaluated against a more focused transdiagnostic protocol dealing only with features specific to the eating disorders. Findings indicated that indeed the enhanced protocol was more effective than the focused protocol in treating eating disorders and accompanying complex psychopathology including perfectionism and interpersonal difficulties, whereas the focused protocol was all that was required for any of the eating disorders without complex psychopathology. This transdiagnostic protocol has already been adopted widely in eating disorder clinics around the world and represents yet another example of the trend away from dealing with discrete, narrowly defined diagnostic categories in favor of more broad-based dimensions of psychopathology within a spectra of related disorders.

Summary

What are the defining features of bulimia nervosa and anorexia nervosa?

- › The prevalence of eating disorders has increased rapidly over the past half century. As a result, they were included for the first time as a separate group of disorders in *DSM-IV*.

Bulimia Nervosa and Anorexia Nervosa

How does binge-eating disorder differ from bulimia?

- › There are two prevalent eating disorders. In bulimia nervosa, dieting results in out-of-control binge-eating episodes that are often followed by purging the food through vomiting or other means. Anorexia nervosa, in which food intake is cut dramatically, results in substantial weight loss and sometimes dangerously low body weight.

Binge-Eating Disorder

- › In binge-eating disorder, a pattern of binge eating is *not* followed by purging.

Statistics and Course for Eating Disorders

- › Bulimia nervosa and anorexia nervosa are largely confined to young, middle- to upper-class women in Western cultures who are pursuing a thin body shape that is culturally mandated and biologically inappropriate, making it extremely difficult to achieve.
- › Without treatment, eating disorders become chronic and can, on occasion, result in death.

Causes of Eating Disorders

What social, psychological, and neurobiological factors might cause eating disorders?

- › In addition to sociocultural pressures, causal factors include possible biological and genetic vulnerabilities (the disorders tend to run in families), psychological factors (low self-esteem), social anxiety (fears of rejection), and distorted body image (relatively normal-weight individuals view themselves as fat and ugly).

Treatment of Eating Disorders

How does the use of medications compare with psychological therapies for the treatment of eating disorders?

- › Several psychosocial treatments are effective, including cognitive-behavioral approaches combined with family therapy and interpersonal psychotherapy. Drug treatments are less effective at the current time.

Obesity

What are some possible causes of obesity?

- › Obesity is not a disorder in *DSM* but is one of the more dangerous epidemics confronting the world today. Cultural norms that encourage eating high-fat foods combine with genetic and other factors to cause obesity, which is difficult to treat.

What treatments are available?

- › Professionally directed behavior modification programs, possibly combined with drugs, are moderately successful, but prevention efforts in the form of changes in government policy on nutrition seem the most promising.

Sleep Disorders

What are the critical diagnostic features of the major sleep disorders?

- › Sleep disorders are highly prevalent in the general population and are of two types: dyssomnias (disturbances of sleep) and parasomnias (abnormal events such as nightmares and sleepwalking that occur during sleep).
- › Of the dyssomnias, the most common disorder, primary insomnia, involves the inability to initiate sleep, problems maintaining sleep, or failure to feel refreshed after a full night's sleep. Other dyssomnias include primary hypersomnia (excessive sleep), narcolepsy (sudden and irresistible sleep attacks), circadian rhythm sleep disorders (sleepiness or insomnia caused by the body's inability to synchronize its sleep patterns with day and night), and breathing-related sleep disorders (disruptions that have a physical origin, such as sleep apnea, that lead to excessive sleepiness or insomnia).
- › The formal assessment of sleep disorders, a polysomnographic evaluation, is typically done by monitoring the heart, muscles, respiration, brain waves, and other functions of a sleeping client in the lab. In addition to such monitoring, it is helpful to determine the individual's sleep efficiency, a percentage based on the time the individual actually sleeps as opposed to time spent in bed trying to sleep.

What medical and psychological treatments are used for the treatment of sleep disorders?

- › Benzodiazepine medications have been helpful for short-term treatment of many of the dyssomnias, but they must be used carefully or they might cause rebound insomnia, a withdrawal experience that can cause worse sleep problems after the medication is stopped. Any long-term treatment of sleep problems should include psychological interventions such as stimulus control and sleep hygiene.

How are rapid eye movement and nonrapid eye movement sleep related to the parasomnias?

- › Parasomnias such as nightmares occur during rapid eye movement (or dream) sleep, and sleep terrors and sleepwalking occur during nonrapid eye movement sleep.

Key Terms

bulimia nervosa, 285
binge, 285
anorexia nervosa, 285
binge-eating disorder (BED), 285
obesity, 287
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night eating syndrome, 305
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sleep terrors, 321
sleepwalking (somnambulism), 321

Answers to Concept Checks

8.1

1. c; 2. a; 3. a; 4. b

8.2

1. T; 2. T; 3. F (females find a smaller size more attractive than do men);
4. F (they help with bulimia nervosa, not anorexia); 5. T; 6. T

8.3

1. T; 2. F (it's only one third or more);
3. F; 4. T

8.4

1. h; 2. f; 3. e; 4. g; 5. d; 6. b

8.5

Part A

1. c; 2. b; 3. a

Part B

4. scheduled awakenings; 5. benzodiazepines; 6. sleep hygiene

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Abnormal Psychology Videos

- › *Susan, a Client with Anorexia Nervosa*: Susan talks about her fears of not being “skinny enough.”
- › *Weight Control*: Consider how researchers are helping people deal with the obesity epidemic.
- › *Sleep Cycle*: This clip describes the normal cycle of REM and NREM sleep throughout the night—a cycle that may be altered in sleep disorders.

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Video Concept Reviews

CengageNOW also contains Mark Durand's *Video Concept Reviews* on these challenging topics.

- › Bulimia Nervosa—including Bingeing and Purging
- › Anorexia Nervosa
- › Concept Check: Difference between Anorexia and Bulimia
- › Binge Eating Disorder

- › Concept Check: Why Obesity Is Not in *DSM-IV*
- › Dyssomnias and Parasomnias
- › Polysomnographic (PSG) Evaluation
- › Primary Insomnia
- › Hypersomnia
- › Narcolepsy
- › Alien Abduction and Sleep
- › Circadian Rhythm Disorders

Chapter Quiz

1. It is estimated that _____ of individuals with eating disorders die as a result of the disorder, with as many as 50% of those deaths coming from _____.
 - a. 20%; homicide
 - b. 20%; suicide
 - c. 50%; homicide
 - d. 50%; suicide
2. Dr. Thompson sees a patient with a chubby face, calluses on her fingers, and small scars on the back of her hand. Tests indicate that the patient weighs slightly more than her expected weight and that she has an electrolyte imbalance. The patient reports that she is having persistent constipation and that she feels as if her heart has been skipping beats. These symptoms are consistent with:
 - a. depression
 - b. anxiety
 - c. anorexia nervosa
 - d. bulimia nervosa
3. Research on bulimia nervosa suggests that it most often co-occurs with:
 - a. anxiety disorders
 - b. mood disorders
 - c. psychotic disorders
 - d. substance use disorders
4. The typical age of onset for anorexia nervosa and bulimia nervosa is _____, with younger cases of anorexia tending to begin at _____ and younger cases of bulimia tending to begin at _____.
 - a. 30; 25; 20
 - b. 20; 15; 10
 - c. 15; 10; 5
 - d. 15; 13; 12
5. In a study by Fallon and Rozin, female undergraduates:
 - a. rated their current body size the same as the ideal body size
 - b. rated the ideal body size smaller than the attractive body size
 - c. rated the ideal body size heavier than the attractive body size
 - d. rated their current body size smaller than the ideal body size
6. Which of the following statements is true of cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT) in the treatment of bulimia?
 - a. CBT appears to work faster than IPT, but they both seem to have the same positive effect at a 1-year follow-up.
 - b. CBT and IPT appear to have the same impact in both the short term and the long term.
 - c. IPT appears to work faster than CBT, but they both seem to have the same positive effect at a 1-year follow-up.
 - d. Neither CBT nor IPT appears to be effective in the treatment of bulimia.
7. Which of the following is used to measure arm movements as an indicator of sleep activity and sleep quality?
 - a. electrocardiogram
 - b. electromyograph
 - c. electroencephalograph
 - d. actigraph

8. While sleeping, Michael, a 55-year-old overweight male, experiences a cessation in his breathing for short periods. Michael's wife reports that he snores continuously and never feels rested. Michael's symptoms are consistent with:
 - a. narcolepsy
 - b. sleep apnea
 - c. sleep-wake schedule disorder
 - d. cataplexy
9. Mr. Dunn has been experiencing insomnia for several weeks. His doctor recommends that he only lie in bed for 3 hours, the amount of time that he actually sleeps each night. The amount of time Mr. Dunn lies in bed is then increased as he begins to sleep more. This treatment is known as:
 - a. sleep hygiene
 - b. sleep restriction
 - c. phase delay
 - d. progressive relaxation
10. The primary difference between sleep terrors and nightmares is:
 - a. sleep terrors usually begin with a scream
 - b. children do not remember nightmares
 - c. sleep terrors occur during NREM sleep
 - d. sleep terrors are more prevalent in the population(See Appendix A for answers.)

Exploring Eating Disorders

Individuals with eating disorders:

- › Feel a relentless, all-encompassing drive to be thin
- › Are overwhelmingly young females from middle- to upper-class families, who live in socially competitive environments
- › Lived only in Western countries until recently

Psychological—Diminished sense of personal control and self-confidence, causing low self-esteem. Distorted body image.

Social—Cultural and social emphasis on slender ideal, leading to body dissatisfaction and preoccupation with food and eating.

Causes

Biological—Possible genetic tendency to poor impulse control, emotional instability, and perfectionistic traits

EATING DISORDERS

Disorder	Characteristics	Treatment
Bulimia Nervosa	<ul style="list-style-type: none"> • Out-of-control consumption of excessive amounts of mostly non-nutritious food within a short time • Elimination of food through self-induced vomiting and/or abuse of laxatives or diuretics • To compensate for binges, some bulimics exercise excessively or fast between binges • Vomiting may enlarge salivary glands (causing a chubby face), erode dental enamel, and cause electrolyte imbalance resulting in cardiac failure or kidney problems • Weight usually within 10% of normal • Age of onset is typically 16 to 19 years of age 	<ul style="list-style-type: none"> • Drug treatment, such as antidepressants • Short-term cognitive-behavioral therapy (CBT) to address behavior and attitudes on eating and body shape • Interpersonal psychotherapy (IPT) to improve interpersonal functioning • Tends to be chronic if left untreated
Anorexia Nervosa	<ul style="list-style-type: none"> • Intense fear of obesity and persistent pursuit of thinness; perpetual dissatisfaction with weight loss • Severe caloric restriction, often with excessive exercise and sometimes with purging, to the point of semi-starvation • Severely limiting caloric intake may cause cessation of menstruation, downy hair on limbs and cheeks, dry skin, brittle hair or nails, sensitivity to cold, and danger of acute cardiac or kidney failure • Weight at least 15% below normal • Average age of onset is about 13 years of age 	<ul style="list-style-type: none"> • Hospitalization (at 70% below normal weight) • Outpatient treatment to restore weight and correct dysfunctional attitudes on eating and body shape • Family therapy • Tends to be chronic if left untreated; more resistant to treatment than bulimia
Binge-Eating	<ul style="list-style-type: none"> • Similar to bulimia with out-of-control food binges, but no attempt to purge the food (vomiting, laxatives, diuretics) or compensate for excessive intake • Marked physical and emotional stress; some sufferers binge to alleviate bad moods • Binge eaters share some concerns about weight and body shape as individuals with anorexia and bulimia • Tends to affect more older people than either bulimia or anorexia 	<ul style="list-style-type: none"> • Short-term CBT to address behavior and attitudes on eating and body shape • IPT to improve interpersonal functioning • Drug treatments that reduce feelings of hunger • Self-help approaches

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Disorder	Characteristics	Treatment
Obesity	<ul style="list-style-type: none"> • Up to 65% of U.S. adults are overweight, and over 30% are obese • Worldwide problem; increased risk in urban rather than rural settings • Two forms of maladaptive eating patterns associated with obesity-binge eating and night eating syndrome • Increases risk of cardiovascular disease, diabetes, hypertension, stroke, and other physical problems 	<ul style="list-style-type: none"> • Self-directed weight loss programs • Commercial self-help programs, such as Weight Watchers • Professionally directed behavior modification programs, which are the most effective treatment • Surgery, as a last resort

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Psychological—Affects impulse control, attitudes, and motivation towards eating, and responsiveness to the consequences of eating.

Social—Advancing technology promotes sedentary lifestyle and consumption of high fat foods.

Causes

Biological—Genes influence an individual's number of fat cells, tendency toward fat storage, and activity levels.

Exploring Sleep Disorders

Characterized by extreme disruption in the everyday lives of affected individuals, and are an important factor in many psychological disorders.

SLEEP DISORDERS

Diagnosing Sleep Disorders

A polysomnographic (PSG) evaluation assesses an individual's sleep habits with various electronic tests to measure airflow, brain activity, eye movements, muscle movements, and heart activity. Results are weighed with a measure of sleep efficiency (SE), the percentage of time spent asleep.



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PhotoLibrary

Dyssomnias

Disturbances in the timing, amount, or quality of sleep

Disorder	Characteristics	Causes	Treatment
Primary Insomnia	<ul style="list-style-type: none">Characteristics include difficulty initiating sleep, difficulty maintaining sleep, or nonrestorative sleep	<ul style="list-style-type: none">Causes include pain, insufficient exercise, drug use, environmental influences, anxiety, respiratory problems, and biological vulnerability.	<ul style="list-style-type: none">Treatment may be medical (benzodiazepines) or psychological (anxiety reduction, improved sleep hygiene); combined approach is usually most effective.
Narcolepsy	<ul style="list-style-type: none">Characteristics include sudden daytime onset of REM sleep combined with cataplexy, a rapid loss of muscle tone that can be quite mild or result in complete collapse. Often accompanied by sleep paralysis and/or hypnagogic hallucinations.	<ul style="list-style-type: none">Causes are likely to be genetic.	<ul style="list-style-type: none">Treatment is medical (stimulant drugs).
Primary Hypersomnia	<ul style="list-style-type: none">Characteristics include abnormally excessive sleep and sleepiness, and involuntary daytime sleeping. Classified as a disorder only when it's subjectively perceived as disruptive.	<ul style="list-style-type: none">Causes may involve genetic link and/or excess serotonin.	<ul style="list-style-type: none">Treatment is usually medical (stimulant drugs).
Breathing-Related Sleep Disorder	<ul style="list-style-type: none">Characteristics include disturbed sleep and daytime fatigue resulting from hypoventilation (labored breathing) or sleep apnea (suspended breathing).	<ul style="list-style-type: none">Causes may include narrow or obstructed airway, obesity, and increasing age.	<ul style="list-style-type: none">Treatments to improve breathing are medical or mechanical.
Circadian Rhythm Sleep Disorder	<ul style="list-style-type: none">Characteristics include sleepiness or insomnia.	<ul style="list-style-type: none">Caused by inability to synchronize sleep patterns with current pattern of day and night due to jet lag, shift work, delayed sleep, or advanced sleep (going to bed earlier than normal bedtime).	<ul style="list-style-type: none">Treatment includes phase delays to adjust bedtime and bright light to readjust biological clock.

Parasomnias

Abnormal behaviors that occur during sleep.

Nightmares	Sleep Terrors	Sleepwalking
<p>Frightening REM dreams that awaken the sleeper. Nightmares qualify as nightmare disorder when they are stressful enough to impair normal functioning. Causes are unknown, but they tend to decrease with age.</p>	<p>Occur during non-REM (nondreaming) sleep and most commonly afflict children. Sleeping child screams, cries, sweats, sometimes walks, has rapid heartbeat, and cannot easily be awakened or comforted. More common in boys than girls, and possible genetic link since tend to run in families. May subside with time.</p>	<p>Occurs at least once during non-REM sleep in 15% to 30% of children under age 15. Causes may include extreme fatigue, sleep deprivation, sedative or hypnotic drugs, and stress. Adult sleepwalking is usually associated with other psychological disorders. May have a genetic link.</p>



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CHAPTER 9

Sexual and Gender Identity Disorders

Chapter Outline

What Is Normal Sexuality?

- Gender Differences
- Cultural Differences
- The Development of Sexual Orientation

Gender Identity Disorder

- Defining Gender Identity Disorder
- Causes
- Treatment

An Overview of Sexual Dysfunctions

- Sexual Desire Disorders
- Sexual Arousal Disorders
- Orgasm Disorders
- Sexual Pain Disorders
- Assessing Sexual Behavior

Causes and Treatment of Sexual Dysfunction

- Causes of Sexual Dysfunction
- Treatment of Sexual Dysfunction

Paraphilia: Clinical Descriptions

- Fetishism
- Voyeurism and Exhibitionism
- Transvestic Fetishism
- Sexual Sadism and Sexual Masochism
- Pedophilia and Incest
- Paraphilia in Women
- Causes of Paraphilia

Assessing and Treating Paraphilia

- Psychological Treatment
- Drug Treatments
- Summary



Abnormal Psychology Live Videos

- Erectile Dysfunction: Clark
- Changing Over: Jessica
- Web Link



Student Learning Outcomes*

Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology:

› Biological bases of behavior and mental processes, including physiology, sensation, perception, comparative, motivation, and emotion (APA SLO 1.2.a (3)) (see textbook pages 348–351)

Use the concepts, language, and major theories of the discipline to account for psychological phenomena.

› Describe behavior and mental processes empirically, including operational definitions (APA SLO 1.3.a) (see textbook pages 335–347, 355–359)

Identify appropriate applications of psychology in solving problems, such as:

› Origin and treatment of abnormal behavior (APA SLO 4.2.b) (see textbook pages 336–340, 347–354, 359–363)
› Psychological tests and measurements (APA SLO 4.2.c) (see textbook pages 347–348)

*Portions of this chapter cover learning outcomes suggested by the American Psychological Association (2007) in their guidelines for the undergraduate psychology major. Chapter coverage of these outcomes is identified by APA Goal and APA Suggested Learning Outcome (SLO).

What Is Normal Sexuality?

› How do sociocultural factors influence what are considered “normal” sexual behaviors?

You have all read magazine surveys reporting sensational information on sexual practices. According to one, men can reach orgasm 15 or more times a day (in reality, such ability is rare) and women fantasize about being raped. (Women do have idealized fantasies of submission in the context of being desired, but these fantasies are far from imagining an actual rape [Critelli & Bivona, 2008].) Surveys like this fail us on two counts: First, they claim to reveal sexual norms but they are reporting mostly distorted half-truths. Second, the facts they present typically are not based on any scientific methodology that would make them reliable, although they do sell magazines.

What is normal sexual behavior? As you will see, it depends. More to the point, when is sexual behavior that is somewhat different from the norm a disorder? Again, it depends. Current views tend to be quite tolerant of a variety of sexual expressions, even if they are unusual, unless the behavior is associated with a substantial impairment in functioning or involves nonconsenting individuals such as children. Three kinds of sexual behavior meet this definition. In *gender identity disorder*, there is psychological dissatisfaction with one's biological sex. The disorder is not specifically sexual but rather a disturbance in the person's sense of identity as a male or a female. But these disorders are often grouped with sexual disorders. Individuals with *sexual dysfunction* find it difficult to function adequately while having sex; for example, they may not become aroused or achieve orgasm. And *paraphilia*, the relatively new term for sexual deviation, includes disorders in which sexual arousal occurs primarily in the context of inappropriate objects or individuals. *Philia* refers to a strong attraction or liking, and *para* indicates the attraction is abnormal. Paraphilic arousal patterns tend to be focused rather narrowly, often precluding mutually consenting adult partners, even if desired. Before describing these three types of disorders, we return to our initial question,

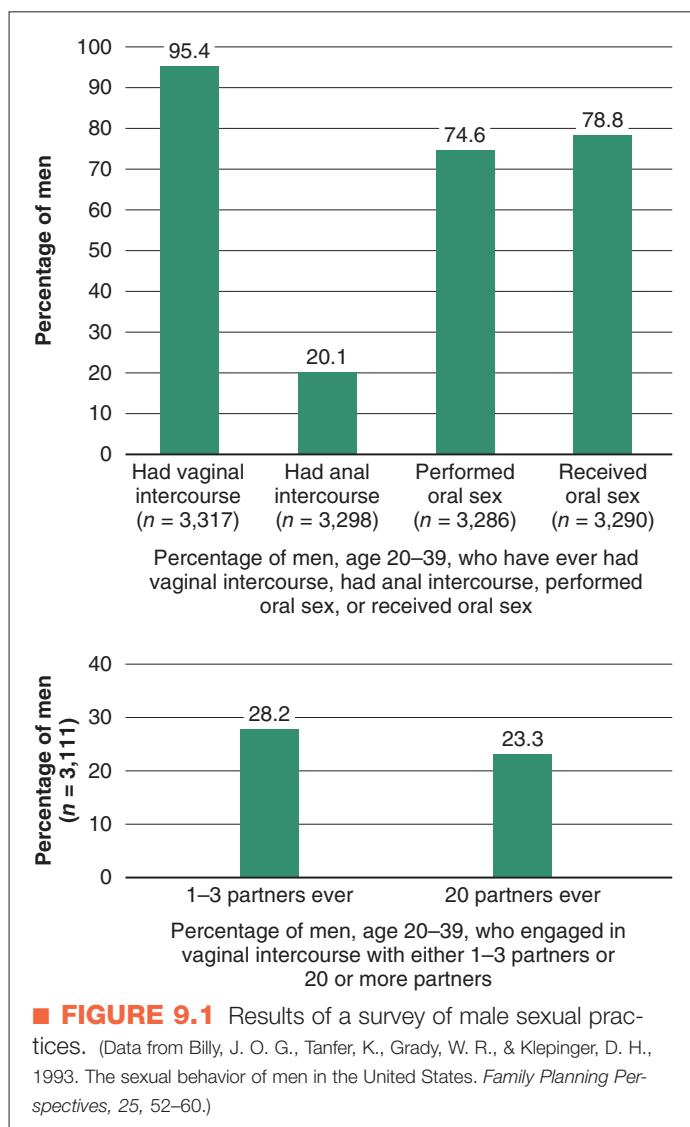
“What is normal sexual behavior?” to gain an important perspective.

Determining the prevalence of sexual practices accurately requires careful surveys that randomly sample the population. In a scientifically sound survey, Billy, Tanfer, Grady, and Klepinger (1993) reported data from 3,321 men in the United States age 20 to 39. The participants were interviewed, which is more reliable than having them fill out a questionnaire, and the responses were analyzed in detail. The purpose of this survey was to ascertain risk factors for sexually transmitted diseases, including AIDS. Some of the data are presented in ■ Figure 9.1. The most recent survey from the National Health and Nutrition Examination Survey sponsored by the Centers for Disease Control and Prevention (CDC) was reported in June 2007 (Fryar et al., 2007). More than 6,000 men and women participated in this study, which provides some updated data, although the areas of sexual behavior sampled were more limited.

Virtually all men studied by Billy and colleagues and in the CDC study were sexually experienced, with vaginal intercourse a nearly universal experience, even for those who had never been married. Three fourths of the men in the study by Billy and colleagues also engaged in oral sex, but only one fifth had ever engaged in anal sex, a particularly high-risk behavior for AIDS transmission, and half of these had not had anal sex in the previous year and a half. Slightly more troublesome is the finding that 23.3% had had sex with 20 or more partners, another high-risk behavior. Then again, more than 70% had had only one sexual partner during the previous year, and fewer than 10% had had four or more partners during the same period. The CDC study reports similar figures, with 29% of men having sex with 15 or more partners during their lifetime (compared to 9% of women).

A surprising finding from Billy and colleagues is that the overwhelming majority of the men had engaged exclu-





sively in **heterosexual behavior** (sex with the opposite sex). Only 2.3% had also engaged in **homosexual behavior** (sex with the same sex), and only 1.1% engaged exclusively in homosexual activity. But if same-sex attractions are included in addition to behavior, another sophisticated survey found that nearly 9% of women and 10% of men reported some homosexual attractions or behavior. For adolescents, 5% of male teenagers and 11% of female teenagers report some homosexual behavior (Diamond, Butterworth, & Savin-Williams, 2011; Mosher, Chandra, & Jones, 2005). But this is mostly in addition to heterosexual behavior, and most of these teenagers identify as heterosexual (Diamond et al., 2011).

One study from Britain (Johnson, Wadsworth, Wellings, Bradshaw, & Field, 1992) and one from France (Spira et al., 1992) surveyed sexual behavior and practices among more than 20,000 men and women in each country. The results were surprisingly similar to those reported for American men. More than 70% of the respondents from all age groups in the British and French studies reported no more than one sexual partner during the past year. Women

were somewhat more likely than men to have had fewer than two partners. Only 4.1% of French men and 3.6% of British men reported ever having had a male sexual partner, and this figure drops to 1.5% for British men if we consider only the last 5 years. Almost certainly, the percentage of males engaging exclusively in homosexual behavior would be considerably lower. The consistency of these data across three countries suggests strongly that the results represent something close to the norm, at least for Western countries. Also interesting is that sexual practices and the determinants of sexual satisfaction are now remarkably similar around the world, as recently demonstrated in a large survey of Chinese urban adults (Parish et al., 2007).

Another interesting set of data counters the many views we have of sexuality among older adults. Sexual behavior can continue well into old age, even past 80 for some people. Notably, 50% of men and 36% of women age 75 to 79 were sexually active. Reasons for the discrepancy between men and women are not clear, although given the earlier mortality of men, many older women lack a suitable partner; it is also possible that some women are married to men in an older age bracket. The sample of individuals older than age 80 is too small to allow meaningful conclusions, although many remained sexually active. Decreases in sexual activity are mostly correlated with decreases in general mobility and various disease processes and consequent medication, which may reduce arousal. Furthermore, the speed and intensity of various vasocongestive responses decrease with age.

Gender Differences

Although both men and women tend toward a monogamous (one partner) pattern of sexual relationships, gender differences in sexual behavior do exist, and some of them are dramatic. Most recently, Petersen and Hyde (2010) reported a sophisticated analysis summarizing results from hundreds of studies examining gender differences in sexual attitudes and behaviors. One common finding among sexual surveys is a much higher percentage of men than women report that they masturbate (self-stimulate to orgasm) (Oliver & Hyde, 1993; Peplau, 2003; Petersen & Hyde, 2010). When Leitenberg, Detzer, and Srebnik (1993) surveyed 280 university students, they also found this discrepancy (81% of men versus only 45% of women reported ever masturbating) even though for 25 years prior women had been encouraged to take more responsibility for their own sexual fulfillment and to engage in more sexual self-exploration.

Among those who did masturbate, the frequency was about 3 times greater for men than for women and had been throughout adolescence. Masturbation was not related to later sexual functioning—that is, whether individuals masturbated or not during adolescence had no influence on whether they had experienced intercourse, the frequency of intercourse, the number of partners, or other factors reflecting sexual adjustment.



Ryuei Shindo/PhotoLibrary

▲ Sexual behavior often continues well into old age.

Why women masturbate less frequently than men puzzles sex researchers, particularly when other long-standing gender differences in sexual behavior, such as the probability of engaging in premarital intercourse, have virtually disappeared (Clement, 1990; Petersen & Hyde, 2010). One traditional view accounting for differences in masturbatory behavior is that women have been taught to associate sex with romance and emotional intimacy, whereas men are more interested in physical gratification. But the discrepancy continues despite decreases in gender-specific attitudes toward sexuality. A more likely reason is anatomical. Because of the nature of the erectile response in men and their relative ease in providing sufficient stimulation to reach orgasm, masturbation may simply be more convenient for men than for women. This may explain why gender differences in masturbation are also evident in primates and other animals (Ford & Beach, 1951). In any case, incidence of masturbation continues to be the largest gender difference in sexuality.

Another continuing gender difference is reflected in the incidence of casual sex, attitudes toward casual premarital sex, and pornography use, with men expressing more permissive attitudes and behaviors than women. The most current term for casual sex, particularly among college students, is “hooking up,” which refers specifically to a range of physically intimate behavior outside of a committed relationship (Owen, Rhoades, Stanley, & Fincham, 2010). Studies of “hooking up” demonstrate similar findings to older studies of casual sex, in that it is often precipitated by alcohol and women are less likely to consider it a positive experience than men. “Friends with benefits” is

another popular term among college students for casual sex but in the context of an ongoing relationship (Bisson & Levine, 2009).

By contrast, results from a large number of studies suggest that *no* gender differences are currently apparent in attitudes about homosexuality (generally acceptable), the experience of sexual satisfaction (important for both), or attitudes toward masturbation (generally accepting). Small to moderate gender differences were evident in attitudes toward premarital intercourse when the couple was engaged or in a committed relationship (with men more approving than women) and in attitudes toward extramarital sex (sex outside of the marital relationship, which men also approved of more than women). As in the British and French studies, the number of sexual partners and the frequency of intercourse were slightly greater for men, and men were slightly younger at age of first sexual intercourse. Examining trends from 1943 to 1999, we find that almost all existing gender differences became smaller over time, especially in regard to attitudes toward premarital sex. Specifically, only 12% of young women approved of premarital sex in 1943 compared to 73% in 1999. The figures for men were 40% in 1943 and 79% in 1999 (Wells & Twenge, 2005). More recently, in the late 1990s and after 2000, investigators have noted a *decrease* in number of sexual partners and a tendency to delay sexual intercourse among adolescent boys, perhaps because of a fear of AIDS. Few changes over this time period were noted for adolescent girls (Petersen & Hyde, 2010).

Although they are decreasing, differences still exist between men and women in sexual behavior and attitudes toward sexuality (Peplau, 2003; Petersen & Hyde, 2010). For example, differences seem to exist in patterns of sexual arousal (Chivers, Rieger, Latty, & Bailey, 2004). Men are more specific and narrow in their patterns of arousal—that is, heterosexual men are aroused by female sexual stimuli but not male sexual stimuli. For gay men, it’s the opposite. Men with gender identity disorder (discussed later) who had surgery to become female retained this specificity (attracted to males but not females). Females, however, whether heterosexual or lesbian, experience arousal to both male and female sexual stimuli, demonstrating a broader, more general pattern of arousal.

In an impressive series of studies, Barbara Andersen and her colleagues have assessed gender differences in basic or core beliefs about sexual aspects of one’s self. These core beliefs about sexuality are referred to as “sexual self-schemas.” Specifically, in a series of studies (Andersen & Cyranowski, 1994; Andersen, Cyranowski, & Espindle, 1999; Cyranowski, Aarestad, & Andersen, 1999), Andersen

heterosexual behavior Sexual activity with members of the opposite gender.

homosexual behavior Sexual activity with members of the same gender.

and colleagues demonstrated that women tend to report the experience of passionate and romantic feelings as an integral part of their sexuality and an openness to sexual experience. However, a substantial number of women also hold an embarrassed, conservative, or self-conscious schema that sometimes conflicts with more positive aspects of their sexual attitudes. Men, however, show a strong component of feeling powerful, independent, and aggressive as part of their sexuality, in addition to being passionate, loving, and open to experience. Also, men do not generally possess negative core beliefs reflecting self-consciousness, embarrassment, or feeling behaviorally inhibited.

Peplau (2003) summarizes research to date on gender differences in human sexuality as highlighting four themes: (1) men show more sexual desire and arousal than women; (2) women emphasize committed relationships as a context for sex more than men; (3) men's sexual self-concept, unlike women's, is characterized partly by power, independence, and aggression; and (4) women's sexual beliefs are more "plastic" in that they are more easily shaped by cultural, social, and situational factors. For example, women are more likely to change sexual orientation over time (Diamond, 2007; Diamond et al., 2011) or may be more variable in frequency of sex, alternating periods of high frequency with low frequency if a sexual partner leaves.

What happened to the sexual revolution? Where are the effects of the "anything goes" attitude toward sexual expression and fulfillment that supposedly began in the 1960s and 1970s? Clearly there has been some change. The double standard has disappeared, in that most women no longer feel constrained by a stricter and more conservative social standard of sexual conduct. The sexes are definitely drawing together in their attitudes and behavior, although some differences in attitudes, core beliefs, and behavior remain. Regardless, the overwhelming majority of individuals engage in heterosexual, vaginal intercourse in the context of a relationship with one partner. Based on these data, the sexual revolution may be largely a creation of the media, focusing as it does on extreme or sensational cases. In fact, what appeals to us sexually seems to have strong evolutionary roots that foster propagation of the species. For example, men with "attractive" (to women) faces have higher sperm quality. Women with "attractive" (to men) bodies are more fertile; and both men and women with "attractive" voices lose their virginity sooner (Gallup & Frederick, 2010). Thus sexual attraction (and behavior) is closely tied to evolutionary mandates reflecting the importance of this behavior for the species.

Cultural Differences

What is normal in Western countries may not necessarily be normal in other parts of the world (McGoldrick, Loonan, & Wohlsifer, 2007). The Sambia in Papua New Guinea believe semen is an essential substance for growth and development in young boys of the tribe. They also believe semen is *not* produced naturally—that is, the body is incapable of

producing it spontaneously. Therefore, all young boys in the tribe, beginning at approximately age 7, become semen recipients by engaging exclusively in homosexual oral sex with teenage boys. Only oral sexual practices are permitted; masturbation is forbidden and absent. Early in adolescence, the boys switch roles and become semen providers to younger boys. Heterosexual relations and even contact with the opposite sex are prohibited until the boys become teenagers. Late in adolescence, the boys are expected to marry and begin exclusive heterosexual activity. And they do, with no exceptions (Herdt, 1987; Herdt & Stoller, 1989). By contrast, the Munda of northeast India require adolescents and children to live together. But in this group, both male and female children live in the same setting, and the sexual activity, consisting mostly of petting and mutual masturbation, is all heterosexual (Bancroft, 1989).

In about half of more than 100 societies surveyed worldwide, premarital sexual behavior is culturally accepted and encouraged; in the remaining half, premarital sex is unacceptable and discouraged (Bancroft, 1989; Broude & Greene, 1980). Thus, what is normal sexual behavior in one culture is not necessarily normal in another, and the range of sexual expression must be considered in diagnosing the presence of a disorder.

The Development of Sexual Orientation

Reports suggest that homosexuality runs in families (Bailey & Benishay, 1993), and concordance for homosexuality is more common among identical twins than among fraternal twins or natural siblings. In two well-done twin studies, homosexual orientation was shared in approximately 50% of identical twins, compared with 16% to 22% of fraternal twins. Approximately the same or a slightly lower percentage of nontwin brothers or sisters were gay (Bailey & Pillard, 1991; Bailey, Pillard, Neale, & Agyei, 1993; Whitnam, Diamond, & Martin, 1993). Sophisticated studies on the causes of homosexual behavior reveal that in men, genetic effects explain from 34% to 39% of the cause, and in women 18% to 19%, with the remainder accounted for by environmental influences (Långström, Rahman, Carlström, & Lichtenstein, 2010). Remember from Chapter 2 that environmental influences might include unique biological experiences—for example, differential hormone exposure in utero (before birth). Other reports indicate that homosexuality and also gender atypical behavior during childhood is associated with differential exposure to hormones, particularly atypical androgen levels in utero (Auyeng et al., 2009; Ehrhardt et al., 1985; Gladue, Green, & Hellman, 1984; Hershberger & Segal, 2004) and that the actual structure of the brain might be different in individuals with homosexual as compared to heterosexual arousal patterns (Allen & Gorski, 1992; Byne et al., 2000; LeVay, 1991).

Several findings lend some support to the theory of differential hormone exposure in utero. One is the observation that individuals with homosexual orientations have a 39% greater chance of being non-right handed (left

handed or mixed handed) than those with heterosexual orientations (Lalumière, Blanchard, & Zucker, 2000), although these findings were not replicated in a later study (Mustanski, Bailey, & Kaspar, 2002). There is also the finding that gay/bisexual men are significantly shorter and lighter than heterosexual men, though no differences were found for women (Bogart, 2010). Another is the intriguing findings that heterosexual males and masculine (“butch”) lesbians tend to have a longer fourth (“ring”) finger than index finger but that heterosexual females and gay males show less of a difference or even have a longer second finger than fourth finger (Brown, Finn, Cooke, & Breedlove, 2002; Hall & Love, 2003), although this finding seems to be influenced by ethnic group membership (Loehlin, McFadden, Medland, & Martin, 2006; McFadden et al., 2005). Yet another report had suggested a possible gene (or genes) for homosexuality on the X chromosome (Hamer, Hu, Magnuson, Hu, & Pattatucci, 1993).

The principal conclusion drawn in the media is that sexual orientation has a biological cause. Gay rights activists are decidedly split on the significance of these findings. Some are pleased with the biological interpretation because people can no longer assume gays have made a morally depraved choice of supposedly deviant arousal patterns. Others, however, note how quickly the public has pounced on the implication that something is biologically wrong with individuals with homosexual arousal patterns, assuming that someday the abnormality will be detected in the fetus and prevented, perhaps through genetic engineering.

Do such arguments over biological causes sound familiar? Think back to studies described in Chapter 2 that attempted to link complex behavior to particular genes. In almost every case, these studies could not be replicated and investigators fell back on a model in which genetic contributions to behavioral traits and psychological disorders come from many genes, each making a relatively small contribution to a *vulnerability*. This generalized biological vulnerability then interacts in a complex way with various environmental conditions, personality traits, and other contributors to determine behavioral patterns. We also discussed reciprocal gene–environment interactions

in which certain learning experiences and environmental events may affect brain structure and function and genetic expression.

The same thing is now happening with sexual orientation. For example, neither Bailey and colleagues (1999) nor Rice, Anderson, Risch, and Ebers (1999) in later studies could replicate the report suggesting a specific gene for homosexuality (Hamer et al., 1993). Most theoretical models outlining these complex interactions for sexual orientation imply that there may be many pathways to the development of heterosexuality or homosexuality and that no one factor—biological or psychological—can predict the outcome (Bancroft, 1994; Byne & Parsons, 1993). It is likely, too, that different types of homosexuality (and, perhaps, heterosexuality), with different patterns of cause, may be discovered (Diamond et al., 2011; Savin-Williams, 2006).

One of the more intriguing findings from the twin studies of Bailey and his colleagues is that approximately 50% of the identical twins with exactly the same genetic structure and the same environment (growing up in the same house) *did not* have the same sexual orientation (Bailey & Pillard, 1991). Also intriguing is the finding in a study of 302 gay males that those growing up with older brothers are more likely to be gay, whereas having older sisters, or younger brothers or sisters, is not correlated with later sexual orientation. This study found that each additional older brother increased the odds of being gay by one third. This finding, which has been replicated several times and is referred to as the “fraternal birth order hypothesis,” may suggest the importance of environmental influences, although the mechanism has not been identified (Blanchard, 2008; Blanchard & Bogaert, 1996, 1998; Cantor, Blanchard, Paterson, & Bogaert, 2002).

In any case, the simple one-dimensional claims that homosexuality is caused by a gene or that heterosexuality is caused by healthy early developmental experiences will continue to appeal to the general population. Neither explanation is likely to be proved correct. Almost certainly, biology sets certain limits within which social and psychological factors affect development (Diamond, 1995; Diamond et al., 2011; Långström et al., 2010).

Gender Identity Disorder

› What are the defining clinical features, causes, and treatments of gender identity disorder?

What is it that makes you think you are a man? Or a woman? Clearly, it's more than your sexual arousal patterns or your anatomy. It's also more than the reactions and experiences of your family and society. The essence of your masculinity or femininity is a deep-seated personal sense called gender identity. **Gender identity disorder** is present if a person's physical gender is not consistent with the person's sense of identity. People with this disorder feel

trapped in a body of the wrong sex. Consider the case of Joe.

gender identity disorder A psychological dissatisfaction with biological gender, or a disturbance in the sense of identity as a male or female. The primary goal is not sexual arousal but rather to live the life of the opposite gender.

Joe • Trapped in the Wrong Body

Joe was a 17-year-old male and the last of five children. Although his mother had wanted a girl, he became her favorite child. His father worked long hours and had little contact with the boy. For as long as Joe could remember, he had thought of himself as a girl. He began dressing in girls' clothes of his own accord before he was 5 years old and continued cross-dressing into junior high school. He developed interests in cooking, knitting, crocheting, and embroidering, skills he acquired by reading an encyclopedia.

Joe associated mostly with girls during this period, although he remembered being strongly attached to a boy in the first grade. In his sexual fantasies, which developed around 12 years of age, he pictured himself as a female having intercourse with a male. His extremely effeminate behavior made him the object of scorn and ridicule when he entered high school at age 15. Usually passive and unassertive, he ran away from home and attempted suicide. Unable to continue in high school, he attended secretarial school, where he was the only boy in his class. During his first interview with a therapist, he reported, "I am a woman trapped in a man's body and I would like to have surgery to become a woman."

Defining Gender Identity Disorder

Gender identity disorder (or *transsexualism*, as it used to be called) must be distinguished from transvestic fetishism, a paraphilic disorder (discussed later) in which individuals, usually males, are sexually aroused by wearing articles of clothing associated with the opposite sex. There is an occasional preference on the part of the male with transvestite patterns of sexual arousal for the female role, but the primary purpose of cross-dressing is sexual gratification. In the case of gender identity disorder, the primary goal is not sexual gratification but rather the desire to live life openly in a manner consistent with that of the other gender.

Gender identity disorder must also be distinguished from *intersex individuals (hermaphrodites)*, who are born with ambiguous genitalia associated with documented hormonal or other physical abnormalities. Depending on their particular mix of characteristics, hermaphrodites are usually "assigned" to a specific sex at birth, sometimes undergoing surgery and hormonal treatments, to alter their sexual anatomy. Individuals with gender identity disorder, by contrast, have no demonstrated physical abnormalities. Finally, gender identity disorder must be distinguished from the same-sex arousal patterns of a male who sometimes behaves effeminately or a woman with same-sex arousal patterns and masculine mannerisms. Such an individual does not feel like a woman trapped in a man's body or have any desire to be a woman, or vice versa. Note also,

as the *DSM-IV-TR* criteria do, that gender identity is independent of sexual arousal patterns (Savin-Williams, 2006). For example, a male-to-female transsexual (a biological male with a feminine gender identity) may be sexually attracted to females. Similarly, Eli Coleman and his associates (Coleman, Bockting, & Gooren, 1993) reported on nine female-to-male cases in which the individuals were sexually attracted to men. Thus, heterosexual women before surgery were gay men after surgery. Chivers and Bailey (2000) compared a group of female-to-male individuals who were attracted to men (a rare occurrence) to a group of female-to-male individuals who were attracted to women (the usual pattern) both before and after surgery. They found the groups did not differ in the strength of their gender identity (as males), although the latter group was more sexually assertive and, understandably, more interested in surgery to create an artificial penis.

Gender identity disorder is relatively rare. The estimated incidence based on studies in Sweden, Australia, and the Netherlands is 1 in 37,000 in Sweden, 1 in 24,000 in Australia, and 1 in 11,000 in the Netherlands for biological males, compared to 1 in 103,000 in Sweden, 1 in 150,000 in Australia, and 1 in 30,000 in the Netherlands for biological females (Baker, van Kesteren, Gooren, & Bezemer, 1993; Ross, Walinder, Lundstrom, & Thuwe, 1981; Sohn & Bosinski, 2007). These numbers reflect the fact that gender identity disorder occurs approximately 3 times more frequently in males than in females (American Psychological Association Task Force on Gender Identity and Gender Variance, 2008). Many countries now require a series of legal steps to change gender identity. In Germany, between 2.1 and 2.4 per 100,000 in the population took at least the first legal step of changing their first names in the 1990s; in that country, the male:female ratio of people with gender identity disorder is 2.3:1 (Weitze & Osburg, 1996). In some cultures, individuals with mistaken gender identity are often accorded the status of "shaman" or "seer" and treated as wisdom figures. A shaman is almost always a male adopting a female role (see, for example, Coleman, Colgan, & Gooren, 1992). Stoller (1976) reported on two contemporary feminized Native American men who were not only accepted, but also esteemed by their tribes for their expertise in healing rituals. Contrary to the respect accorded these individuals in some cultures, social tolerance for them is relatively low in Western cultures, where they are the objects of curiosity at best and derision at worst.

Causes

Research has yet to uncover any specific biological contributions to gender identity disorder, although it seems likely that a biological predisposition will be discovered. Coolidge, Thede, and Young (2002) estimated that genetics contributed about 62% to creating a vulnerability to experience gender identity disorder in their twin sample. Thirty-eight percent of the vulnerability came from nonshared (unique) environmental events. A recent study from the



Lesbian, gay, bisexual, and transgender (LGBT) issues have come to the forefront of discussion in the United States in response to recent events including suicides in response to school bullying and debate over gay marriage rights. Although the “L,” “G,” and “B” are more often included, the “T” is sometimes left out of the conversation, perhaps because of a lack of understanding or confusion over this group. Transgender is an umbrella term for someone with unconventional gender expression (i.e., not identifying with their physical sex at birth). Such individuals are recognized differently across cultures.

In Western culture it is believed that people are firmly male or female. Therefore, transgendered individuals are considered to have gender identity disorder and are required to fully assert their identity with their non-birth gender before being approved for sex reassignment surgery. Interestingly, in many cultures around the world, gender is not fixed as only male or female, but a mix or alternative gender expression is accepted. Take for instance “hijras” in India or “kathoeys” or “ladyboys” in Thailand. In both of these

groups, the biological male dresses in women’s clothing and identifies with femininity; such individuals are accepted by their society as a third gender. For instance, the hijras, who are considered “neither man, nor woman” (Nanda, 1999), may have actually had castration surgery, receive religious and cultural legitimacy through Hindu mythology (e.g., travestism existed before the conception of mankind), and are believed by some to have divine power (Bakshi, 2004). In fact, hijras serve a special function within their culture, performing at weddings and birth rituals, and their behavior is considered to be natural. Similarly kathoeys, biological males with what the Thai refer to as a “female heart,” are recognized as a third gender. In some places, these individuals even have been given their own restroom with a symbol on the door of a human divided in half with a blue side wearing pants and a red side dressed in a skirt (Beech, 2008). Whereas those within Western cultures believe that people are fully male or female and places such as India and Thailand accept hijras and kathoeys as a third sex, other cultures completely fail to accept transgendered

individuals. For example, in Iran being transsexual can result in death, as was the case with a 24-year-old transsexual woman (born a male and underwent sex reassignment surgery) who was found strangled to death by her own brothers. The brothers confessed to killing their sister due to “opposing her immorality.” This form of murder, known as an “honor killing” is performed in defense of family “dishonor.” Iranian laws currently concede to this behavior, and the brothers in this case will serve only 1 to 3 years in jail for murder (Littauer, 2010).

Although the understanding and treatment of transgendered individuals varies across cultures, LGBT individuals receive international support through recognition events such as “National Coming Out Day” (NCOD; Human Rights Campaign). NCOD, October 11th, is a civil awareness day for discussion and pride in “coming out” for gays, lesbians, bisexuals, and transgendered individuals in the United States, Australia, Canada, Croatia, Germany, New Zealand, and the United Kingdom (celebrated on Oct. 12 in the United Kingdom).

Netherlands twin registry suggested that 70% of the vulnerability for cross-gender behavior (behaving in a manner consistent with the opposite biological sex) was genetic as opposed to environmental, but this behavior is not the same as gender identity, which was not measured (as explained later) (van Beijsterveldt, Hudziak, & Boomsma, 2006). Gomez-Gil et al. (2010) found a somewhat higher prevalence of gender identity disorder than would be expected by chance in nontwin siblings of a larger group (995) of individuals with gender identity disorder. Segal (2006), however, found two monozygotic (identical) female twin pairs in which one twin had gender identity disorder and the other did not; no unusual medical or life history factors were identified to account for this difference. Nevertheless, genetic contributions are clearly part of the picture.

Early research suggested that, as with sexual orientation, slightly higher levels of testosterone or estrogen at certain critical periods of development might masculinize a female fetus or feminize a male fetus (see, for example, Gladue et al., 1984; Keefe, 2002). Variations in hormonal levels could occur naturally or because of medication that a pregnant mother is taking. Scientists have studied girls

DSM Disorder Criteria Summary Gender Identity Disorder

- A strong and persistent cross-gender identification (not merely a desire for any perceived cultural advantages of being the other sex).
- Persistent discomfort with his or her sex or sense of inappropriateness in the gender role of that sex.
- The disturbance is not concurrent with a physical intersex condition.
- The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Source: Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

age 5 to 12 with an intersex condition known as congenital adrenal hyperplasia (CAH). In CAH the brains of these chromosomal females are flooded with male hormones (androgens), which, among other results, produce mostly

masculine external genitalia, although internal organs (ovaries and so on) remain female. Meyer-Bahlburg and colleagues (2004) studied 15 girls with CAH who had been correctly identified as female at birth and raised as girls and looked at their development. Compared to groups of girls and boys without CAH, the CAH girls were masculine in their behavior, but there were no differences in gender identity. Thus, scientists have yet to establish a link between prenatal hormonal influence and later gender identity, although it is still possible that one exists. At least some evidence suggests that gender identity firms up between 18 months and 3 years of age (Ehrhardt & Meyer-Bahlburg, 1981; Money & Ehrhardt, 1972) and is relatively fixed after that. But newer studies suggest that possible preexisting biological factors have already had their impact. One interesting case illustrating this phenomenon was originally reported by Green and Money (1969), who described the sequence of events that occurred in the case of Bruce/Brenda. There do seem to be other case studies of children whose gender was reassigned at birth who adapted successfully (see, for example, Gearhart, 1989), but it certainly seems that biology expressed itself in Bruce's case.

Bruce/Brenda • Gender vs. Biology

A set of male identical twins was born into a well-adjusted family. Several months later, an unfortunate accident occurred. Although circumcision went routinely for one of the boys, the physician's hand slipped so that the electric current in the device burned off the penis of the second baby. After working through their hostility toward the physician, the parents consulted specialists in children with intersexual problems and were faced with a choice. The specialists pointed out that the easiest solution would be to reassign their son Bruce as a girl, and the parents agreed. At the age of several months, Bruce became "Brenda." The parents purchased a new wardrobe and treated the child in every way possible as a girl. These twins were followed through childhood and, upon reaching puberty, the young girl was given hormonal replacement therapy. After 6 years, the doctors lost track of the case but assumed the child had adjusted well. However, Brenda endured almost intolerable inner turmoil. We know this because two clinical scientists found this individual and reported a long-term follow-up (Diamond & Sigmundson, 1997). Brenda never adjusted to her assigned gender. As a child, she preferred rough-and-tumble play and resisted wearing girls' clothes. In public bathrooms, she often insisted on urinating while standing up, which usually made a mess. By early adolescence, Brenda was pretty sure she was a boy, but her doctors pressed her to act more feminine. When she was 14 she confronted her parents, telling them she was so miserable she was considering suicide. At that point

they told her the true story and the muddy waters of her mind began to clear. Shortly thereafter, Brenda had additional surgery changing her back to Bruce, who married and became the father of three adopted children. But the turmoil of his early life never fully resolved. Perhaps because of this, perhaps because his twin brother had recently died and he had lost his job and was divorcing, or perhaps because of a combination of these factors, David Reimer (his real name) committed suicide at age 38 in 2004.



Fred Greenslade/©Reuters/Corbis

▲ After gender reassignment as a baby and subsequently being raised as a girl, David Reimer reclaimed his male gender identity in his teens and lived his life as a man. He spoke out against infant gender reassignment until his death in 2004.

Richard Green, a pioneering researcher in this area, has studied boys who behave in feminine ways and girls who behave in masculine ways, investigating what makes them that way and following what happens to them (Green, 1987). This set of behaviors and attitudes is referred to as **gender nonconformity** (see, for example, Skidmore, Linsenmeier, & Bailey, 2006). Green discovered that when most young boys spontaneously display "feminine" interests and behaviors, they are typically discouraged by most families and these behaviors usually cease. However, boys who consistently display these behaviors are not discouraged and are sometimes encouraged.

Other factors, such as excessive attention and physical contact on the part of the mother, may also play some role, as may a lack of male playmates during the early years of socialization. These are just some factors identified by Green as characteristic of gender-nonconforming boys. Remember that as-yet-undiscovered biological factors may also contribute to the spontaneous display of cross-gender behaviors and interests. For example, one recent study found that exposure to higher levels of fetal testosterone was associated with more masculine play behavior in both boys and girls during childhood (Auyeng et al., 2009). However, in following up these boys, Green discovered that few seem to develop the "wrong" gen-

der identity. The most likely outcome is the development of homosexual preferences, but even this particular sexual arousal pattern seems to occur exclusively in only approximately 40% of the gender-nonconforming boys. Another 32% show some degree of *bisexuality*, sexual attraction to both their own and the opposite sex. Looking at it from the other side, 60% were functioning heterosexually.

These results were replicated in subsequent prospective studies of boys (Zucker, 2005). Girls with gender-nonconforming behavior are seldom studied because their behavior attracts much less attention in Western societies. But one recent study followed 25 girls prospectively, beginning at approximately 9 years of age, whose behavior was extreme enough that they were referred to a gender identity clinic. Most of these girls met criteria for childhood gender identity disorder or came very close to it. At a follow-up when these girls (now women) averaged 25 years of age, only three met criteria for gender identity disorder. Another six reported bisexual/homosexual behavior; eight more would have homosexual fantasies but not behavior. The remaining eight women were heterosexual (Drummond, Bradley, Peterson-Badali, & Zucker, 2008).

This finding of only a very loose relationship between gender-nonconforming behavior and later sexual development is not unique to American culture. For example, similar relationships between early gender-nonconforming behavior and later development exist among the Fa'aafafine, a group of males with homosexual orientation in the Pacific Islands country of Samoa (Bartlett & Vasey, 2006). And even in strict Muslim societies where any hint of gender-nonconforming behavior is severely discouraged, gender-nonconforming behavior, gender identity disorder, or both may develop (Dogăn & Dogăn, 2006). We can safely say that the causes of mistaken gender identity are still something of a mystery.

Treatment

Treatment is available for gender identity disorder in a few specialty clinics around the world, although much controversy surrounds treatment (Carroll, 2007). At present, the most common decision is to alter the anatomy physically to be consistent with the identity through **sex reassignment surgery**. Recently, psychosocial treatments to directly alter gender identity to match physical anatomy itself have been attempted in a few cases.

Sex Reassignment Surgery

To qualify for surgery at a reputable clinic, individuals must live in the opposite-sex role for 1 to 2 years so that they can be sure they want to change sex. They also must be stable psychologically, financially, and socially. In male-

to-female candidates, hormones are administered to promote *gynecomastia* (the growth of breasts) and the development of other secondary sex characteristics. Facial hair is typically removed through electrolysis. If the individual is satisfied with the events of the trial period, the genitals are removed and a vagina is constructed.

For female-to-male transsexuals, an artificial penis is typically constructed through plastic surgery, using sections of skin and muscle from elsewhere in the body, such as the thigh. Breasts are surgically removed. Genital surgery is more difficult and complex in biological females. Estimates of transsexuals' satisfaction with surgery indicate predominantly successful adjustment (approximately 75% improved) among those who could be reached for follow-ups, with people who undergo female-to-male conversions generally adjusting better than those who make male-to-female transitions (Bancroft, 1989; Blanchard & Steiner, 1992; Bodlund & Kullgren, 1996; Carroll, 2007; Green & Fleming, 1990; Kuiper & Cohen-Kettenis, 1988). Approximately 7% of individuals who have sex reassignment surgery later regret having the surgery (Bancroft, 1989; Lundstrom, Pauly, & Walinder, 1984). This is unfortunate because the surgery is irreversible. Also, as many as 2% attempt suicide after surgery, a rate much higher than the rate for the general population. Nevertheless, surgery has made life worth living for some people who suffered the effects of existing in what they felt to be the wrong body.

Treatment of Intersexuality

As we noted, surgery and hormonal replacement therapy has been standard treatment for many intersex individuals (hermaphrodites) who may be born with physical characteristics of both sexes. This group of individuals has been the subject of more careful evaluation, resulting in some new ideas and new approaches to treatment (Fausto-Sterling, 2000a, 2000b). Specifically, Anne Fausto-Sterling had suggested previously that there are actually five sexes: males; females; "herms," who are named after true hermaphrodites, or people born with both testes and ovaries; "merms," who are anatomically more male than female but possess some aspect of female genitalia; and "ferms," who have ovaries but possess some aspect of male genitalia. She estimates, based on the best evidence available, that for every 1,000 children born, 17, or 1.7%, may be intersexual in some form. What Fausto-Sterling (2000b) and others have noted is that individuals in this group are often dissatisfied with surgery, much as Bruce was in the case we described.

gender nonconformity Individuals expressing behavior and attitudes consistently characteristic of the opposite sex.

sex reassignment surgery A surgical procedure to alter a person's physical anatomy to conform to that person's psychological gender identity.



Mirek Towski/DML/Time Life Pictures/Getty Images



Jeffrey Mayer/WireImage/Getty Images

▲ Chaz Bono, the son of Cher and Sonny Bono, is a female-to-male transgender writer, musician, actor, and activist, who first came out as a homosexual female (left) and later chose sex reassignment surgery (right).



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► Physician Renee Richards played competitive tennis when she was a man, Richard Raskin, and after sex reassignment surgery.

Fausto-Sterling suggests that an increasing number of pediatric endocrinologists, urologists, and psychologists are examining the wisdom of early genital surgery that results in an irreversible gender assignment. Instead, health professionals may want to examine closely the precise nature of the intersex condition and consider surgery only as a last resort and only when they are sure the particular condition will lead to a specific psychological gender identity. Otherwise, psychological treatments to help individuals adapt to their particular sexual anatomy, or their emerging gender identity, might be more appropriate.

Concept Check 9.1

Answer the following questions about normal sexuality and gender identity disorder.

1. Name some gender differences that exist in sexual attitudes and sexual behavior. _____
2. Which sexual preference or preferences are normal, and how are they developed? _____
3. Charlie always felt out of place with the boys. At a young age he preferred to play with girls and insisted that his parents call him “Charlene.” He later claimed that he felt like a woman trapped in a man’s body. What disorder could Charlie have? _____
4. What could be the cause(s) of Charlie’s disorder? _____
5. What treatments could be given to Charlie? _____

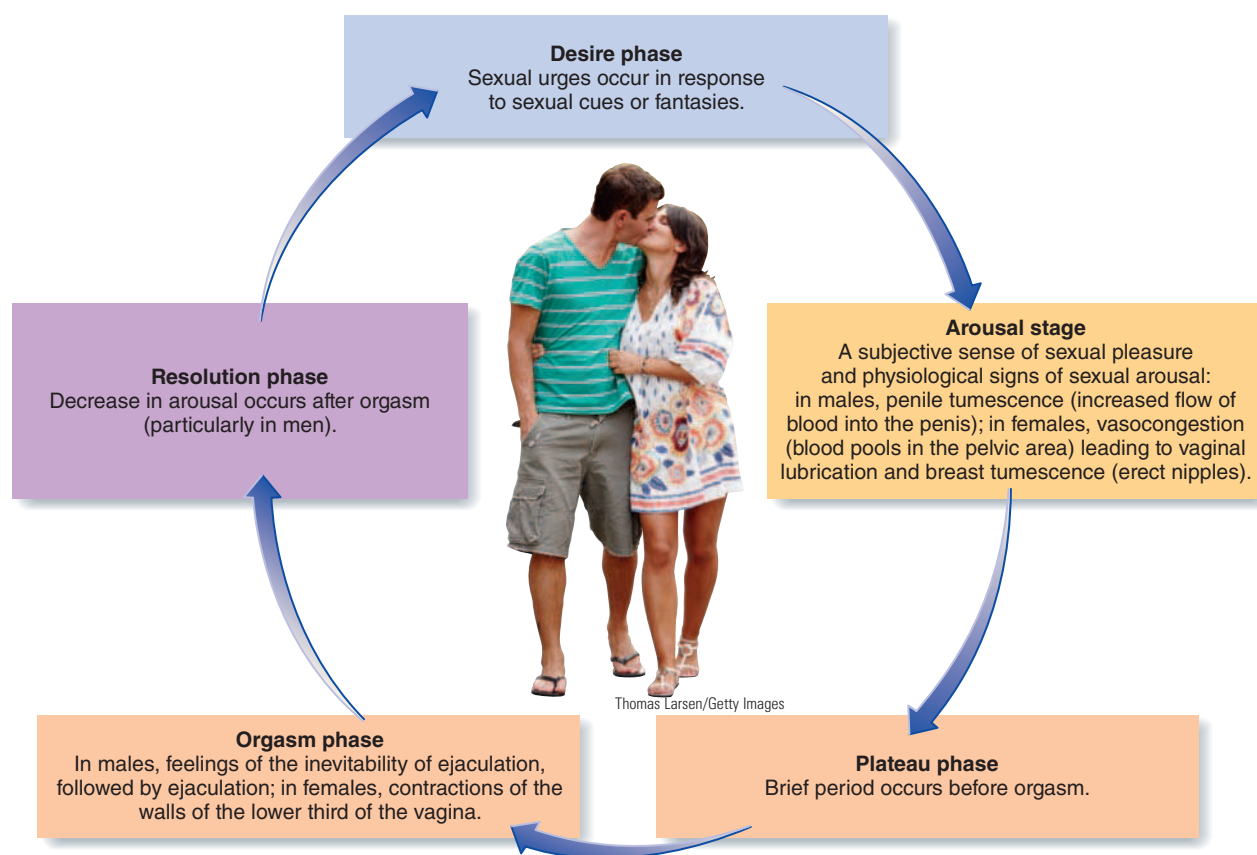
An Overview of Sexual Dysfunctions

- › How do psychologists define sexual dysfunction?
- › How is sexual dysfunction related to the sexual response cycle?

Before we describe **sexual dysfunction**, it’s important to note that the problems that arise in the context of sexual interactions may occur in both heterosexual and homosexual relationships. Inability to become aroused or reach orgasm seems to be as common in homosexual as in heterosexual relationships, but we discuss them in the context of heterosexual relationships, which are the majority of cases we see in our clinic. The three stages of the sexual response cycle—desire, arousal, and orgasm (■ Figure 9.2)—are each associated with specific sexual dysfunctions. In addition, pain can become associated with sexual functioning, which leads to additional dysfunctions.

An overview of the *DSM-IV-TR* categories of the sexual dysfunctions we examine is in Table 9.1. As you can see,

both males and females can experience parallel versions of most disorders, which take on specific forms determined by anatomy and other gender-specific characteristics. However, two disorders are sex specific: Premature ejaculation occurs only in males, and vaginismus—painful contractions or spasms of the vagina during attempted penetration—appears only in females. Sexual dysfunctions can be either lifelong or acquired. *Lifelong* refers to a chronic condition that is present during a person’s entire sexual life; *acquired* refers to a disorder that begins after sexual activity has been relatively normal. In addition, disorders can either be *generalized*, occurring every time the individual attempts sex, or they can be *situational*, occurring with some partners or at certain times but not with



■ **FIGURE 9.2** The human sexual response cycle. (Based on Kaplan, H. S., 1979, *Disorders of sexual desire*, New York, NY: Brunner/Mazel, and Masters, W. H., & Johnson, V. E., 1966, *Human sexual response*, Boston, MA: Little, Brown.)

other partners or at other times. Finally, sexual dysfunctions are further specified as (1) resulting from psychological factors or (2) resulting from psychological factors combined with a general medical condition. The latter specification occurs when there is a demonstrable vascular, hormonal, or associated physical condition known to contribute to the sexual dysfunction.

Before we describe the prevalence of specific sexual dysfunctions, we need to note a classic study by Ellen Frank and her colleagues (1978), who carefully interviewed 100 well-educated, happily married couples who were not seeking treatment. More than 80% of these couples reported that their marital and sexual relations were happy and satisfying. Surprisingly, 40% of the men reported occasional erectile and ejaculatory difficulties and 63% of the women reported occasional dysfunctions of arousal or orgasm. But the crucial finding was that these dysfunctions did not detract from the respondents' overall sexual satisfaction. In another study, only 45% of women experiencing difficulties with orgasm reported the issue as problematic (Fugl-Meyer & Sjogren Fugl-Meyer, 1999).

Bancroft, Loftus, and Long (2003) extended this analysis in a survey of close to 1,000 women in the United States involved in a heterosexual relationship for at least 6 months.

The interesting results indicate that, although 44.3% met objective criteria for one of the disorders in Table 9.1, only 24.4% of these individuals were distressed about it. Many of these women just did not consider the issue to be a problem. Indeed, the best predictor of sexual distress among these women were deficits in general emotional well-being or emotional relationships with the partner during sexual relations, not lack of lubrication or orgasm. These studies indicate that sexual satisfaction and occasional sexual dysfunction are not mutually exclusive categories (Bradford & Meston, 2011; Graham, 2010). In the context of a healthy relationship, occasional or partial sexual dysfunctions are easily accommodated. But this does raise problems for diagnosing sexual dysfunctions. Should a sexual problem be identified as a diagnosis when dysfunction is clearly present but the person is not distressed about it? This is one debate that has occurred during discussions about possible revisions for *DSM-5* (Balon, Segraves, & Clayton, 2007; Zucker, 2010).

sexual dysfunction A sexual disorder in which the client finds it difficult to function adequately while having sex.

Table 9.1 Categories of Sexual Dysfunction among Men and Women

Type of Disorder	Men	Women
Desire	Hypoactive sexual desire disorder (little or no desire to have sex) Sexual aversion disorder (aversion to and avoidance of sex)	Hypoactive sexual desire disorder (little or no desire to have sex) Sexual aversion disorder (aversion to and avoidance of sex)
Arousal	Male erectile disorder (difficulty attaining or maintaining erections)	Female sexual arousal disorder (difficulty attaining or maintaining lubrication or swelling response)
Orgasm	Inhibited male orgasm; premature ejaculation	Inhibited female orgasm
Pain	Dyspareunia (pain associated with sexual activity)	Dyspareunia (pain associated with sexual activity); vaginismus (muscle spasms in the vagina that interfere with penetration)

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Sexual Desire Disorders

Two disorders reflect problems with the desire phase of the sexual response cycle. Each of these disorders is characterized by little or no interest in sex that is causing problems in a relationship.

Hypoactive Sexual Desire Disorder

A person with **hypoactive sexual desire disorder** has little or no interest in any type of sexual activity. It is difficult to assess low sexual desire, and a great deal of clinical judgment is required (Pridal & LoPiccolo, 2000; Segraves & Woodard, 2006; Wincze, Bach, & Barlow, 2008; Wincze, 2009). You might gauge it by frequency of sexual activity—say, less than twice a month for a married couple. Or you might determine whether someone ever thinks about sex or has sexual fantasies. Then there is the person who has sex twice a week but really doesn't want to and thinks about it only because his wife is on his case to live up to his end of the marriage and have sex more often. This individual might have no desire, despite having frequent sex. Consider the case of Mr. and Mrs. C.

Mr. and Mrs. C. ♦ Getting Started

Mrs. C., a 31-year-old successful businesswoman, was married to a 32-year-old lawyer. They had two children, ages 2 and 5, and had been married 8 years when they entered therapy. The presenting problem was Mrs. C.'s lack of sexual desire. Mr. and Mrs. C. were interviewed separately during the initial assessment, and both professed attraction to and love for their partner. Mrs. C. reported that she could enjoy sex once she got involved and almost always was orgasmic. The problem was her lack of desire to get involved. She avoided her husband's sexual advances and looked on his affection and romanticism with great skepticism and, usually, anger and tears.

Mrs. C. was raised in an upper-middle-class family that was supportive and loving. However, from age 6 to age 12, she had been repeatedly pressured into sexual activity by a male cousin who was 5 years her senior. This sexual activity was always initiated by the cousin, always against her will. She did not tell her parents because she felt guilty because the boy did not use physical force to make her comply. It appeared that romantic advances by Mr. C. triggered memories of abuse by her cousin.

Best estimates suggest that more than 50% of patients who come to sexuality clinics for help complain of hypoactive sexual desire (Kaplan, 1979; Pridal & LoPiccolo, 2000). In many clinics, it is the most common presenting complaint of women; men present more often with erectile dysfunction (Hawton, 1995). The U.S. survey confirmed that 22% of women and 5% of men suffer from hypoactive sexual disorder. But in a larger international survey, as many as 43% of women reported this problem (Laumann et al., 2005). For men, the prevalence increases with age; for women, it decreases with age (DeLamater & Sill, 2005; Laumann, Paik, & Rosen, 1999). Schreiner-Engel and Schiavi (1986) noted that patients with this disorder rarely have sexual fantasies, seldom masturbate (35% of the women and 52% of the men never masturbated, and most of the rest in their sample masturbated no more than once a month), and attempt intercourse once a month or less. Suggested revisions for *DSM-5* would recognize that one of the reasons for low desire is that these individuals experience little sexual arousal, leading to a new label of "sexual interest/arousal disorder" (Brotto, 2010a).

Sexual Aversion Disorder

On a continuum with hypoactive sexual desire disorder is **sexual aversion disorder**, in which even the thought of sex or a brief casual touch may evoke fear, panic, or disgust

DSM Disorder Criteria Summary

Hypoactive Sexual Desire Disorder

- A. Persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age and the context of the person's life.
- B. The disturbance causes marked distress or interpersonal difficulty.
- C. The sexual dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

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(Kaplan, 1987). In some cases, the principal problem might be panic disorder (see Chapter 4), in which the fear or alarm response is associated with the physical sensations of sex. In other cases, sexual acts and fantasies may trigger traumatic images or memories similar to but perhaps not as severe as those experienced by people with posttraumatic stress disorder (see Chapter 4). There are few data on prevalence, but the majority of those presenting to clinics with sexual aversion disorder seem to be women (Brotto, 2010b; Wincze et al., 2008). Consider the case of Lisa from one of our clinics.

Lisa • The Terror of Sex

Lisa was 36, had been married for 3 years, and was a full-time student working on an associate's degree. She had been married once before. Lisa reported that sexual problems had begun 9 months earlier. She complained of poor lubrication during intercourse and of having "anxiety attacks" during sex. She had not attempted intercourse in 2 months and had tried only intermittently during the past 9 months. Despite their sexual difficulties, Lisa had a loving and close relationship with her husband. She could not remember precisely what happened 9 months ago except that she had been under a great deal of stress and experienced an anxiety attack during sex. Even her husband's touch was becoming increasingly intolerable because she was afraid it might bring on the scary feelings again. Her primary fear was of having a heart attack and dying during sex.

Among male patients presenting for sexual aversion disorder, 10% experienced panic attacks during attempted sexual activity. Kaplan (1987) reports that 25% of 106 patients presenting with sexual aversion disorder also met criteria for panic disorder. In such cases, treating the panic disorder may be a necessary first step. Because sexual aver-

sion disorder is basically anxiety or panic focused on sexual activity, one proposal for the *DSM-5* is to move it to the anxiety disorder category (Brotto, 2010b).

Sexual Arousal Disorders

Disorders of arousal are called **male erectile disorder** and **female sexual arousal disorder**. The problem here is not desire. Many individuals with arousal disorders have frequent sexual urges and fantasies and a strong desire to have sex. Their problem is in becoming physically aroused: A male has difficulty achieving or maintaining an erection, and a female cannot achieve or maintain adequate lubrication (Basson, 2007; Rosen, 2007; Segraves & Althof, 1998; Wincze, 2009; Wincze et al., 2008). Consider the case of Bill.

Bill • Long Marriage, New Problem

Bill, a 58-year-old white man, was referred to our clinic by his urologist. He was a retired accountant who had been married for 29 years to his 57-year-old wife, a retired nutritionist. They had no children. For the past several years, Bill had had difficulties obtaining and maintaining an erection. He reported a rather rigid routine he and his wife had developed to deal with the problem. They scheduled sex for Sunday mornings. However, Bill had to do a number of chores first, including letting the dog out, washing the dishes, and shaving. The couple's current behavior consisted of mutual hand stimulation. Bill was "not allowed" to attempt insertion until after his wife had climaxed. Bill's wife was adamant that she was not going to change her sexual behavior and "become a whore," as she put it. This included refusing to try K-Y jelly as a lubricant appropriate to her postmenopausal decrease in lubrication.

Bill and his wife agreed that despite marital problems over the years they had always maintained a good sexual relationship until the onset of the current problem. Useful information was obtained in separate interviews. Bill masturbated on Saturday night in an attempt to control his erection the following morning; his wife was unaware of this. In addition, he quickly and easily achieved a full erection when viewing erot-

hypoactive sexual desire disorder An apparent lack of interest in sexual activity or fantasy that would not be expected considering the person's age and life situation.

sexual aversion disorder An extreme and persistent dislike of sexual contact or similar activities.

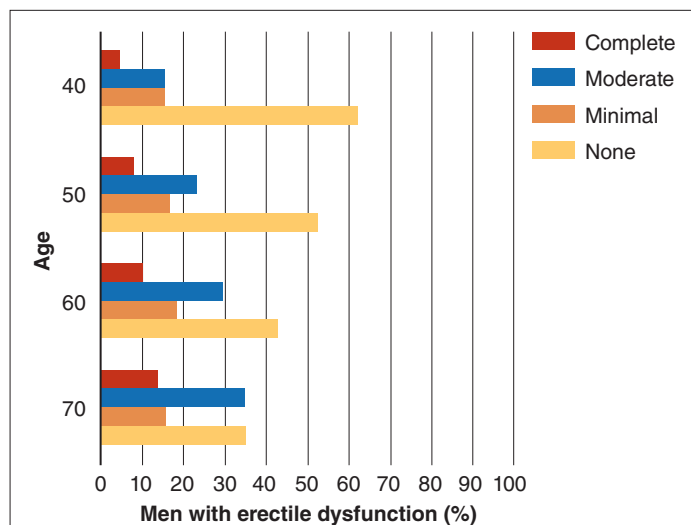
male erectile disorder The recurring inability in some men to attain or maintain adequate penile erection until completion of sexual activity.

female sexual arousal disorder The recurrent inability in some women to attain or maintain adequate lubrication and sexual excitement swelling responses until completion of sexual activity.

ica in the privacy of the sexuality clinic laboratory (surprising the assessor). Bill's wife privately acknowledged being angry at her husband for an affair that he had had 20 years earlier.

At the final session, three specific recommendations were made: for Bill to cease masturbating the evening before sex, for the couple to use a lubricant, and for them to delay the morning routine until after they had had sexual relations. The couple called back 1 month later to report that their sexual activity was much improved.

The old and somewhat derogatory terms for male erectile disorder and female arousal disorder are *impotence* and *frigidity*, but these are imprecise labels that do not identify the specific phase of the sexual response in which the problems are localized. A man typically feels more impaired by his problem than a woman does by hers. Inability to achieve and maintain an erection makes intercourse difficult or impossible. Women who are unable to achieve vaginal lubrication, however, may be able to compensate by using a commercial lubricant (Schover & Jensen, 1988; Wincze, 2009). In women, arousal and lubrication may decrease at any time but, as in men, such problems tend to accompany aging (Bartlik & Goldberg, 2000; Basson, 2007; DeLamater & Sill, 2005; Laumann et al., 1999; Morokoff, 1993; Rosen, 2000). It is unusual for a man to be completely unable to achieve an erection. More typical is a situation like Bill's, where full erections are possible during masturbation and partial erections occur during attempted intercourse but with insufficient rigidity to allow penetration.



■ **FIGURE 9.3** Estimated prevalence and severity of erectile dysfunction in a sample of 1,290 men between 40 and 70 years of age. (Reprinted, with permission, from Feldman et al., 1994. Impotence and its medical and psychosocial correlates: Results of the Massachusetts male aging study. *Journal of Urology*, 51, 54–61.

The prevalence of erectile dysfunction is startlingly high and increases with age. Although data from the U.S. survey indicate that 5% of men between 18 and 59 fully meet a stringent set of criteria for erectile dysfunction (Laumann et al., 1999), this figure certainly underestimates the prevalence because erectile dysfunction increases rapidly in men after age 60. Rosen, Wing, Schneider, and Gendrano (2005) reviewed evidence from around the world and found that 60% of men 60 and older suffered from erectile dysfunction. Data from another study (shown in ■ Figure 9.3) suggest that at least some impairment is present in approximately 40% of men in their 40s and 70% of men in their 70s (Feldman, Goldstein, Hatzichristou, Krane, & McKunlay, 1994; Kim & Lipshultz, 1997; Rosen, 2007). Male erectile disorder is easily the most common problem for which men seek help, accounting for 50% or more of the men referred to specialists for sexual problems (Hawton, 1995).

DSM Disorder Criteria Summary

Sexual Arousal Disorders

DSM-IV TR Criteria for Female Sexual Arousal Disorder:

- Persistent or recurrent inability to attain, or to maintain until completion of the sexual activity, an adequate lubrication swelling response of sexual excitement.
- The disturbance causes marked distress or interpersonal difficulty.
- The sexual dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

DSM-IV TR Criteria for Male Erectile Disorder

- Persistent and recurrent inability to attain, or to maintain until completion of the sexual activity, an adequate erection.
- The disturbance causes marked distress or interpersonal difficulty.
- The erectile dysfunction is not better accounted for by another Axis I disorder (other than a Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

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The prevalence of female arousal disorders is somewhat more difficult to estimate because many women still do not consider absence of arousal to be a problem, let alone a disorder. The U.S. survey reports a prevalence of 14% of females experiencing an arousal disorder (Laumann et al., 1999). Because disorders of desire, arousal, and orgasm often overlap, it is difficult to estimate precisely how many women with specific arousal disorders present to sex clinics (Basson, 2007; Segraves & Althof, 1998; Wincze & Carey, 2001).

Orgasm Disorders

The orgasm phase of the sexual response cycle can also become disrupted in one of several ways. As a result, either the orgasm occurs at an inappropriate time or it does not occur.

Inhibited Orgasm

An inability to achieve an orgasm despite adequate sexual desire and arousal is commonly seen in women (Stock, 1993; Wincze, 2009), but **inhibited orgasm** is relatively rare in men. Consider the case of Greta and Will.

Greta and Will • Loving Disunion

Greta, a teacher, and Will, an engineer, were an attractive couple who came together to the first interview and entered the office clearly showing affection for each other. They had been married for 5 years and were in their late 20s. When asked about the problems that had brought them to the office, Greta quickly reported that she didn't think she had ever had an orgasm—"didn't think" because she wasn't really sure what an orgasm was.

Will certainly didn't think Greta was reaching orgasm. In any case, he reported, they were clearly going in "different directions" sexually, in that Greta's interest was decreasing. She had progressed from initiating sex occasionally early in their marriage to almost never doing so, except for an occasional spurt every 6 months or so. But Greta noted that it was the physical closeness she wanted most during these times rather than sexual pleasure. Further inquiry revealed that she did become sexually aroused occasionally but had never reached orgasm, even during several attempts at masturbation mostly before her marriage.

Greta had been brought up in a strict but loving and supportive Catholic family that more or less ignored sexuality. The parents were always careful not to display their affection in front of Greta, and when her mother caught Greta touching her genital area, she was cautioned rather severely to avoid that kind of activity.

An inability to reach orgasm is the most common complaint among women who seek therapy for sexual problems. Although the U.S. survey did not estimate the prevalence of **female orgasmic disorder** specifically, approximately 25% of women report significant difficulty reaching orgasm (Heiman, 2000; Laumann et al., 1999), although estimates vary widely (Graham, 2010). The problem is equally present in different age groups, and unmarried women were 1.5 times more likely than married women to experience orgasm disorder. In diagnosing this problem, it is necessary to determine that the women "never or almost never" reach orgasm (Wincze & Carey, 2001). This distinction is important because only approximately 20% of all women reliably

experience regular orgasms during sexual intercourse (Graham, 2010; Lloyd, 2005). Therefore, approximately 80% do not achieve orgasm with every sexual encounter; unlike most men, who tend to experience orgasm more consistently. Thus, the "never or almost never" inquiry is important, along with establishing the extent of the couple's distress, in diagnosing orgasmic dysfunction.

In the U.S. survey, approximately 8% of men report having delayed orgasms or none during sexual interactions (Laumann et al., 1999). Men seldom seek treatment for this condition. It is possible that in many cases some men reach climax through alternative forms of stimulation and that **male orgasmic disorder** is accommodated by the couple (Apfelbaum, 2000).

Some men who are unable to ejaculate with their partners can obtain an erection and ejaculate during masturbation. In the most usual pattern, ejaculation is delayed; this is called *retarded ejaculation*. Occasionally men suffer from *retrograde ejaculation*, in which ejaculatory fluids travel backward into the bladder rather than forward. This phenomenon is almost always caused by the effects of certain drugs or a coexisting medical condition and should not be confused with male orgasmic disorder.

DSM Disorder Criteria Summary Orgasmic Disorders

DSM-IV TR Criteria for Female Orgasmic Disorder (formerly Inhibited Female Orgasm)

- A. Persistent or recurrent delay in, or absence of, orgasm following a normal sexual excitement phase. Women exhibit wide variability in the type or intensity of stimulation that triggers orgasm. The diagnosis of Female Orgasmic Disorder should be based on the clinician's judgment that the woman's orgasmic capacity is less than would be reasonable for her age, sexual experience, and the adequacy of sexual stimulation she receives.

DSM-IV TR Criteria for Male Orgasmic Disorder (formerly Inhibited Male Orgasm)

- A. Persistent or recurrent delay in, or absence of, orgasm following a normal sexual excitement phase during sexual activity that the clinician, taking into account the person's age, judges to be adequate in focus, intensity, and duration.

Note: both disorders share the following criteria:

- B. The disturbance causes marked distress or interpersonal difficulty.
- C. The orgasmic dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

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inhibited orgasm An inability to achieve orgasm despite adequate sexual desire and arousal; commonly seen in women but relatively rare in men.

female orgasmic disorder The recurring delay or absence of orgasm in some women following a normal sexual excitement phase, relative to their prior experience and current stimulation. Also known as inhibited orgasm (female).

male orgasmic disorder The recurring delay in or absence of orgasm in some men following a normal sexual excitement phase, relative to age and current stimulation. Also known as inhibited orgasm (male).

Premature Ejaculation

A far more common male orgasmic disorder is **premature ejaculation**, ejaculation that occurs well before the man and his partner wish it to (Althof, 2006; Polonsky, 2000; Wincze, 2009). Consider the rather typical case of Gary.

Gary ♦ Running Scared

Gary, a 31-year-old salesman, engaged in sexual activity with his wife 3 or 4 times a month. He noted that he would have liked to have had sex more often but his busy schedule kept him working about 80 hours a week. His primary difficulty was an inability to control the timing of his ejaculation. Approximately 70% to 80% of the time he ejaculated within seconds of penetration. This pattern had been constant since he met his wife approximately 13 years earlier. Previous experience with other women, although limited, was not characterized by premature ejaculation. In an attempt to delay his ejaculation, Gary distracted himself by thinking of nonsexual things (scores of ball games or work-related issues) and sometimes attempted sex soon after a previous attempt because he seemed not to climax as quickly under these circumstances. Gary reported masturbating seldom (3 or 4 times a year at most). When he did masturbate, he usually attempted to reach orgasm quickly, a habit he acquired during his teens to avoid being caught by a family member.

One of his greatest concerns was that he was not pleasing his wife, and under no circumstances did he want her told that he was seeking treatment. Further inquiry revealed that he made many extravagant purchases at his wife's request, even though it strained their finances, because he wished to please her. He felt that if they had met recently, his wife probably would not even accept a date with him because he had lost much of his hair and she had lost weight and was more attractive than she used to be.

The frequency of premature ejaculation seems to be quite high. In the U.S. survey, 21% of all men met criteria for premature ejaculation, making it the most common male sexual dysfunction (Laumann et al., 1999). In one clinic, premature ejaculation was the principal complaint of 16% of men seeking treatment (Hawton, 1995).

It is difficult to define “premature.” An adequate length of time before ejaculation varies from individual to individual. Patrick and colleagues (2005) found that men who complain of premature ejaculation ejaculated 1.8 minutes after penetration, compared with 7.3 minutes in individuals without this complaint. A perceived lack of control over orgasm, however, may be the more important psychological determinant of premature ejaculation (Wincze et al., 2008). Although occasional early ejaculation is normal,

consistent premature ejaculation appears to occur primarily in inexperienced men with less education about sex (Laumann et al., 1999).

Sexual Pain Disorders

In the **sexual pain disorders**, intercourse is associated with marked pain. For some men and women, sexual desire is present, and arousal and orgasm are easily attained, but the pain of intercourse is so severe that sexual behavior is disrupted. This subtype is named **dyspareunia**. Dyspareunia is diagnosed only if no medical reasons for pain can be found. It can be tricky to make this assessment (Binik, 2010; Binik, Bergeron, & Khalifé, 2000; Payne et al., 2005). Several years ago, a patient of ours described having sharp pains in his head, like a migraine headache, which began during ejaculation and lasted for several minutes. This man, in his 50s at the time, had had a healthy sexual relationship with his wife until a severe fall approximately 2 years earlier that left him partially disabled and with a severe limp. The pain during ejaculation developed shortly thereafter. Extensive medical examination from a number of specialists revealed no physical reason for the pain. Thus, he met the criteria for dyspareunia, and psychological interventions were administered—in this case without benefit. He subsequently engaged in manual stimulation of his wife and, occasionally, intercourse, but he avoided ejaculation.

Dyspareunia is rarely seen in clinics, with estimates of those affected ranging from 1% to 5% of men (Bancroft, 1989; Spector & Carey, 1990) and a more substantial 10% to 15% of women (Hawton, 1995; Rosen & Leiblum, 1995).

DSM Disorder Criteria Summary

Sexual Pain Disorders

DSM-IV TR Criteria for Dyspareunia (Not Due to a General Medical Condition)

- A. Recurrent or persistent genital pain associated with sexual intercourse in either a male or a female.
- B. The disturbance causes marked distress or interpersonal difficulty.
- C. The disturbance is not caused exclusively by Vaginismus or lack of lubrication, is not better accounted for by another Axis I disorder (except another Sexual Dysfunction), and is not due exclusively to the direct physiological effects of substance (e.g., a drug of abuse, a medication) or a general medical condition.

DSM-IV TR Criteria for Vaginismus (Not Due to a General Medical Condition)

- A. Recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with sexual intercourse.
- B. The disturbance causes marked distress or interpersonal difficulty.
- C. The disturbance is not better accounted for by another Axis I disorder (e.g., Somatization Disorder) and is not due exclusively to the direct physiological effects of a general medical condition.

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Binik (2005; Binik, Bergeron, & Khalifé, 2007) does not think that dyspareunia should be classified as a sexual disorder but rather as a “urogenital pain disorder.” He believes that this would focus therapy on pain control.

A more common problem is **vaginismus**, in which the pelvic muscles in the outer third of the vagina undergo involuntary spasms when intercourse is attempted (Bancroft, 1997; Binik et al., 2007). The spasm reaction of vaginismus may occur during any attempted penetration, including a gynecological exam or insertion of a tampon (Beck, 1993; Bradford & Meston, 2011). Women report sensations of “ripping, burning, or tearing during attempted intercourse” (Beck, 1993, p. 384). Consider the case of Jill.

Jill • Sex and Spasms

Jill was referred to our clinic by another therapist because she had not consummated her marriage of 1 year. At 23 years of age, she was an attractive and loving wife who managed a motel while her husband worked as an accountant. Despite numerous attempts in a variety of positions to engage in intercourse, Jill's severe vaginal spasms prevented penetration of any kind. Jill was also unable to use tampons. With great reluctance, she submitted to gynecological exams at infrequent intervals. Jill, an anxious young woman, came from a family in which sexual matters were seldom discussed and sexual contact between the parents had ceased some years before. Although she enjoyed petting, Jill's general attitude was that intercourse was disgusting. Furthermore, she expressed some fears of becoming pregnant despite taking adequate contraceptive measures. She also thought that she would perform poorly when she did engage in intercourse, therefore embarrassing herself with her new husband.

Although there are no data on the prevalence of vaginismus in community samples, best estimates are that it affects 6% of women (Bradford & Meston, 2011). Crowley, Richardson, and Goldmeir (2006) found that 25% of women who report suffering from some sexual dysfunction experience vaginismus. The prevalence of this condition in cultures with conservative views of sexuality, such as Ireland, may be higher—as high as 42% to 55% in at least two clinic samples (Barnes, Bowman, & Cullen, 1984; O'Sullivan, 1979). (Results from any one clinic may not be applicable even to other clinics, let alone to the population of Ireland.) Because vaginismus and dyspareunia both involve pain and overlap quite a bit in women, current proposals suggest combining these two problems in a single pain-related category (Binik, 2005; Binik et al., 2010; Payne et al., 2005). Results from the U.S. survey indicate that approximately 7% of women suffer from one or the other type of sexual pain disorder, with higher proportions of

younger and less educated women reporting this problem (Laumann et al., 1999).

Assessing Sexual Behavior

There are three major aspects to the assessment of sexual behavior (Wiegel, Wincze, & Barlow, 2002):

1. *Interviews*, usually supported by numerous questionnaires because patients may provide more information on paper than in a verbal interview
2. *A thorough medical evaluation*, to rule out the variety of medical conditions that can contribute to sexual problems
3. *A psychophysiological assessment*, to directly measure the physiological aspects of sexual arousal

Many clinicians assess the ability of individuals to become sexually aroused under a variety of conditions by taking psychophysiological measurements while the patient is either awake or asleep. In men, penile erection is measured directly, using, for example, a *penile strain gauge* developed in our clinic (Barlow, Becker, Leitenberg, & Agras, 1970). As the penis expands, the strain gauge picks up the changes and records them on a polygraph. Note that participants are often not aware of these more objective measures of their arousal—that is, their self-report of how aroused they are differs from the objective measure—and this discrepancy increases or decreases as a function of the type of sexual problem they have. Penile rigidity is also important to measure in cases of erectile dysfunction because large erections with insufficient rigidity will not be adequate for intercourse (Wiegel et al., 2002).

The comparable device for women is a *vaginal photoplethysmograph*, developed by James Geer and his associates (Geer, Morokoff, & Greenwood, 1974; Prause & Janssen, 2006; Rosen & Beck, 1988). This device, which is smaller than a tampon, is inserted by the woman into her vagina. A light source at the tip of the instrument and two light-sensitive photoreceptors on the sides of the instrument measure the amount of light reflected back from the vaginal walls. Because blood flows to the vaginal walls during arousal, the amount of light passing through them decreases with increasing arousal.

Typically in our clinic, individuals undergoing physiological assessment view an erotic videotape for 2 to 5 minutes or, occasionally, listen to an erotic audiotape (see, for example, Bach, Brown, & Barlow, 1999; Weisburg, Brown, Wincze, & Barlow, 2001). The patient's sexual responsivity

premature ejaculation A recurring ejaculation before the person wishes it, with minimal sexual stimulation.

sexual pain disorders (dyspareunia) A recurring genital pain in either males or females before, during, or after sexual intercourse. Also known as *dyspareunia*.

vaginismus A recurring involuntary muscle spasms in the outer third of the vagina that interfere with sexual intercourse.

during this time is assessed psychophysically using the strain gauge or photoplethysmograph just described. Patients also report subjectively on the amount of sexual arousal they experience. This assessment allows the clinician to carefully observe the conditions under which arousal is possible for the patient. For example, many individuals with psychologically based sexual dysfunctions may achieve strong arousal in a laboratory but be unable to become aroused with a partner (Bancroft, 1997; Sakheim, Barlow, Abrahamson, & Beck, 1987).

Concept Check 9.2

Diagnose the following sexual dysfunctions.

1. Juanita is in a serious sexual relationship and is content. Lately, however, the thought of her boyfriend's touch disgusts her. Juanita has no idea what is causing this. She could be suffering from (a) panic disorder, (b) sexual arousal disorder, (c) sexual aversion disorder, or (d) both a and b.

2. After Bob was injured playing football, he started having pain in his arm during sex. All medical reasons for the pain have been ruled out. Bob is probably displaying (a) dyspareunia, (b) vaginismus, (c) penile strain gauge, or (d) male orgasmic disorder.
3. Kelly has no real desire for sex. She has sex only because she feels that otherwise her husband may leave her. Kelly suffers from (a) sexual aversion disorder, (b) hypoactive sexual desire disorder, (c) boredom, or (d) female sexual arousal disorder.
4. Aadarsh lacks the ability to control ejaculation. The majority of the time he ejaculates within seconds of penetration. He suffers from (a) male erectile disorder, (b) stress, (c) premature ejaculation, or (d) both a and b.
5. Samantha came into the office because she is unable to reach orgasm. She loves her husband but stopped initiating sex. She is most likely suffering from (a) female orgasmic disorder, (b) female sexual arousal disorder, (c) vaginismus, or (d) dislike for her husband.

Causes and Treatment of Sexual Dysfunction

- › What are the defining features and known causes of sexual dysfunction?
- › What psychosocial and medical treatments are available, and are they effective?

As with most disorders, biological, psychological, and social factors contribute to the development of sexual dysfunction. And these problems can be treated either psychologically or medically.

Causes of Sexual Dysfunction

Individual sexual dysfunctions seldom occur in isolation. Usually, a patient referred to a sexuality clinic complains of a wide assortment of sexual problems, although one may be of most concern (Rosen, 2007; Wincze, 2009). A 45-year-old man recently referred to our clinic had been free of problems until 10 years earlier, when he was under a great deal of pressure at work and was preparing to take a major career-related licensing examination. He began experiencing erectile dysfunction about 50% of the time, a condition that had progressed to approximately 80% of the time. In addition, he reported that he had no control over ejaculation, often ejaculating before penetration with only a semi-erect penis. Over the past 5 years, he had lost most interest in sex and was coming to treatment only at his wife's insistence. Thus, this man suffered simultaneously from erectile dysfunction, premature ejaculation, and low sexual desire.

Because of the frequency of such combinations, we discuss the causes of various sexual dysfunctions together, reviewing briefly the biological, psychological, and social contributions and specifying causal factors thought to be associated exclusively and specifically with one or another dysfunction.

Biological Contributions

A number of physical and medical conditions contribute to sexual dysfunction (Basson, 2007; Rosen, 2007; Wiegel et al., 2002; Wincze & Carey, 2001; Wincze et al., 2008). Neurological diseases and other conditions that affect the nervous system, such as diabetes and kidney disease, may directly interfere with sexual functioning by reducing sensitivity in the genital area, and they are a common cause of erectile dysfunction in males (Rosen, 2007; Wincze, 2009). Feldman and colleagues (1994) reported that 28% of men with diabetes experienced complete erectile failure. Vascular disease is a major cause of sexual dysfunction because erections in men and vaginal engorgement in women depend on adequate blood flow. The two relevant vascular problems in men are arterial insufficiency (constricted arteries), which makes it difficult for blood to reach the penis, and venous leakage (blood flows

out too quickly for an erection to be maintained) (Wincze & Carey, 2001).

Chronic illness can also indirectly affect sexual functioning. For example, it is not uncommon for individuals who have had heart attacks to be wary of the physical exercise involved in sexual activity to the point of preoccupation. They often become unable to achieve arousal despite being assured by their physicians that sexual activity is safe for them (Cooper, 1988). Also, coronary artery disease and sexual dysfunction commonly coexist, and it is now recommended that men presenting with erectile dysfunction should be screened for cardiovascular disease (Jackson, Rosen, Kloner, & Kostis, 2006).

A major physical cause of sexual dysfunction is prescription medication. Drug treatments for high blood pressure, called *antihypertensive medications*, in the class known as beta-blockers, including propranolol, may contribute to sexual dysfunction. Serotonin-specific reuptake inhibitor (SSRI) antidepressant medications and other antidepressant and antianxiety drugs may also interfere with sexual desire and arousal in both men and women (Balon, 2006; Segraves & Althof, 1998). Sexual dysfunction—specifically low sexual desire and arousal difficulties—is the most widespread side effect of the antidepressant SSRIs, such as Prozac (see Chapter 6). Some people are aware that alcohol suppresses sexual arousal, but they may not know that most other drugs of abuse, such as cocaine and heroin, also produce widespread sexual dysfunction in frequent users and abusers, both male and female. There is also the misconception that alcohol facilitates sexual arousal and behavior. What actually happens is that alcohol at low and moderate levels reduces social inhibitions so that people feel more like having sex (and perhaps are more willing to request it) (Crowe & George, 1989; Wiegel, Scepkowski, & Barlow, 2006). Physically, alcohol is a central nervous system suppressant, and for men to achieve erection and women to achieve lubrication is more difficult when the central nervous system is suppressed (Schiavi, 1990). Chronic alcohol abuse may cause permanent neurological damage and may virtually eliminate the sexual response cycle. Such abuse may lead to liver and testicular damage, resulting in decreased testosterone levels and related decreases in sexual desire and arousal. This dual effect of alcohol (social disinhibition and physical suppression) has been recognized since the time of Shakespeare: “It provokes the desire, but it takes away the performance” (*Macbeth*, II, iii, 29).

Many people report that cocaine or marijuana enhances sexual pleasure. Although little is known about the effects of marijuana across the range of use, it is unlikely that



Abnormal Psychology Inside Out. Produced by Ira Wohl, Only Child Motion Pictures

Erectile Dysfunction: Clark

“In the process of becoming aroused, all of a sudden it would be over. And I didn’t understand that at all. So then everything is coupled with a bunch of depressing thoughts, like fear of failure. And so I begin to say, is this happening to me because I’m afraid I’m going to fail, and I don’t want to be embarrassed by that? It’s really very difficult to deal with emotionally . . . The worse I feel about myself, the slower I am sexually, and sometimes I describe it as the fear of losing masculinity.”

Go to Psychology CourseMate at www.cengagebrain.com to watch this video.

chemical effects increase pleasure. Rather, in those individuals who report some enhancement of sexual pleasure (and many don’t), the effect may be psychological in that their attention is focused more completely and fully on sensory stimulation (Buffum, 1982), a factor that seems to be an important part of healthy sexual functioning. If so, imagery and attentional focus can be enhanced with nondrug procedures such as meditation, in which a person practices concentrating on something with as few distractions as possible. Finally, one report from Mannino, Klevens, and Flanders (1994), studying more than 4,000 male army veterans, found that cigarette smoking alone was associated with increased erectile dysfunction after controlling for other factors, such as alcohol use and vascular disease (Wincze et al., 2008).

Psychological Contributions

How do we account for sexual dysfunction from a psychological perspective? Basically, we have to break the concept of performance anxiety into several components. One component is arousal, another is cognitive processes, and the third is negative affect (Wiegel et al., 2006; Wincze et al., 2008).

When confronted with the possibility of having sexual relations, individuals who are dysfunctional tend to expect the worst and find the situation to be relatively negative and unpleasant (Weisburg et al., 2001). As far as possible, they avoid becoming aware of any sexual cues (and therefore are not aware of how aroused they are physically, thus underreporting their arousal). They also may distract themselves with negative thoughts, such as, “I’m going to make a fool of myself” or “I’ll never be able to get aroused and she [or he] will think I’m stupid.” We know that as arousal increases, a person’s attention focuses more intently and consistently. But the person who is focusing on negative thoughts will find it impossible to become sexually aroused.

People with normal sexual functioning react to a sexual situation positively. They focus their attention on the erotic cues and do not become distracted. When they become aroused, they focus even more strongly on the sexual and

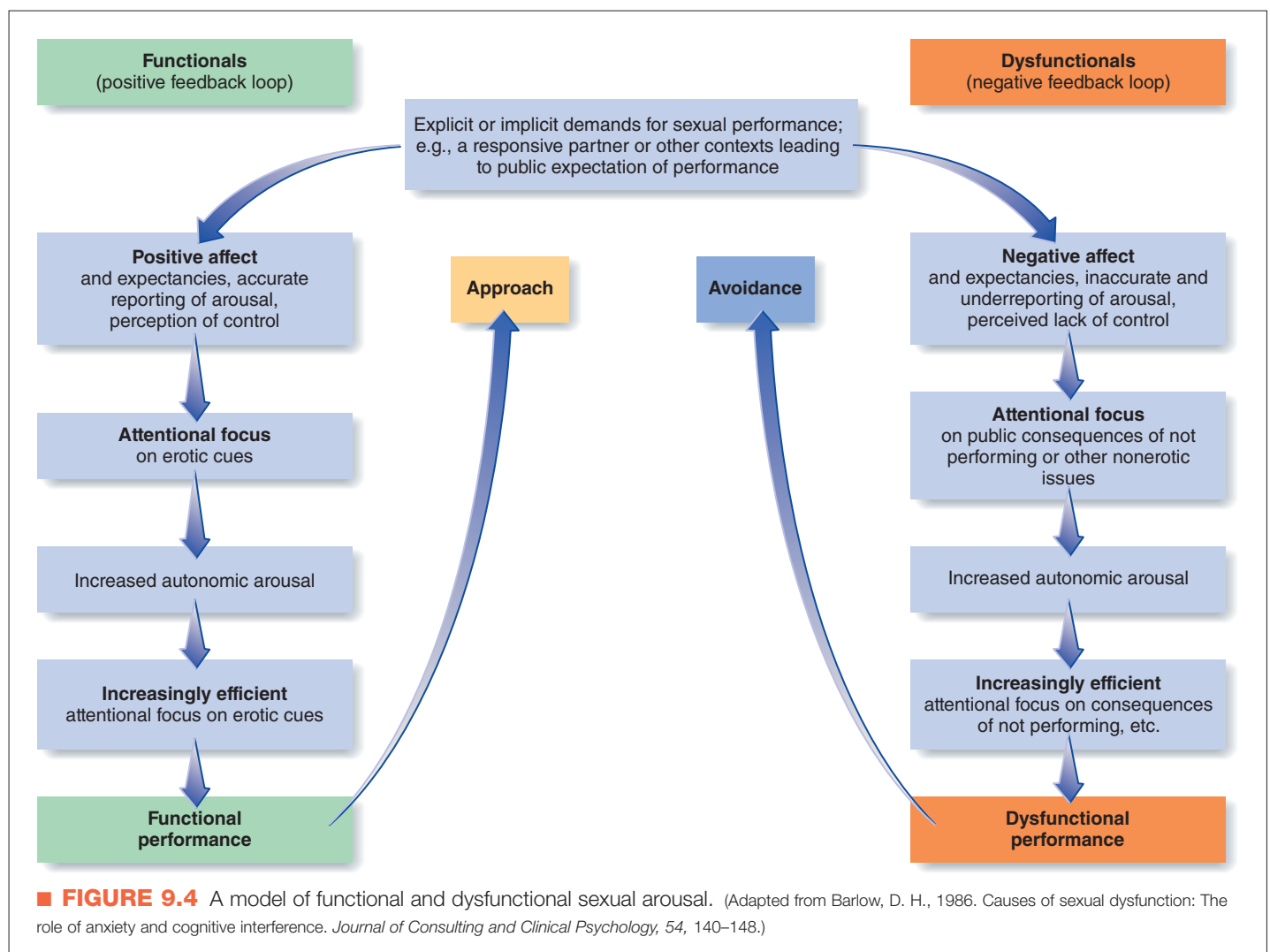
erotic cues, allowing themselves to become increasingly sexually aroused. The model presented in ■ Figure 9.4 illustrates both functional and dysfunctional sexual arousal (Barlow, 1986, 2002). These experiments demonstrate that sexual arousal is strongly determined by psychological factors, particularly cognitive and emotional factors, that are powerful enough to determine whether blood flows to the appropriate areas of the body, such as the genitals, confirming again the strong interaction of psychological and biological factors in most of our functioning.

In summary, normally functioning individuals show increased sexual arousal during “performance demand” conditions, experience positive affect, are distracted by nonsexual stimuli, and have a good idea of how aroused they are. Individuals with sexual problems, such as erectile dysfunction in males, show decreased arousal during performance demand, experience negative affect, are not distracted by nonsexual stimuli, and do not have an accurate sense of how aroused they are. This process seems to apply to most sexual dysfunctions, which, you will remember, tend to occur together, but it is particularly applicable to sexual arousal disorders (Wiegel et al., 2006).

Although little is known about the psychological (or biological) factors associated with premature ejaculation (Althof, 2007; Bradford & Meston, 2011; Weiner, 1996), the condition is most prevalent in young men and excessive physiological arousal in the sympathetic nervous system may lead to rapid ejaculation. These observations suggest some men may have a naturally lower threshold for ejaculation—that is, they require less stimulation and arousal to ejaculate. Unfortunately, the psychological factor of anxiety also increases sympathetic arousal. Thus, when a man becomes anxious about ejaculating too quickly, his concern only makes the problem worse.

Social and Cultural Contributions

The model of sexual dysfunction displayed in Figure 9.4 helps explain why some individuals may be dysfunctional *at the present time* but it does not explain how they *became* that way. Although it is not known for sure why some people develop problems, many people learn early that sexuality can be negative and somewhat threatening, and the responses they develop reflect this belief. Donn Byrne and his colleagues call this negative cognitive set *erotopho-*



bia. They have demonstrated that erotophobia, presumably learned early in childhood from families, religious authorities, or others, seems to predict sexual difficulties later in life (Byrne & Schulte, 1990). Thus, for some individuals, sexual cues become associated early with negative affect. In other cases, both men and women may experience specific negative or traumatic events after a period of relatively well-adjusted sexuality. These negative events might include sudden failure to become aroused or actual sexual trauma such as rape and early sexual abuse.

Laumann and colleagues (1999), in the U.S. sex survey, found a substantial impact of early traumatic sexual events on later sexual functioning, particularly in women. For example, if women were sexually victimized by an adult before puberty or were forced to have sexual contact of some kind, they were approximately twice as likely to have orgasmic dysfunction as women who had not been touched before puberty or forced to have sex at any time. For male victims of adult-child contact, the probability of experiencing erectile dysfunction is more than 3 times greater than if they had not had the contact. It is interesting that men who admitted sexually assaulting women are 3.5 times as likely to report erectile dysfunction as those who did not. Thus, traumatic sexual acts of all kinds have long-lasting effects on subsequent sexual functioning, in both men and women, sometimes lasting decades beyond the occurrence of the original event (Hall, 2007). Such stressful events may initiate negative affect, in which individuals experience a loss of control over their sexual response cycle, throwing them into the kind of dysfunctional pattern depicted in Figure 9.4. It is common for people who experience erectile failure during a particularly stressful time to continue sexual dysfunction long after the stressful situation has ended.

In addition to generally negative attitudes or experiences associated with sexual interactions, a number of other factors may contribute to sexual dysfunction. Among these, the most common is a marked deterioration in close interpersonal relationships (Wincze, Bach, & Barlow, 2008). It is difficult to have a satisfactory sexual relationship in the context of growing dislike for a partner. Occasionally, the partner may no longer seem physically attractive. Finally, it is also important to feel attractive yourself. Koch, Mansfield, Thureau, and Carey (2005) found that the more a woman perceived herself as less attractive than before, the more likely she was to have sexual problems. Poor sexual skills might also lead to frequent sexual failure and, ultimately, lack of desire. For example, men with erectile dysfunction report a greatly restricted range of sexual behaviors compared to men without these problems (Wincze et al., 2008).

Thus, social and cultural factors seem to affect later sexual functioning. John Gagnon has studied this phenomenon and constructed an important concept called *script theory* of sexual functioning, according to which we all operate by following “scripts” that reflect social and cultural expectations and guide our behavior (Gagnon, 1990; Laumann, Gagnon, Michael, & Michaels, 1994). Discover-

ing these scripts, both in individuals and across cultures, will tell us much about sexual functioning. For example, a person who learns that sexuality is potentially dangerous, dirty, or forbidden is more vulnerable to developing sexual dysfunction later in life. This pattern is most evident in cultures with restrictive attitudes toward sex (McGoldrick et al., 2007). For example, vaginismus is relatively rare in North America but is considerably more prevalent in Ireland and Turkey (Dog̃an, 2009; McGoldrick et al., 2007). Even in our own culture, certain socially communicated expectations and attitudes may stay with us despite our relatively enlightened and permissive attitude toward sex. Barbara Andersen and her colleagues (see, for example, Cyranowski et al., 1999) have demonstrated that being emotional and self-conscious about sex (having a negative sexual self-schema, described earlier in the chapter) may later lead to sexual difficulties under stressful situations. Zilbergeld (1999), one of the foremost authorities on male sexuality, has described a number of myths about sex believed by many men, and Baker and DeSilva (1988) converted an earlier version of Zilbergeld’s male myths into a questionnaire and presented it to groups of sexually functional and dysfunctional men. They found that men with dysfunctions showed significantly greater belief in the myths than did men who were sexually functional.

Interaction of Psychological and Physical Factors

Having reviewed the various causes, we must now say that seldom is any sexual dysfunction associated exclusively with either psychological or physical factors (Bancroft, 1997; Rosen, 2007; Wiegel et al., 2006). More often, there is a subtle combination of factors. To take a typical example, a young man, vulnerable to developing anxiety and holding to a certain number of sexual myths (the social contribution), may experience erectile failure unexpectedly after using drugs or alcohol, as many men do (the biological contribution). He will anticipate the next sexual encounter with anxiety, wondering if the failure might happen again. This combination of experience and apprehension activates the psychological sequence depicted in Figure 9.4, regardless of whether he’s had a few drinks.

In summary, socially transmitted negative attitudes about sex may interact with a person’s relationship difficulties and predispositions to develop performance anxiety and, ultimately, lead to sexual dysfunction. From a psychological point of view, it is not clear why some individuals develop one dysfunction and not another, although it is common for several dysfunctions to occur in the same patient. Possibly an individual’s specific biological predispositions interact with psychological factors to produce a specific sexual dysfunction.

Treatment of Sexual Dysfunction

Unlike most other disorders discussed in this book, one surprisingly simple treatment is effective for a large number of individuals who experience sexual dysfunction: edu-

cation. Ignorance of the most basic aspects of the sexual response cycle and intercourse often leads to long-lasting dysfunctions (Bach, Wincze, & Barlow, 2001; Wincze et al., 2008; Wincze & Carey, 2001). Consider the case of Carl, who recently came to our sexuality clinic.

Carl • Never Too Late

Carl, a 55-year-old white man, was referred to our clinic by his urologist because he had difficulty maintaining an erection. Although he had never been married, he was involved in an intimate relationship with a 50-year-old woman. This was only his second sexual relationship. A careful interview revealed that Carl engaged in sex twice a week, but requests by the clinician for a step-by-step description of his sexual activities revealed an unusual pattern: Carl skipped foreplay and immediately proceeded to intercourse. Unfortunately, because his partner was not aroused and lubricated, he was unable to penetrate her. His valiant efforts sometimes resulted in painful abrasions for both of them. Two sessions of extensive sex education, including specific step-by-step instructions for carrying out foreplay, provided Carl with a new outlook on sex. For the first time he had successful, satisfying intercourse, much to his delight and his partner's.

In the case of hypoactive sexual desire disorder, a marked difference within a couple often leads to one partner being labeled as having low desire. For example, if one partner is quite happy with sexual relations once a week but the other partner desires sex every day, the latter partner may accuse the former of having low desire and, unfortunately, the former partner might agree. Facilitating better conditions often resolves these misunderstandings. Fortunately for people with this and more complex sexual dysfunctions, treatments are now available, both psychosocial and medical. Advances in medical treatments, particularly for erectile dysfunction, have been dramatic in just the past few years. We look first at psychosocial treatments, then we examine the latest medical procedures.

Psychosocial Treatments

Among the many advances in our knowledge of sexual behavior, none was more dramatic than the publication in 1970 by William Masters and Virginia Johnson of *Human Sexual Inadequacy*. The procedures outlined in this book literally revolutionized sex therapy by providing a brief, direct, and reasonably successful therapeutic program for sexual dysfunctions. Underscoring again the common basis of most sexual dysfunctions, a similar approach to therapy is taken with all patients, male and female, with slight variations depending on the specific sexual problem (for example, premature ejaculation or orgasmic disorder).

This intensive program involves a male and a female therapist to facilitate communication between the dysfunctional partners. (Masters and Johnson were the original male and female therapists.) Therapy is conducted daily over a 2-week period.

The actual program is straightforward. In addition to providing basic education about sexual functioning, altering deep-seated myths, and increasing communication, the clinicians' primary goal is to eliminate psychologically based performance anxiety (refer back to Figure 9.4). To accomplish this, Masters and Johnson introduced *sensate focus* and *nondemand pleasuring*. In this exercise, couples are instructed to refrain from intercourse or genital caressing and simply to explore and enjoy each other's body through touching, kissing, hugging, massaging, or similar kinds of behavior. In the first phase, nongenital pleasuring, breasts and genitals are excluded from the exercises. After successfully accomplishing this phase, the couple moves to genital pleasuring but with a ban on orgasm and intercourse and clear instructions to the man that achieving an erection is not the goal.

At this point, arousal should be reestablished and the couple should be ready to attempt intercourse. So as not to proceed too quickly, this stage is also broken down into parts. For example, a couple might be instructed to attempt the beginnings of penetration—that is, the depth of penetration and the time it lasts are only gradually built up—and both genital and nongenital pleasuring continue. Eventually, full intercourse and thrusting are accomplished. After this 2-week intensive program, recovery was reported by Masters and Johnson for the vast majority of more than 790 sexually dysfunctional patients, with some differences in the rate of recovery depending on the disorder. Close to 100% of individuals with premature ejaculation recovered, whereas the rate for more difficult cases of lifelong generalized erectile dysfunction was closer to 60%.

Sex therapists have expanded on and modified these procedures over the years to take advantage of recent advances in knowledge (see, for example, Bancroft, 1997; Rosen, 2007; Wincze, 2009; Wincze et al., 2008). Results with sex therapy for erectile dysfunction indicate that as many as 60% to 70% of the cases show a positive treatment outcome for at least several years, although there may be some slipping after that (Rosen, 2007; Sarwer & Durlak, 1997; Segraves & Althof, 1998). For better treatment of specific sexual dysfunctions, sex therapists integrate specific procedures into the context of general sex therapy. For example, to treat premature ejaculation, most sex therapists use a procedure developed by Semans (1956), sometimes called the *squeeze* technique, in which the penis is stimulated, usually by the partner, to nearly full erection. At this point, the partner firmly squeezes the penis near the top where the head of the penis joins the shaft, which quickly reduces arousal. These steps are repeated until (for heterosexual partners) eventually the penis is briefly inserted in the vagina without thrusting. If arousal occurs too quickly, the penis is withdrawn and the squeeze technique is used again. In this way, the man develops a sense

of control over arousal and ejaculation. Reports of success with this approach over the past 20 years suggest that 60% to 90% of men benefit, but the success rates drop to about 25% after 3 years or more of follow-up (Althof, 2007; Polonsky, 2000). Gary, the 31-year-old salesman, was treated with this method, and his wife was cooperative during the procedures. Brief marital therapy also persuaded Gary that his insecurity over his perception that his wife no longer found him attractive was unfounded. After treatment, he reduced his work hours somewhat, and the couple's marital and sexual relations improved.

Lifelong female orgasmic disorder may be treated with explicit training in masturbatory procedures. For example, Greta was still unable to achieve orgasm with manual stimulation by her husband, even after proceeding through the basic steps of sex therapy. At this point, following certain standardized treatment programs for this problem (see, for example, Heiman, 2000; Heiman & LoPiccolo, 1988), Greta and Will purchased a vibrator and Greta was taught to let go of her inhibitions by talking out loud about how she felt during sexual arousal, even shouting or screaming if she wanted to. In the context of appropriate genital pleasuring and disinhibition exercises, the vibrator brought on Greta's first orgasm. With practice and good communication, the couple eventually learned how to bring on Greta's orgasm without the vibrator. Summaries of results from a number of studies suggest 70% to 90% of women will benefit from treatment, and these gains are stable and even improve further over time (Heiman, 2007; Heiman & Meston, 1997; Segraves & Althof, 1998).

To treat vaginismus, the woman and, eventually, the partner gradually insert increasingly larger dilators at the woman's pace. After the woman (and then the partner) can insert the largest dilator, in a heterosexual couple, the woman gradually inserts the man's penis. These exercises are carried out in the context of genital and nongenital pleasuring so as to retain arousal. Close attention must be accorded to any increased fear and anxiety that may be associated with the process, which may trigger memories of early sexual abuse that may have contributed to the onset of the condition. These procedures are highly successful, with a large majority of women (80% to 100%) overcoming vaginismus in a relatively short period (Beck, 1993; Binik et al., 2007; Leiblum & Rosen, 2000; Segraves & Althof, 1998; ter Kuile et al., 2007).

A variety of treatment procedures have also been developed for low sexual desire (see, for example, Pridal & LoPiccolo, 2000; Wincze, 2009; Wincze & Carey, 2001). At the heart of these treatments are the standard reeducation and communication phases of traditional sex therapy with,



▲ A therapist usually treats a dysfunction in one partner by seeing the couple together.

possibly, the addition of masturbatory training and exposure to erotic material. Each case may require individual strategies. Remember Mrs. C., who was sexually abused by her cousin? Therapy involved helping the couple understand the impact of the repeated, unwanted sexual experiences in Mrs. C.'s past and to approach sex so that Mrs. C. was more comfortable with foreplay. She gradually lost the idea that once sex was started she had no control. She and her husband worked on starting and stopping sexual encounters. Cognitive restructuring was used to help Mrs. C. interpret her husband's amorousness in a positive rather than a skeptical light. In general, approximately 50% to 70% of individuals with low sexual desire benefit from sex therapy, at least initially (Basson, 2007; Brotto, 2006; Hawton, 1995; Segraves & Althof, 1998).

Medical Treatments

A variety of pharmacological and surgical techniques have been developed in recent years to treat sexual dysfunction, almost all focusing on male erectile disorder. The drug Viagra, introduced in 1998, and similar drugs such as Levitra and Cialis, introduced subsequently, are the best known. We look at the four most popular procedures: oral medication, injection of vasoactive substances directly into the penis, surgery, and vacuum device therapy. Before we begin, note that it is important to combine any medical treatment with a comprehensive educational and sex therapy program to ensure maximum benefit.

In 1998, the drug sildenafil (trade name Viagra) was introduced for erectile dysfunction. Approval from the Food and Drug Administration occurred early in 1998, and results from several clinical trials suggested that between 50% and 80% of a large number of men benefit from this treatment (Conti, Pepine, & Sweeney, 1999; Goldstein et al., 1998) in that erections become sufficient for inter-

course, compared to approximately 30% who benefit from placebo. Results are similar with Cialis and Levitra (Carrier et al., 2005).

However, as many as 30% of men may suffer severe headaches as a side effect, particularly at higher doses (Rosen, 2000, 2007; Virag, 1999), and reports of sexual satisfaction are not optimal. Also, the large majority of men stop using the drug after a trial of several months or a year, indicating less than satisfactory long-term results (Rosen, 2007). To address this issue Bach, Barlow, and Wincze (2004) evaluated the addition of cognitive-behavioral treatment (CBT) to treatment with Viagra. Results were encouraging because couples reported greater satisfaction and increased sexual activity after combined drug therapy and CBT compared to a period when only the drug was used.

There was also some hope that Viagra would be useful for dysfunction in postmenopausal women, but results were disappointing (Kaplan et al., 1999). Berman and colleagues (2003) reported some improvement from Viagra in postmenopausal women with female sexual arousal disorder but only in those women without diminished sexual desire.

For some time, testosterone (Schiavi, White, Mandeli, & Levine, 1997) has been used to treat erectile dysfunction. But although it is safe and has relatively few side effects, only negligible effects on erectile dysfunction have been reported (Mann et al., 1996). Some urologists teach patients to inject vasodilating drugs such as *papaverine* or *prostaglandin* directly into the penis when they want to have sexual intercourse. These drugs dilate the blood vessels, allowing blood to flow to the penis and thereby producing an erection within 15 minutes that can last from 1 to 4 hours (Kim & Lipshultz, 1997; Rosen, 2007; Segraves & Althof, 1998). Because this procedure is a bit painful (although not as much as you might think), a substantial number of men, usually 50% to 60%, stop using it after a short time. In one study, 50 of 100 patients discontinued papaverine for various reasons (Lakin, Montague, Vanderbrug Medendorp, Tesar, & Schover, 1990; Segraves & Althof, 1998). A soft capsule that contains papaverine (called MUSE) can be inserted directly into the urethra, but this is somewhat painful, is less effective than injections, and remains awkward and artificial enough to preclude wide acceptance (Delizonna, Wincze, Litz, Brown, & Barlow, 2001). However, Heiman and colleagues (2006) recently demonstrated that topical application of papaverine externally to women's genitalia produced vasocongestion and arousal in postmenopausal women compared to placebo in the laboratory. Studies must now determine whether this drug treatment is effective outside of the laboratory.

Insertion of *penile prostheses* or implants has been a surgical option for almost 100 years; only recently have they become good enough to approximate normal sexual functioning. One procedure involves implanting a semi-rigid silicone rod that can be bent by the male into correct position for intercourse and maneuvered out of the way at other times. In a more popular procedure, the male squeezes a small pump that is surgically implanted into the

scrotum, forcing fluid into an inflatable cylinder and thus producing an erection. A newer penile prosthetic device is an inflatable rod that contains the pumping device, which is more convenient than having the pump outside the rod. However, surgical implants fall short of restoring presurgical sexual functioning or assuring satisfaction in most patients (Gregoire, 1992; Kim & Lipshultz, 1997); they are now generally used only if other approaches don't work. However, this procedure has proved useful for men who must have a cancerous prostate removed because this surgery often causes erectile dysfunction, although newer "nerve-sparing" surgeries reduce the effect to some extent (Ramsawh, Morgentaler, Covino, Barlow, & DeWolf, 2005).

Another approach is *vacuum device therapy*, which works by creating a vacuum in a cylinder placed over the penis. The vacuum draws blood into the penis, which is then trapped by a specially designed ring placed around the base of the penis. Although using the vacuum device is rather awkward, between 70% and 100% of users report satisfactory erections, particularly if psychological sex therapy is ineffective (Segraves & Althof, 1998; Witherington, 1988). The procedure is also less intrusive than surgery or injections, but it remains awkward and artificial enough to preclude wide acceptance (Delizonna et al., 2001).

Summary

Treatment programs, both psychosocial and medical, offer hope to most people who suffer from sexual dysfunctions. Unfortunately, such programs are not readily available in many locations because few health and mental health professionals are trained to apply them, although the availability of drugs for male erectile dysfunction is widespread. Psychological treatment of sexual arousal disorders requires further improvement, and treatments for low sexual desire are largely untested. New medical developments appear yearly, but most are still intrusive and clumsy, although drugs such as Viagra and Levitra exhibit some success for erectile dysfunction and many more such drugs are in development.

Unfortunately, most health professionals tend to ignore the issue of sexuality in older adults. Along with the usual emphasis on communication, education, and sensate focus, appropriate lubricants for women and a discussion of methods to maximize the erectile response in men should be a part of any sexual counseling for older couples. More important, even with reduced physical capabilities, continued sexual relations, not necessarily including intercourse, should be an enjoyable and important part of an aging couple's relationship.



▲ An inflatable penile implant may be used for men with inadequate sexual functioning.

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Concept Check 9.3

Determine whether the following statements are true (T) or false (F) in regard to the causes and treatments of sexual dysfunctions.

1. ____ Many physical and medical conditions and their treatments (for example, prescription medications) contribute to sexual dysfunction; however, many doctors are unaware of the connection.
2. ____ Anxiety always decreases or even eradicates sexual arousal.
3. ____ Sexual dysfunctions can result from a growing dislike for a partner, traumatic sexual events, or childhood lessons about the negative consequences of sexual behavior.
4. ____ A simple, effective treatment for many disorders is education.
5. ____ All sexual dysfunctions are treated with the same psychosocial technique.
6. ____ Most surgical and pharmacological treatments of recent years have focused on male erectile disorder.

Paraphilia: Clinical Descriptions

- › What are the clinical features of the major paraphilias?
- › What is known about the causes of paraphilias?

If you are like most people, your sexual interest is directed to other physically mature adults (or late adolescents), all of whom are capable of freely offering or withholding their consent. But what if you are sexually attracted to something or somebody other than another adult, such as animals (particularly horses and dogs) (Williams & Weinberg, 2003) or a vacuum cleaner? (Yes, it does happen!) Or what if your only means of obtaining sexual satisfaction is to commit a brutal murder? Such patterns of sexual arousal and countless others exist in a large number of individuals, causing untold human suffering both for them and, if their behavior involves other people, for their victims. As noted in the beginning of the chapter, these disorders of sexual arousal are called **paraphilias**.

Over the years, we have assessed and treated a large number of these individuals, ranging from the slightly eccentric and sometimes pitiful case to some of the most dangerous killer-rapists encountered anywhere. Many of our patients may present with two, three, or more patterns, although one is usually dominant (Abel et al., 1987; Abel, Becker, Cunningham-Rathner, Mittelman, & Rouleau, 1988; Brownell, Hayes, & Barlow, 1977). Furthermore, it is not uncommon for individuals with paraphilia to also suffer from comorbid mood, anxiety, and substance abuse disorders (Kafka & Hennen, 2003; Raymond, Coleman, Ohlerking, Christenson, & Miner, 1999). Although paraphilias are not widely prevalent and estimates of their frequency are hard to come by, some disorders, such as transvestic fetishism (cross-dressing, discussed later), seem relatively common (Bancroft, 1989; Mason, 1997). You may have been the victim of **frotteurism** in a large city, typically on a crowded subway or bus. (We mean really crowded, with people packed in like sardines.) In this situation, women have been known to experience more than the usual jostling and pushing from behind. What they

discover, much to their horror, is a male with a frotteuristic arousal pattern rubbing against them until he is stimulated to the point of ejaculation. Because the victims cannot escape easily, the frotteuristic act is usually successful (Lussier & Piché, 2008).

Fetishism

In **fetishism**, a person is sexually attracted to nonliving objects. There are almost as many types of fetishes as there are objects, although women's undergarments and shoes are popular (Darcangelo, 2008). Fetishistic arousal is associated with two classes of objects or activities: (1) an inanimate object or (2) a source of specific tactile stimulation, such as rubber, particularly clothing made out of rubber. Shiny black plastic is also used (Bancroft, 1989; Junginger, 1997). Most of the person's sexual fantasies, urges, and desires focus on this object. A third source of attraction (sometimes called *partialism*) is a part of the body, such as the foot, buttocks, or hair, but this attraction is no longer technically classified as a fetish because distinguishing it from more normal patterns of arousal is often difficult.

paraphilias A sexual disorder or deviation in which sexual arousal occurs almost exclusively in the context of inappropriate objects or individuals.

frotteurism Paraphilia in which the person gains sexual gratification by rubbing against unwilling victims in crowds from which they cannot escape.

fetishism Long-term, recurring, intense sexually arousing urges, fantasies, or behavior involving the use of nonliving, unusual objects, which cause distress or impairment in life functioning.

Voyeurism and Exhibitionism

Voyeurism is the practice of observing, to become aroused, an unsuspecting individual undressing or naked. **Exhibitionism**, by contrast, is achieving sexual arousal and gratification by exposing genitals to unsuspecting strangers. Consider the case of Robert.

Robert ♦ Outside the Curtains

Robert, a 31-year-old, married, blue-collar worker, reported that he first started “peeping” into windows when he was 14. He rode around the neighborhood on his bike at night, and when he spotted a female through a window he stopped and stared. During one of these episodes, he felt the first pangs of sexual arousal. Eventually he began masturbating while watching, thereby exposing his genitals, although out of sight. When he was older, he drove around until he spotted some prepubescent girls. He parked his car near them, unzipped his fly, called them over, and attempted to carry on a nonsexual conversation. Later he was sometimes able to talk a girl into mutual masturbation and *fellatio*, or oral stimulation of the penis. Although he was arrested several times, paradoxically, the threat of arrest increased his arousal (Barlow & Wincze, 1980).

DSM Disorder Criteria Summary Fetishism

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving the use of nonliving objects (e.g., female undergarments).
- B. The fantasies, sexual urges, or behaviors cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- C. The fetish objects are not limited to articles of female clothing used in cross-dressing (as in Transvestic Fetishism) or devices designed for the purpose of tactile genital stimulation (e.g., a vibrator).

Source: Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

Remember that anxiety actually increases arousal under some circumstances. Many voyeurs just don't get the same satisfaction from attending readily available strip shows at a local bar.

The Lawyer Who Needed the Bus

Several years ago, a distinguished lawyer reported that he needed help and that his career was on the line. An intelligent, good-looking single man, he noted without bragging that he could have sex with any number of beautiful women in the course of his law practice. However, the only way he could become aroused was to leave his office, go down to the bus stop, ride around the city until a reasonably attractive young woman got on, expose himself just before the next stop, and then run off the bus, often with people chasing after him. To achieve maximal arousal, the bus could not be full or empty; there had to be just a few people sitting on the bus, and the woman getting on had to be the right age. Sometimes hours would pass before these circumstances lined up correctly. The lawyer observed that if he was not fired for exhibitionism he would be fired for all the time he was missing from work. On several occasions he had requested a girlfriend to role-play sitting on a bus in his apartment. Although he exposed himself to her, he could not achieve sexual arousal and gratification because the activity just wasn't exciting.

Although prevalence is unknown (Murphy & Page, 2008), in a random sample of 2,450 adults in Sweden, 31% reported at least one incident of being sexually aroused by exposing their genitals to a stranger and 7.7% reported at least one incident of being sexually aroused by spying on others having sex (Långström & Seto, 2006). To meet diagnosis for exhibitionism, the behavior must occur repeatedly and be compulsive or out of control.

DSM Disorder Criteria Summary Voyeurism and Exhibitionism

DSM-IV TR Criteria for Voyeurism

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving the act of observing an unsuspecting person who is naked, in the process of disrobing, or engaging in sexual activity.

DSM-IV TR Criteria for Exhibitionism

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving the exposure of one's genitals to an unsuspecting stranger.

Note: both disorders share the following criteria:

- B. The person has acted on these sexual urges, or the sexual urges or fantasies cause marked distress or interpersonal difficulty.

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Transvestic Fetishism

In **transvestic fetishism**, sexual arousal is strongly associated with the act of dressing in clothes of the opposite sex, or cross-dressing (Wheeler, Newring, & Draper, 2008). Consider the case of Mr. M.

Mr. M. • Strong Man in a Dress

Mr. M., a 31-year-old married police officer, came to our clinic seeking treatment for uncontrollable urges to dress in women's clothing and appear in public. He had been doing this for 16 years and had been discharged from the Marine Corps for cross-dressing. Since then he had risked public disclosure on several occasions. Mr. M.'s wife had threatened to divorce him because of the cross-dressing, yet she often purchased women's clothing for him and was "compassionate" while he wore them.

Note that Mr. M. was in the Marine Corps before he joined the police force. It is not unusual for males who are strongly inclined to dress in female clothes to compensate by associating with so-called macho organizations. Nevertheless, most individuals with this disorder do not seem to display any compensatory behaviors. The same survey in Sweden mentioned earlier found 2.8% of men and 0.4% of women reported at least one episode of transvestic fetishism (Långström & Zucker, 2005).

Of note, the wives of many men who cross-dress have accepted their husbands' behavior and can be supportive if it is a private matter between them. Docter and Prince (1997) reported that 60% of more than 1,000 men with transvestic fetishism were married at the time of the survey. Some people, both married and single, join cross-dressing clubs that meet periodically or subscribe to newsletters devoted to the topic.

Sexual Sadism and Sexual Masochism

Both **sexual sadism** and **sexual masochism** are associated with either inflicting pain or humiliation (sadism) or suffering pain or humiliation (masochism) (Hucker, 2008; Yates, Hucker, & Kingston, 2008). Although Mr. M. was extremely concerned about his cross-dressing, he was also disturbed by another problem. To maximize his sexual pleasure during intercourse with his wife, he had her wear a collar and leash, tied her to the bed, and handcuffed her. He sometimes tied himself with ropes, chains, handcuffs, and wires, all while he was cross-dressed. Mr. M. was concerned he might injure himself seriously. In many such cases, something goes wrong and the individual accidentally hangs himself, an event that should be distinguished from the closely related condition called *hypoxiphilia*, which involves self-strangulation to reduce the flow of oxygen to the brain and enhance the sensation of orgasm. It

may seem paradoxical that someone has to either inflict or receive pain to become sexually aroused, but these types of cases are not uncommon. On many occasions, the behaviors themselves are mild and harmless (Krueger, 2010), but they can become dangerous and costly.

DSM Disorder Criteria Summary Sexual Sadism and Sexual Masochism

DSM-IV TR Criteria for Sexual Sadism

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving acts (real, not simulated) in which the psychological or physical suffering (including humiliation) of the victim is sexually exciting to the person.
- B. The person has acted on these sexual urges with a nonconsenting person, or the sexual urges or fantasies cause marked distress or interpersonal difficulty.

DSM-IV TR Criteria for Sexual Masochism

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving the act (real, not simulated) of being humiliated, beaten, bound, or otherwise made to suffer.
- B. The fantasies, sexual urges, or behaviors cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

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Sadistic Rape

After murder, rape is the most devastating assault one person can make on another. It is not classified as a paraphilia because most instances of rape are better characterized as an assault by a male (or, rarely, a female) whose patterns of sexual arousal are not paraphilic. Instead, many rapists meet criteria for antisocial personality disorder (see Chapter 11) and may engage in a variety of antisocial and aggressive acts (Bradford & Meston, 2011; McCabe & Wauchope, 2005; Quinsey, 2010). Many rapes could be described as opportunistic, in that an aggressive or antisocial individual with a marked lack of empathy and disregard for inflicting pain on others (Bernat, Calhoun, & Adams, 1999) spontaneously took advantage of a vulnerable and unsuspecting woman. These unplanned assaults often occur during robberies or other criminal events. Rapes can also be motivated by anger and vindictiveness against specific women and may have been planned in advance (Hucker, 1997; Knight & Prentky, 1990; McCabe & Wauchope, 2005; Quinsey, 2010).

voyeurism Paraphilia in which sexual arousal is derived from observing unsuspecting individuals undressing or naked.

exhibitionism A sexual gratification attained by exposing genitals to unsuspecting strangers.

transvestic fetishism Paraphilia in which individuals, usually males, are sexually aroused or receive gratification by wearing clothing of the opposite sex.

sexual sadism Paraphilia in which sexual arousal is associated with inflicting pain or humiliation.

sexual masochism Paraphilia in which sexual arousal is associated with experiencing pain or humiliation.

A number of years ago we determined in our sexuality clinic that certain rapists do fit definitions of paraphilia closely and could probably better be described as sadists, a finding that has since been confirmed (McCabe & Wauchope, 2005; Quinsey, 2010). We constructed two audiotapes on which were described (1) mutually enjoyable sexual intercourse and (2) sexual intercourse involving force on the part of the male (rape). The nonrapists became sexually aroused to descriptions of mutually consenting intercourse but not to those involving force. Rapists, however, became aroused by both types of descriptions.

Pedophilia and Incest

Perhaps the most tragic sexual deviance is a sexual attraction to children (or young adolescents), called **pedophilia** (Blanchard, 2010; Seto, 2009). People around the world have become more aware of this problem following the well-publicized scandal in the Catholic Church, where priests, many of whom undoubtedly met criteria for pedophilia, abused children repeatedly, only to be transferred to another church where they would do it again. Individuals with this pattern of arousal may be attracted to male children, female children, or both. In one survey, as many as 12% of men and 17% of women reported being touched inappropriately by adults when they were children; another survey estimated that the number of sexually abused children rose 125% in the 1990s to more than 330,000 children in the United States (Fagan, Wise, Schmidt, & Berlin, 2002). Approximately 90% of abusers are male, and 10% are female (Fagan et al., 2002; Seto, 2009). Much as with adult rape, as many as 40% to 50% of sexual offenders do not have pedophilic arousal patterns and do not meet criteria for pedophilia. Rather, their offenses are associated with brutal antisocial and aggressive opportunistic acts (Blanchard, 2010; Seto, 2009). Child pornography investigations have made much news lately, and individuals convicted of downloading child pornography often defend themselves by pointing out that they were “just looking” and are not pedophiles. But now an

important study indicates that being charged with a child pornography offense is one of the best diagnostic indications of pedophilia (Seto, Cantor, & Blanchard, 2006).

If the children are the person’s relatives, the pedophilia takes the form of **incest**. Although pedophilia and incest have much in common, victims of pedophilia tend to be young children and victims of incest tend to be girls beginning to mature physically (Rice & Harris, 2002). Marshall, Barbaree, and

Christophe (1986) and Marshall (1997) demonstrated by using penile strain gauge measures that incestuous males are, in general, more aroused by adult women than are males with pedophilia, who tend to focus exclusively on children. Thus, incestuous relations may have more to do with availability and interpersonal issues ongoing in the family than pedophilia, as in the case of Tony.

Tony • More and Less a Father

Tony, a 52-year-old married television repairman, came in depressed. About 10 years earlier he had begun sexual activity with his 12-year-old daughter. Light kissing and some fondling gradually escalated to heavy petting and, finally, mutual masturbation. When his daughter was 16 years old, his wife discovered the ongoing incestuous relationship. She separated from her husband and eventually divorced him, taking her daughter with her. Soon, Tony remarried. Just before his initial visit to our clinic, Tony visited his daughter, then 22 years old, who was living alone in a different city. They had not seen each other for 5 years. A second visit, shortly after the first, led to a recurrence of the incestuous behavior. At this point, Tony became extremely depressed and told his new wife the whole story. She contacted our clinic with his full cooperation while his daughter sought treatment in her own city.

DSM Disorder Criteria Summary Pedophilia

- A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a prepubescent child or children (generally age 13 years or younger).
- B. The person has acted on these sexual urges, or the sexual urges or fantasies cause marked distress or interpersonal difficulty.
- C. The person is at least age 16 years and at least 5 years older than the child or children in Criterion A.

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▲ Murderer Jeffrey Dahmer obtained sexual gratification from acts of sadism and cannibalism. (In prison, he was killed by fellow inmates.)

We return to the case of Tony later, but several features are worth noting. First, Tony loved his daughter and was bitterly disappointed and depressed over his behavior. Occasionally, a child molester is abusive and aggressive, sometimes killing the victims; in these cases, the disorder is often both sexual sadism and pedophilia. But most child molesters are *not* physically abusive. Rarely is a child physically forced or injured. From the molester’s perspec-

tive, no harm is done because there is no physical force or threats. Child molesters often rationalize their behavior as “loving” the child or teaching the child useful lessons about sexuality. The child molester almost never considers the psychological damage the victim suffers, yet these interactions often destroy the child’s trust and ability to share intimacy. Child molesters rarely gauge their power over the children, who may participate in the molestation without protest yet be frightened and unwilling. Often children feel responsible for the abuse because no outward force or threat was used by the adult, and only after the abused children grow up are they able to understand they were powerless to protect themselves and not responsible for what was done to them.

Paraphilia in Women

Estimates suggest that approximately 5% to 10% of all sexual offenders are women (Logan, 2009; Wiegel, 2008). For example, Federoff, Fishell, and Federoff (1999) have reported 12 cases of women with paraphilia seen in their clinic. One heterosexual woman was convicted of sexually molesting an unrelated 9-year-old boy while she was babysitting. It seems she had touched the boy’s penis and asked him to masturbate in front of her while she watched religious programs on television. It is not unusual for individuals with paraphilia to rationalize their behavior by engaging in some other practices that they consider to be morally correct or uplifting at the same time. Yet another woman came to treatment because of her “uncontrollable” rituals of undressing in front of her apartment window and masturbating approximately five times a month. In addition she would, occasionally, drive her truck through the neighborhood, where she would attempt to befriend cats and dogs by offering them food. She would then place honey or other food substances on her genital area so that the animals would lick her. As with most people with paraphilias, the woman was horrified by this activity and was seeking treatment to eliminate it, although she found it highly sexually arousing.

Causes of Paraphilia

Although no substitute for scientific inquiry, case histories often provide hypotheses that can then be tested by controlled scientific observations. Let’s return to the cases of Robert and Tony to see if their histories contain any clues.

Robert ♦ Revenge on Repression

Robert (who sought help for exhibitionism) was raised by a stern authoritarian father and a passive mother in a small Texas town. His father, who was a firm believer in old-time religion, often preached the evils of sexual intercourse to his family. Robert learned little about sex from his father except that it

was bad, so he suppressed any emerging heterosexual urges and fantasies and as an adolescent felt uneasy around girls his own age. By accident, he discovered a private source of sexual gratification: staring at attractive and unsuspecting females through the window. This led to his first masturbatory experience.

Robert reported in retrospect that being arrested was not so bad because it disgraced his father, which was his only way of getting back at him. The courts treated him lightly (which is not unusual), and his father was publicly humiliated, forcing the family to move from their small Texas town (Barlow & Wincze, 1980).

Tony ♦ Trained Too Young

Tony, who sought help because of an incestuous relationship with his daughter, was brought up in a reasonably loving and outwardly normal Catholic family, but he had an uncle who did not fit the family pattern. When he was 9 or 10, Tony was encouraged by his uncle to observe a game of strip poker that the uncle was playing with a neighbor’s wife. During this period, he also observed his uncle fondling a waitress at a drive-in restaurant and shortly thereafter was instructed by his uncle to fondle his young female cousin. Thus, he had an early model for mutual fondling and masturbation and obtained some pleasure from interacting in this way with young girls. Although the uncle never touched Tony, his behavior was clearly abusive. When Tony was about 13, he engaged in mutual manipulation with a sister and her girlfriend, which he remembers as pleasurable. Later, when Tony was 18, a brother-in-law took him to a prostitute and he first experienced sexual intercourse. He remembered this visit as unsatisfactory because, on that and subsequent visits to prostitutes, he ejaculated prematurely—a sharp contrast to his early experience with young girls. Other experiences with adult women were also unsatisfactory. When he joined the service and was sent overseas, he sought out prostitutes who were often as young as 12.

pedophilia Paraphilia involving strong sexual attraction toward children.
incest A deviant sexual attraction (pedophilia) directed toward a family member; often the attraction of a father toward a daughter who is maturing physically.

These cases remind us that deviant patterns of sexual arousal often occur in the context of other sexual and social problems. Undesired kinds of arousal may be associated with deficiencies in levels of “desired” arousal with consensual adults; this was certainly true for both Tony and Robert, whose sexual relationships with adults were incomplete. In many cases, an inability to develop adequate social relations with the appropriate people for sexual relationships seems to be associated with a developing of inappropriate sexual outlets (Barlow & Wincze, 1980; Marshall, 1997). Indeed, integrated theories of the causes of paraphilias all note the presence of disordered relationships during childhood and adolescence with resulting deficits in healthy sexual development (Marshall & Barbaree, 1990; Ward & Beech, 2008). However, many people with deficient sexual and social skills do not develop deviant patterns of arousal.

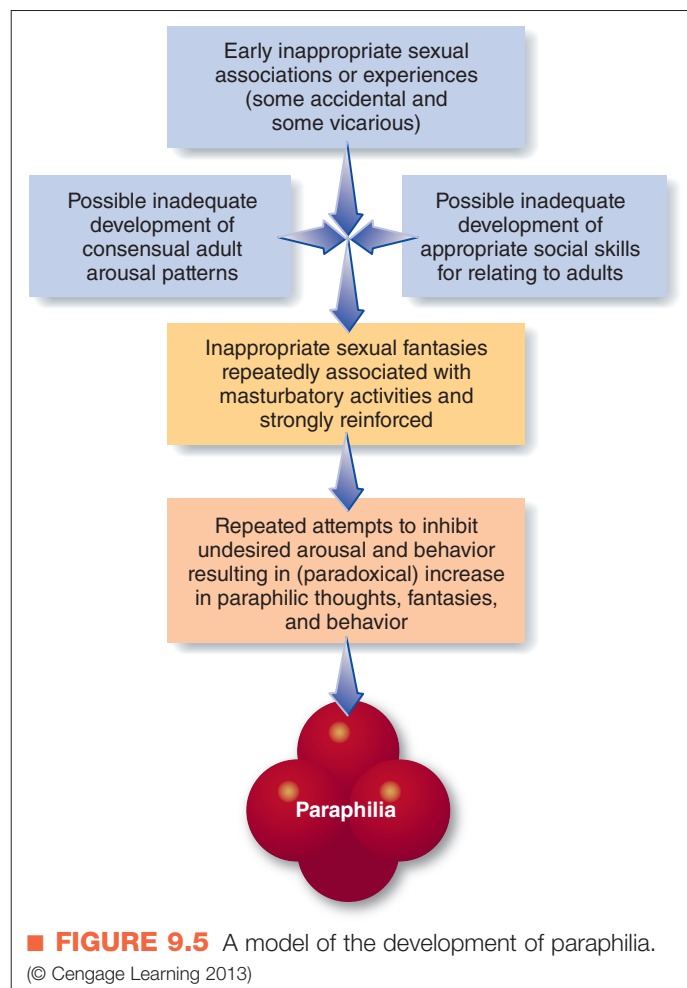
Early experience seems to have an effect that may be accidental. Tony’s early sexual experiences just happened to be of the type he later found sexually arousing. Many pedophiles also report being abused themselves as children, which turns out to be a strong predictor of later sexual abuse by the victim (Fagan et al., 2002). Robert’s first erotic experience occurred while he was “peeping.” But many of us do not find our early experiences reflected in our sexual patterns.

Another factor may be the nature of the person’s early sexual fantasies. For example, Rachman and Hodgson (1968; see also Bancroft, 1989) demonstrated that sexual arousal could become associated with a neutral object—a boot, for example—if the boot was repeatedly presented while the individual was sexually aroused. One of the most powerful engines for developing unwanted arousal may be early sexual fantasies that are repeatedly reinforced through the strong sexual pleasure associated with masturbation (Bradford & Meston, 2011). Before a pedophile or sadist ever acts on his behavior, he may fantasize about it thousands of times while masturbating. Expressed as a clinical or operant-conditioning paradigm, this is another example of a learning process in which a behavior (sexual arousal to a specific object or activity) is repeatedly reinforced through association with a pleasurable consequence (orgasm). This mechanism may explain why paraphilias are almost exclusively male disorders. The basic differences in frequency of masturbation between men and women that exist across cultures may contribute to the differential development of paraphilias. However, if early experiences contribute strongly to later sexual arousal patterns, then what about the Sambia males who practice exclusive homosexual behavior during childhood and early adolescence and yet are exclusively heterosexual as adults? In such cohesive societies, the social demands or “scripts” for sexual interactions are stronger and more rigid than in our culture and thus may override the effects of early experiences (Baldwin & Baldwin, 1989).

In addition, therapists and sex researchers who work with paraphilics have observed what seems to be an incredibly strong sex drive. It is not uncommon for some paraphilics to masturbate three or four times a day. In one case seen in our clinic, a sadistic rapist masturbated approximately

every half hour all day long, just as often as it was physiologically possible. We have speculated elsewhere that activity this consuming may be related to the obsessional processes of obsessive-compulsive disorder (Barlow, 2002). In both instances, the very act of trying to suppress unwanted, emotionally charged thoughts and fantasies seems to have the paradoxical effect of *increasing* their frequency and intensity (see Chapter 4). This process is also ongoing in people with eating disorders and addictions, when attempts to restrict strong addictive cravings lead to uncontrollable increases in the undesired behaviors.

Psychopathologists are also becoming interested in the phenomenon of weak inhibitory control across these paraphilic disorders, which may indicate a weak biologically based behavioral inhibition system (BIS) in the brain (Fowles, 1993; Kafka, 1997; Ward & Beech, 2008) that might repress serotonergic functioning. The model shown in ■ Figure 9.5 incorporates the factors thought to contribute to the development of paraphilia. Nevertheless, all speculations, including the hypotheses we have described, have little scientific support at this time. For example, this model does not include the biological dimension. Excess arousal in paraphilics could be biologically based. Before we can make any steadfast conclusions here, more research is needed.





› What psychosocial and drug treatments are available for paraphilias, and how effective are they?

In recent years, researchers have developed sophisticated methods for assessing specific patterns of sexual arousal (Maletzky, 1998; Wincze, 2009). This development is important in studying paraphilia because sometimes even the individual presenting with the problem is not fully aware of what caused arousal.

Using the model of paraphilia described previously, we assess each patient not only for the presence of deviant arousal, but also for levels of appropriate arousal to adults, for social skills, and for the ability to form relationships. Tony had no problems with social skills: He was 52 years old, reasonably happily married, and generally compatible with his second wife. His major difficulty was his continuing strong, incestuous attraction to his daughter. Nevertheless, he loved his daughter and wished strongly to interact in a normal fatherly way with her.

Psychological Treatment

A number of treatment procedures are available for decreasing unwanted arousal. Most are behavior therapy procedures directed at changing the associations and context from arousing and pleasurable to neutral. One procedure, carried out entirely in the imagination of the patient, called **covert sensitization**, was first described by Joseph Cautela (1967; see also Barlow, 1993). In this treatment, patients associate sexually arousing images in their imagination with some reasons why the behavior is harmful or dangerous. Before treatment, the patient knows about these reasons, but the immediate pleasure and strong reinforcement the sexual activity provides is enough to overcome any thoughts of possible harm or danger that might arise in the future.

In imagination, harmful or dangerous consequences can be associated directly with the unwanted behavior and arousal in a powerful and emotionally meaningful way. One of the most powerful negative aspects of Tony's behavior was his embarrassment over the thought of being discovered by his current wife; other family members; or, most important, the family priest. Therefore, he was guided through the fantasy described here.

Tony ♦ Imagining the Worst

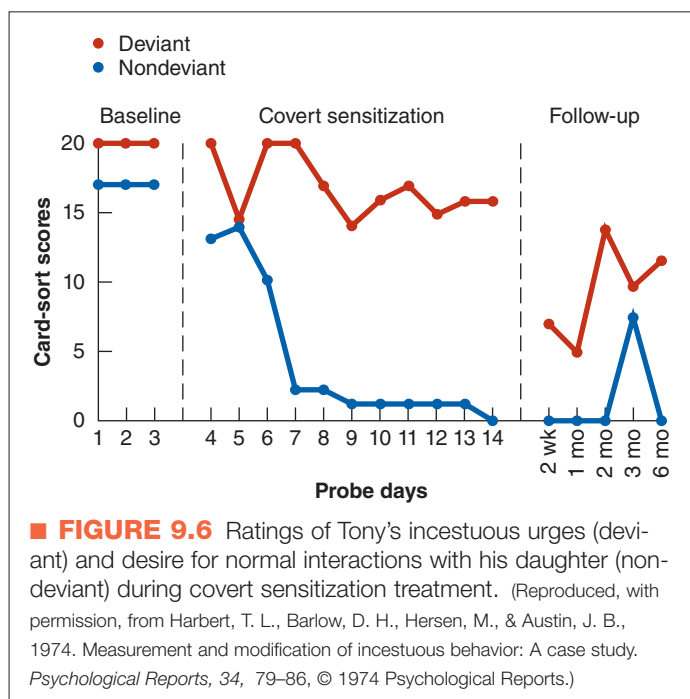
You are alone with your daughter in your trailer. You realize that you want to caress her breasts. So you put your arm around her, slip your hand inside her blouse, and begin to caress her breasts. Unexpectedly the door to the trailer opens and in walks your wife

with Father X. Your daughter immediately jumps up and runs out the door. Your wife follows her. You are left alone with Father X. He is looking at you as if waiting for an explanation of what he has just seen. Seconds pass, but they seem like hours. You know what Father X must be thinking as he stands there staring at you. You are embarrassed and want to say something, but you can't seem to find the right words. You realize that Father X can no longer respect you as he once did. Father X finally says, "I don't understand this; this is not like you." You both begin to cry. You realize that you may have lost the love and respect of both Father X and your wife, who are important to you. Father X asks, "Do you realize what this has done to your daughter?" You think about this and you hear your daughter crying; she is hysterical. You want to run, but you can't. You are miserable and disgusted with yourself. You don't know if you will ever regain the love and respect of your wife and Father X.

(Reproduced, with permission of the authors and publisher, from Harbert, T. L., Barlow, D. H., Hersen, M., & Austin, J. B., 1974. Measurement and modification of incestuous behavior: A case study. *Psychological Reports*, 34, 79–86, © 1974 Psychological Reports.)

During six or eight sessions, the therapist narrates such scenes dramatically, and the patient is then instructed to imagine them daily until all arousal disappears. The results of Tony's treatment are presented in Figure 9.6. "Card-sort scores" are a measure of how much Tony wanted sexual interactions with his daughter in comparison with his wish for nonsexual fatherly interactions. His incestuous arousal was largely eliminated after 3 to 4 weeks, but the treatment did not affect his desire to interact with his daughter in a healthier manner. These results were confirmed by psychophysiological measurement of his arousal response. A return of some arousal at a 3-month follow-up prompted us to ask Tony if anything unusual was happening in his life. He confessed that his marriage had taken a turn for the worse and sexual relations with his wife had all but ceased. A period of marital therapy restored the therapeutic gains (see ■ Figure 9.6). Several years later, after his daughter's

covert sensitization A cognitive-behavioral intervention to reduce unwanted behaviors by having clients imagine the extremely aversive consequences of the behaviors and establish negative rather than positive associations with them.



therapist decided she was ready, she and Tony resumed a nonsexual relationship, which they both wanted.

Two major areas in Tony's life needed treatment: deviant (incestuous) sexual arousal and marital problems. Most individuals with paraphilic arousal patterns need a great deal of attention to family functioning or other interpersonal systems in which they operate (Barbaree & Seto, 1997; Fagan et al., 2002; Rice & Harris, 2002). In addition, many require intervention to help strengthen appropriate patterns of arousal. In **orgasmic reconditioning**, patients are instructed to masturbate to their usual fantasies but to substitute more socially acceptable ones just before ejaculation. With repeated practice, patients should be able to begin the desired fantasy earlier in the masturbatory process and still retain their arousal. This technique, first described by Gerald Davison (1968), has been used with some success in a variety of settings (Brownell et al., 1977; Maletzky, 2002). Finally, as with most strongly pleasurable but undesirable behaviors (including addiction), care must be taken to provide the patient with coping skills to prevent slips or relapses. *Relapse prevention* treatment created for addictions (Laws, 1989; Laws & O'Donohue, 1997) does just that. Patients are taught to recognize the early signs of temptation and to institute a variety of self-control procedures before their urges become too strong.

Evidence on the effects of psychological treatments for sexual offenders is decidedly mixed at this time. For sexual offenders who have come into contact with the legal system, including those who are incarcerated (obviously a very severe group), the results are modest at best in terms of preventing later occurrences of offending (termed recidivism). Reviews of large numbers of studies with these populations are hampered because of the substantially different methods and procedures in accessing recidivism

rates. But several large surveys following up sexual offenders for a period of 4 to 5 years indicate reductions in sexual recidivism (that is, reoffending) of up to 11% to 20% over what would be expected with the usual and customary treatment, with cognitive-behavioral programs proving to be the most effective in reducing recidivism (Hanson et al., 2002; Lösel & Schmucker, 2005). However, a large study from the state of California with participants who were incarcerated for their sexual offense showed very little effect of any intervention in rates of sexual or violent offending over an 8-year follow-up period after these individuals were released (Marques, Wederanders, Day, Nelson, & van Ommeren, 2005).

For outpatients, however, there is at least some evidence for success when treatment is carried out by an experienced professional. For example, Barry Maletzky, a psychiatrist at the University of Oregon Medical School, and his staff reported on the treatment of more than 8,000 sexual offenders of numerous types over 20 years (Maletzky, 2002). A variety of procedures were used in a program of 3 to 4 months in a clinic devoted exclusively to this type of treatment. What makes the report notable is that Maletzky collected objective physiological outcome measures using the penile strain gauge described earlier with almost every participant in the program, in addition to patients' reports of progress. In many cases, he also obtained corroborating information from families and legal authorities.

In his follow-up of these patients, Maletzky defined a treatment as successful when someone had (1) completed all treatment sessions, (2) demonstrated no deviant sexual arousal on objective physiological testing at any annual follow-up testing session, (3) reported no deviant arousal or behavior at any time since treatment ended, and (4) had no legal record of any charges of deviant sexual activity, even if unsubstantiated. He defined as a treatment failure anyone who was not a success. Any offender who did not complete treatment for any reason was counted as a failure, even though some may have benefited from the partial treatment and gone on to recover. Using this criteria, from 75% to 95% of individuals, depending on the type of sexual offense (such as pedophilia, rape, or voyeurism), had a successful outcome. However, Maletzky's results were not derived from a scientifically controlled clinical trial.

Men who rape had the lowest success rate among all offenders with a single diagnosis (75%) and individuals with multiple paraphilias had the lowest success rate of any group. Maletzky also examined factors associated with failure. Among the strongest predictors were a history of unstable social relationships, an unstable employment history, strong denial the problem exists, a history of multiple victims, and a situation in which the offender continues to live with a victim (as might be typical in cases of incest). Many of these problems characterize the presumably more severe incarcerated population mentioned above.

Nevertheless, other groups using similar treatment procedures have achieved comparable success rates (Abel, 1989; Becker, 1990; Fagan et al., 2002; Pithers, Martin, & Cumming, 1989). Therapist knowledge and expertise seems

to be important in successfully carrying out these treatments to prevent future sexual offenses among patients.

Drug Treatments

The most popular drug used to treat paraphilics is an anti-androgen called *cypoterone acetate* (Bradford, 1997; Seto, 2009). This “chemical castration” drug eliminates sexual desire and fantasy by reducing testosterone levels dramatically, but fantasies and arousal return as soon as the drug is removed. A second drug is *medroxyprogesterone* (Depo-Provera is the injectable form), a hormonal agent that reduces testosterone (Fagan et al., 2002). These drugs may be useful for dangerous sexual offenders who do not respond to alternative treatments or to temporarily suppress sexual arousal in patients who require it, but it is not always successful.

Summary

Based on evidence from a number of settings, evidence for the psychosocial treatment of paraphilia is mixed, with more success reported in outpatient settings with presumably less severe, more stable patients. But most results are uncontrolled observations from a small number of clinical research centers, and results may not be as good in other clinics and offices. In any case, as with treatment for sexual dysfunctions, psychosocial approaches to paraphilia are not readily available outside of specialized treatment centers. In the meantime, the outlook for most individuals with these disorders is bleak because paraphilias run a chronic course and recurrence is common.

Concept Check 9.4

Check your understanding of sexual paraphilias by matching the scenarios with the correct label: (a) exhibitionism, (b) voyeurism, (c) fetishism, or (d) sexual masochism.

1. Mae enjoys being slapped with leather whips during foreplay. Without such stimulation, she is unable to achieve orgasm during sex. ____
2. Kai has a collection of women’s panties that arouse him. He loves to look at, collect, and wear them. ____
3. Sam finds arousal in walking up to strangers in the park and showing them his genitals. ____
4. Peeping Tom loves to look through Susie’s bedroom window and watch her undress. He gets extremely excited as she disrobes. He is practicing ____.
5. What Peeping Tom does not realize is that Susie knows that he is watching. She is aroused by slowly undressing while others are watching, and she fantasizes about what they are thinking. Susie’s behavior is called ____.
6. What Peeping Tom will be shocked to find out is that “Susie” is actually Scott, a man who can become aroused only if he wears feminine clothing. Scott’s behavior is ____.

orgasmic reconditioning The learning procedure to help clients strengthen appropriate patterns of sexual arousal by pairing appropriate stimuli with the pleasurable sensations of masturbation.



On the Spectrum

Gender Nonconformity in Children and Gender Variation in Adults

Earlier in this chapter, we discussed the findings on what is now called gender nonconformity in children and noted that long-term prospective follow-up studies indicate a complex relationship between gender nonconformity as a child and the development of gender identity, sexual orientation, or both as an adult. Briefly, findings indicate that a higher proportion of gender-nonconforming children develop a homosexual orientation as adults compared to those who are gender conforming. But most individuals with homosexual orientations as adults conform to their biological sex as children (boys act like boys and girls act like girls). It is also

clear that a small minority of gender-nonconforming children are expressing a gender identity disorder in which their gender is different from their biological sex. These children will consistently identify with the opposite sex, thereby meeting diagnostic criteria for gender identity disorder in adulthood. We also reviewed research by Fausto-Sterling (2000b)—on intersexed individuals who may have some physical characteristics of the opposite sex—who surmises that both physical sex and gender identity may occur on a continuum.

A question under debate is whether to refer gender-nonconforming children for interventions early on that would bring their

behavior and interests more into line with their biological sex. On the one hand, some segments of society, particularly in more traditionally tolerant areas of the country such as San Francisco and New York, are becoming more open to gender variations in both children and adults. In 2006, New York City decided to let people alter the sex listed on their birth certificates, which is certainly helpful to intersexed individuals who decide to live as the gender consistent with their current identity but not the identity assigned at birth. In some schools, children are being allowed and even encouraged to dress and appear in gender-nonconforming ways on the as-



sumption that this gives freer rein to who they “really are” (Brown, 2006). However, Skidmore and colleagues (2006) examined whether gender nonconformity was related to psychological distress in a community-based sample of gay men and lesbians. Gender nonconformity was measured by self-reports of childhood gender nonconformity and ratings of current behavior. The researchers found that gender nonconformity was related to psychological distress (depression, anxiety) but only for gay men and not for lesbians.

Although only a minority of gay men report gender nonconformity as boys, research indicates that many of these gender-nonconforming boys defeminize as they reach adulthood, probably because of persistent social pressure from their family and peers. Also, interventions exist to alter gender-nonconforming behavior in young children to avoid the ostracism and scorn these children encounter in most school settings (Rekers, Kilgus, & Rosen, 1990).

Thus, society is faced with a dilemma that requires more research. Should the free expression of gender nonconformity be encouraged knowing that, in most parts of the world, gender nonconformity will make for difficult social adaptation leading to substantial psychological distress for decades to come? Or will psychological adjustment be more positive if gender nonconformity is allowed and facilitated? And for intersexed individuals, rather than surgery to make individuals more physically consistent with one sex or the other, should society encourage expression along a dimension ranging from male to female, and will that be “healthier” for these individuals? If research confirms that adjustment is more positive if individuals find their own place on a gender continuum, then large-scale campaigns to alter social norms may occur along the lines of the successful campaigns of the last several decades for gay

rights, after a consensus developed in the 1990s that homosexuality was not a disorder. Research will continue on this important and interesting topic.



JIM WILSON/The New York Times/Redux Pictures

Summary

What Is Normal Sexuality?

How do sociocultural factors influence what are considered “normal” sexual behaviors?

- › Patterns of sexual behavior, both heterosexual and homosexual, vary around the world in terms of both behavior and risks. Approximately 20% of individuals who have been surveyed engage in sex with numerous partners, which puts them at risk for sexually transmitted diseases such as AIDS. Recent surveys also suggest that as many as 60% of American college females practice unsafe sex by not using condoms.
- › Three types of disorders are associated with sexual functioning and gender identity: gender identity disorder, sexual dysfunctions, and paraphilias.

Gender Identity Disorder

What are the defining clinical features, causes, and treatments of gender identity disorder?

- › Gender identity disorder is a dissatisfaction with one’s biological sex and the sense that one is really the opposite gender (for example, a woman trapped in a man’s body). A person develops gender identity between 18 months and 3 years of age, and it seems that both

appropriate gender identity and mistaken gender identity have biological roots influenced by learning.

- › Treatment for adults may include sex reassignment surgery integrated with psychological approaches.

Overview of Sexual Dysfunctions

How do psychologists define sexual dysfunction?

- › Sexual dysfunction includes a variety of disorders in which people find it difficult to function adequately during sexual relations.

How is sexual dysfunction related to the sexual response cycle?

- › Specific sexual dysfunctions include disorders of sexual desire (hypoactive sexual desire disorder and sexual aversion disorder) in which interest in sexual relations is extremely low or nonexistent; disorders of sexual arousal (male erectile disorder and female sexual arousal disorder) in which achieving or maintaining adequate penile erection or vaginal lubrication is problematic; and orgasmic disorders (female orgasmic disorder and male orgasmic disorder) in which orgasm occurs too quickly or not at all. The most common disorder in this

- category is premature ejaculation, which occurs in males; inhibited orgasm is commonly seen in females.
- › Sexual pain disorders, in which unbearable pain is associated with sexual relations, include dyspareunia and vaginismus.
 - › The three components of assessment are interviews, a complete medical evaluation, and psychophysiological assessment.

Causes and Treatment of Sexual Dysfunction

What are the defining features and known causes of sexual dysfunction?

- › Sexual dysfunction is associated with socially transmitted negative attitudes about sex, current relationship difficulties, and anxiety focused on sexual activity.

What psychosocial and medical treatments are available, and are they effective?

- › Psychosocial treatment of sexual dysfunctions is generally successful but not readily available. In recent years, various medical approaches have become available, including the drug Viagra. These treatments focus mostly on male erectile dysfunction and are promising.

Paraphilia: Clinical Descriptions

What are the clinical features of the major paraphilias?

- › Paraphilia is sexual attraction to inappropriate people, such as children, or to inappropriate objects, such as articles of clothing.

- › The paraphilias include fetishism, in which sexual arousal occurs almost exclusively in the context of inappropriate objects or individuals; exhibitionism, in which sexual gratification is attained by exposing one's genitals to unsuspecting strangers; voyeurism, in which sexual arousal is derived from observing unsuspecting individuals undressing or naked; transvestic fetishism, in which individuals are sexually aroused by wearing clothing of the opposite sex; sexual sadism, in which sexual arousal is associated with inflicting pain or humiliation; sexual masochism, in which sexual arousal is associated with experiencing pain or humiliation; and pedophilia, in which there is a strong sexual attraction toward children. Incest is a type of pedophilia in which the victim is related, often a son or daughter.

What is known about the causes of paraphilias?

- › The development of paraphilia is associated with deficiencies in consensual adult sexual arousal, deficiencies in consensual adult social skills, deviant sexual fantasies that may develop before or during puberty, and attempts by the individual to suppress thoughts associated with these arousal patterns.

Assessing and Treating Paraphilia

What psychosocial and drug treatments are available for paraphilias, and how effective are they?

- › Psychosocial treatments of paraphilia are only modestly effective at best among individuals who are incarcerated, but they are somewhat more successful in less severe outpatients.

Key Terms

heterosexual behavior, 332
 homosexual behavior, 332
 gender identity disorder, 335
 gender nonconformity, 338
 sex reassignment surgery, 339
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 sexual aversion disorder, 342
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 sexual masochism, 357
 pedophilia, 358
 incest, 358
 covert sensitization, 361
 orgasmic reconditioning, 362

Answers to Concept Checks

9.1

1. More men masturbate and do it more often, men are more permissive about casual sex, women want more intimacy from sex, and so on.
2. Both heterosexuality and homosexuality are normal; genetics appear to play some role in the development of sexual preference.
3. Gender identity disorder

4. Abnormal hormone levels during development, social or parental influences
5. Sex reassignment surgery, psycho-social treatment to adjust to either gender

9.2

1. c; 2. a; 3. b; 4. c; 5. a

9.3

1. T; 2. F (sometimes increases arousal); 3. T; 4. T; 5. F (nondemand pleasuring, squeeze technique, and so on); 6. T

9.4

1. d; 2. c; 3. a; 4. b; 5. a; 6. c

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Abnormal Psychology Videos

- › *Clark, a Man with Erectile Dysfunction:* This illustrates a complicated case in which depression, physical symptoms, and cultural expectations all seem to play a role in Clark's problem.
- › *Jessica, Changing Over:* Jessica discusses her life as a transsexual, both before and after her sex reassignment surgery.

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Video Concept Reviews

CengageNOW also contains Mark Durand's *Video Concept Reviews* on these challenging topics.

- › Normal versus Abnormal Sexual Behavior
- › Sexual Orientation
- › Sexual and Gender Identity Disorders
- › Gender Identity Disorders
- › Concept Check: Gender Identity Disorder, Transvestic Fetishism, and Transgendered
- › Sexual Reassignment Surgery
- › Human Sexual Response Cycle
- › Hypoactive Sexual Desire Disorder
- › Sexual Aversion Disorder
- › Male Erectile Disorder and Female Sexual Arousal Disorder
- › Inhibited Orgasm
- › Premature Ejaculation
- › Sexual Pain Disorders (Dyspareunia)
- › Vaginismus
- › Paraphilias

Chapter Quiz

1. Statistics about sexual activity have suggested that:
 - a. more people engage in oral intercourse than vaginal intercourse
 - b. the majority of people engage in heterosexual, vaginal intercourse in the context of a relationship with one partner
 - c. 10% to 15% of the population has exclusively homosexual sex
 - d. in the 1990s, people were more likely to be having sex with multiple partners than they were to be in a monogamous sexual relationship
2. Research evidence on the origins of homosexuality has suggested a possible role for all of the following EXCEPT:
 - a. genetic or chromosomal influences
 - b. emotionally distant fathers
 - c. size or function of brain structures
 - d. exposure to hormones
3. The most common form of treatment for gender identity disorder is:
 - a. exposure therapy
 - b. antidepressant medication
 - c. cognitive-behavioral therapy
 - d. sexual reassignment surgery
4. In which phase of the sexual response cycle can men experience difficulty attaining or maintaining erections?
 - a. resolution
 - b. orgasm
 - c. arousal
 - d. plateau
5. Simone and her partner have sexual intercourse about once a month. Simone says she wants to have sex but can't seem to achieve adequate lubrication to make sex enjoyable. Simone's symptoms are most consistent with:
 - a. impotence
 - b. sexual aversion disorder
 - c. sexual arousal disorder
 - d. vaginismus
6. Which component is essential to the diagnosis of female orgasmic disorder?
 - a. orgasms occur less frequently than desired
 - b. a 20% to 30% reduction in the frequency of orgasms in the last 6 months
 - c. a 70% to 80% reduction in the frequency of orgasms in the last year
 - d. orgasm never or almost never occurs
7. The overarching goal of Masters and Johnson's psychosocial treatment for sexual dysfunction was:
 - a. reducing or eliminating psychologically based performance anxiety
 - b. helping couples to increase the frequency of their sexual encounters to normalize sexual experiences
 - c. encouraging couples to be more willing to try medical treatments, despite their potential side effects
 - d. helping both individuals in a couple to understand past parental influences on contemporary sexual relations within the couple
8. A disorder in which an inappropriate, inanimate object is the source of sexual arousal is known as a:
 - a. paraphilopathy c. paraphilia
 - b. paranormality d. paraphasia
9. Which of the following statements is an accurate characterization of pedophilia?
 - a. It involves an attraction to male children more often than female children.
 - b. It is most commonly directed at girls who are beginning to mature physically.
 - c. It is often rationalized by the perpetrator as an acceptable way to teach children about sexuality.
 - d. It involves the use of physical force to get a child to perform sexual acts.
10. Shane is being treated for a paraphilia by imagining harmful consequences occurring in response to his unwanted behavior and arousal. Shane is receiving what kind of treatment?
 - a. covert sensitization
 - b. marital therapy
 - c. relapse prevention
 - d. orgasmic reconditioning(See Appendix A for answers.)

Exploring Sexual and Gender Identity Disorders

- Sexual behavior is considered normal in our culture unless it is associated with one of three kinds of impaired functioning—gender identity disorder, sexual dysfunction, or paraphilia.
- Sexual orientation probably has a strong biological basis that is influenced by environmental and social factors.

GENDER IDENTITY DISORDERS

Present when a person feels trapped in a body that is the “wrong” sex, that does not match his or her innate sense of personal identity. (Gender identity is independent of sexual arousal patterns.) Relatively rare.

Biological Influences

- Not yet confirmed, although likely to involve prenatal exposure to hormones
 - Hormonal variations may be natural or result from medication

Causes

Psychological Influences

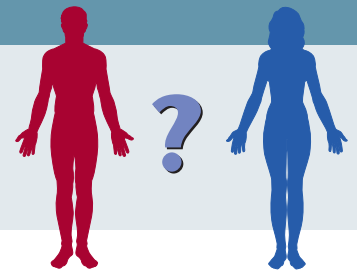
- Gender identity develops between 1 1/2 and 3 years of age
 - “Masculine” behaviors in girls and “feminine” behaviors in boys evoke different responses in different families



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Treatment

- Sex reassignment surgery: removal of breasts or penis; genital reconstruction
 - Requires rigorous psychological preparation and financial and social stability
- Psychosocial intervention to change gender identity
 - Usually unsuccessful except as temporary relief until surgery



PARAPHILIAS

Sexual arousal occurs almost exclusively in the context of inappropriate objects or individuals.

Types

- **Fetishism:** Sexual attraction to nonliving objects
- **Voyeurism:** Sexual arousal achieved by viewing unsuspecting person undressing or naked
- **Exhibitionism:** Sexual gratification from exposing one's genitals to unsuspecting strangers
- **Transvestite fetishism:** Sexual arousal from wearing opposite-sex clothing (cross-dressing)
- **Sexual sadism:** Sexual arousal associated with inflicting pain or humiliation
- **Sexual masochism:** Sexual arousal associated with experiencing pain or humiliation
- **Pedophilia:** Strong sexual attraction to children
- **Incest:** Sexual attraction to family member

Causes

- Preexisting deficiencies
 - In levels of arousal with consensual adults
 - In consensual adult social skills
- Treatment received from adults during childhood
- Early sexual fantasies reinforced by masturbation
- Extremely strong sex drive combined with uncontrollable thought processes

Treatment

- **Covert sensitization:** Repeated mental reviewing of aversive consequences to establish negative associations with behavior
- **Relapse prevention:** Therapeutic preparation for coping with future situations
- **Orgasmic reconditioning:** Pairing appropriate stimuli with masturbation to create positive arousal patterns
- **Medical:** Drugs that reduce testosterone to suppress sexual desire; fantasies and arousal return when drugs are stopped

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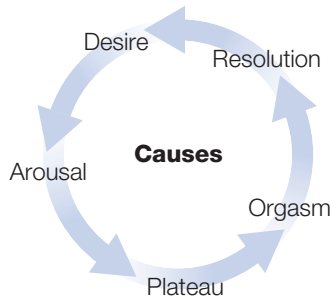
SEXUAL DYSFUNCTIONS

Sexual dysfunctions can be

- **Lifelong:** Present during entire sexual history
- **Acquired:** Interrupts normal sexual pattern
- **Generalized:** Present in every encounter
- **Situational:** Present only with certain partners or at certain times

The Human Sexual Response Cycle

A dysfunction is an impairment in one of the sexual response stages.



Types of Sexual Dysfunctions

Sexual Desire Disorders

- **Hypoactive sexual desire disorder:** Apparent lack of interest in sexual activity or fantasy
- **Sexual aversion disorder:** Extreme persistent dislike of sexual contact

Sexual Arousal Disorders

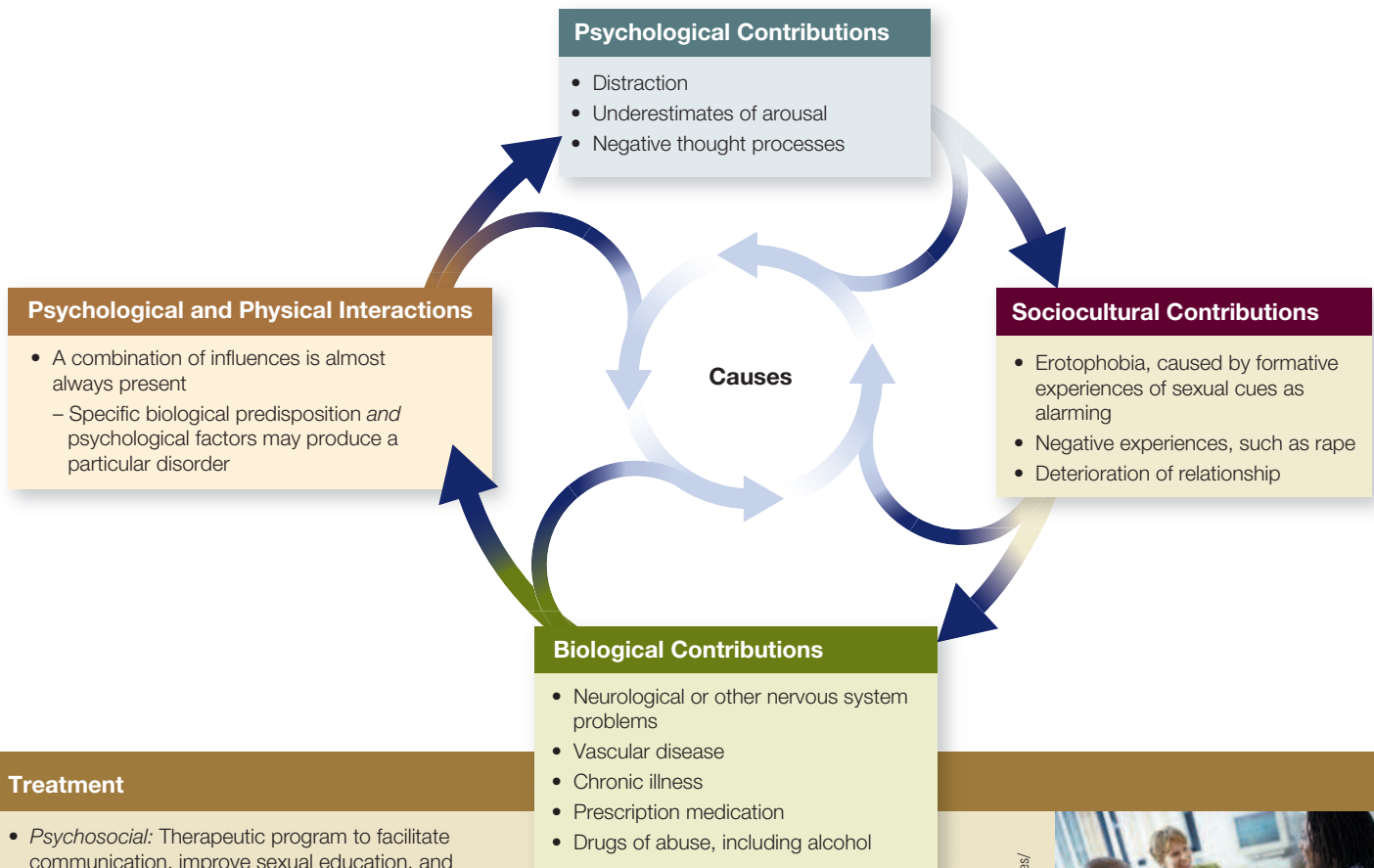
- **Male erectile disorder:** Recurring inability to achieve or maintain adequate erection
- **Female sexual arousal disorder:** Recurring inability to achieve or maintain adequate lubrication

Orgasm Disorders

- **Inhibited orgasm:** Inability to achieve orgasm despite adequate desire and arousal
- **Premature ejaculation:** Ejaculation before it is desired, with minimal stimulation

Sexual Pain Disorders

- **Dyspareunia:** Marked pain associated with intercourse for which there is no medical cause; occurs in males and females
- **Vaginismus:** Involuntary muscle spasms in the front of the vagina that prevent or interfere with intercourse



Treatment

- **Psychosocial:** Therapeutic program to facilitate communication, improve sexual education, and eliminate anxiety. Both partners participate fully.
- **Medical:** Almost all interventions focus on male erectile disorder, including drugs, prostheses, and surgery. Medical treatment is combined with sexual education and therapy to achieve maximum benefit.



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CHAPTER 10

Substance-Related and Impulse-Control Disorders

Chapter Outline

Perspectives on Substance-Related Disorders

- Levels of Involvement
- Diagnostic Issues

Depressants

- Alcohol Use Disorders
- Sedative, Hypnotic, or Anxiolytic Substance Use Disorders

Stimulants

- Amphetamine Use Disorders
- Cocaine Use Disorders
- Nicotine Use Disorders
- Caffeine Use Disorders

Opioids

Hallucinogens

- Marijuana
- LSD and Other Hallucinogens

Other Drugs of Abuse

Causes of Substance-Related Disorders

- Biological Dimensions
- Psychological Dimensions
- Cognitive Factors
- Social Dimensions
- Cultural Dimensions
- An Integrative Model

Treatment of Substance-Related Disorders

- Biological Treatments
- Psychosocial Treatments
- Prevention

Impulse-Control Disorders

- Intermittent Explosive Disorder
- Kleptomania
- Pyromania
- Pathological Gambling
- Trichotillomania

Abnormal Psychology Live Videos

- Substance Use Disorder: Tim
- Nicotine Dependence
- Web Link



Student Learning Outcomes*

Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology.

› Biological bases of behavior and mental processes, including physiology, sensation, perception, comparative, motivation, and emotion (APA SLO 1.2.a (3)) (see textbook pages 375–379, 391–395, 398–399)

Use the concepts, language, and major theories of the discipline to account for psychological phenomena.

› Describe behavior and mental processes empirically, including operational definitions (APA SLO 1.3.a) (see textbook pages 372–392, 403–405)

Identify appropriate applications of psychology in solving problems, such as:

› Origin and treatment of abnormal behavior (APA SLO 4.2.b) (see textbook pages 392–403)

*Portions of this chapter cover learning outcomes suggested by the American Psychological Association (2007) in their guidelines for the undergraduate psychology major. Chapter coverage of these outcomes is identified by APA Goal and APA Suggested Learning Outcome (SLO).

In this chapter, we explore **substance-related disorders**, which are associated with the abuse of drugs such as alcohol, cocaine, and heroin and with a variety of other substances people take to alter the way they think, feel, and behave. These disorders represent a problem that has cursed us for centuries and continues to affect how we live, work, and play.

Equally disruptive to the people affected, **impulse-control disorders** represent a number of related problems that involve the inability to resist acting on a drive or temptation. Included in this group are those who cannot resist

aggressive impulses or the impulse to steal, to set fires, to gamble, or to pull out their own hair. Controversy surrounds both substance-related and impulse-control disorders because our society sometimes believes that these problems result simply from a lack of “will.” If you wanted to stop drinking, using cocaine, or gambling, well, you would just stop. We first examine those individuals who are being harmed by their use of a variety of chemical substances (substance-related disorders) and then turn our attention to the puzzling array of disorders that are under the heading of impulse-control disorders.

Perspectives on Substance-Related Disorders

› What are substance-related disorders?

The cost in lives, money, and emotional turmoil has made the issue of drug abuse a major concern worldwide. Currently, more than 8% of the general population is believed to use illegal drugs (Substance Abuse and Mental Health Services Administration, 2009). Many U.S. presidential administrations have declared various “wars on drugs,” but the problem remains. The Roman Catholic Church issued a universal catechism in 1992 that officially declared drug abuse and drunk driving to be sins (Riding, 1992). Yet from the drug-related deaths of rock stars Jimi Hendrix and Janis Joplin in 1970 to contemporary celebrities such as Michael Jackson and Heath Ledger, drug use continues to negatively affect the lives of many.

Consider the case of Danny, who has the disturbing but common habit of **polysubstance use**, using multiple substances.

Danny • Multiple Dependencies

At the age of 43, Danny was in jail, awaiting trial on vehicular manslaughter charges stemming from a DWI accident that left one woman dead. Danny grew

up in the suburban United States, the youngest of three children. He was well liked in school and an average student. Like many of his friends, he smoked cigarettes in his early teens and drank beer with his friends at night behind his high school. Unlike most of his friends, however, Danny almost always drank until he was obviously drunk; he also experimented with many other drugs, including cocaine, heroin, “speed” (amphetamines), and “downers” (barbiturates).

substance-related disorder One of a range of problems associated with the use and abuse of drugs such as alcohol, cocaine, heroin, and other substances people use to alter the way they think, feel, and behave. These are extremely costly in human and financial terms.

impulse-control disorders A disorder in which a person acts on an irresistible, but potentially harmful, impulse.

polysubstance use The use of multiple mind- and behavior-altering substances, such as drugs.



After high school, Danny attended a local community college for one semester, but he dropped out after failing most of his courses. His dismal performance in school seemed to be related to his missing most classes rather than to an inability to learn and understand the material. He had difficulty getting up for classes after partying most of the night, which he did with increasing frequency. His moods were highly variable, and he was often unpleasant. Danny's family knew he occasionally drank too much, but they didn't know (or didn't want to know) about his other drug use. He had for years forbidden anyone to go into his room after his mother found little packets of white powder (probably cocaine) in his sock drawer. He said he was keeping them for a friend and that he would return them immediately. He was furious that his family might suspect him of using drugs. Money was sometimes missing from the house, and once some stereo equipment "disappeared," but if his family members suspected Danny, they never admitted it.

Danny held a series of low-paying jobs, and when he was working his family reassured themselves that he was back on track and things would be fine. Unfortunately, he rarely held a job for more than a few months. Because he continued to live at home, Danny could survive despite frequent periods of unemployment. When he was in his late 20s, Danny seemed to have a personal revelation. He announced that he needed help and planned to check into an alcohol rehabilitation center; he still would not admit to using other drugs. His family's joy and relief were overwhelming, and no one questioned his request for several thousand dollars to help pay for the private program he said he wanted to attend. Danny disappeared for several weeks, presumably because he was in the rehabilitation program. However, a call from the local police station put an end to this fantasy: Danny had been found high and living in an abandoned building. Danny's deceptiveness and financial irresponsibility greatly strained his relationship with his family. He was allowed to continue living at home, but his parents and siblings excluded him from their emotional lives. Danny seemed to straighten out, and he held a job at a gas station for almost 2 years. He became friendly with the station owner and his son, and he often went hunting with them during the season. However, without any obvious warning, Danny resumed drinking and using drugs and was arrested for robbing the very place that had kept him employed for many months.

Why did Danny become dependent on drugs when many of his friends and siblings did not? Why did he steal from his family and friends? What ultimately became of him? We return to Danny's frustrating story later when we look at the causes and treatment of substance-related disorders.



▲ Model Kate Moss was photographed in 2005 preparing and snorting cocaine. There is an increasing concern that celebrity use of illegal drugs glamorizes their use without showing their negative effects.

Levels of Involvement

Although each drug described in this chapter has unique effects, there are similarities in the ways they are used and how people who abuse them are treated. We first survey some concepts that apply to substance-related disorders in general.

Can you use drugs and not abuse them? Can you abuse drugs and not become addicted to them? To answer these important questions, we first need to outline what we mean by *substance use*, *substance intoxication*, *substance abuse*, and *dependence*. The term *substance* refers to chemical compounds that are ingested to alter mood or behavior. Although you might first think of drugs such as cocaine and heroin, this definition also includes more common-place legal drugs such as alcohol, the nicotine found in tobacco, and the caffeine in coffee, soft drinks, and chocolate. As you will see, these so-called safe drugs also affect mood and behavior; they can be addictive, and they account for more health problems and a greater mortality rate than all illegal drugs combined. To understand substance-related disorders, we must first know what it means to ingest **psychoactive substances**—which alter mood, behavior, or both—to become intoxicated or high, to



Ariel Skelley/Blend Images/JupiterImages

▲ Substance use.

abuse these substances, and to become dependent on or addicted to them.

Substance Use

Substance use is the ingestion of psychoactive substances in moderate amounts that does not significantly interfere with social, educational, or occupational functioning. Most of you reading this chapter probably use some sort of psychoactive substance occasionally. Drinking a cup of coffee in the morning to wake up or smoking a cigarette and having a drink with a friend to relax are examples of substance use, as is the occasional ingestion of illegal drugs such as marijuana, cocaine, amphetamines, or barbiturates.

DSM Disorder Criteria Summary

Substance Intoxication

- A. The development of a reversible substance-specific syndrome due to recent ingestion of (or exposure to) a substance. **Note:** Different substances may produce similar or identical syndromes.
- B. Clinically significant maladaptive behavioral or psychological changes that are due to the effect of the substance on the central nervous system (e.g., belligerence, mood lability, cognitive impairment, impaired judgment, impaired social or occupational functioning) and develop during or shortly after use of the substance.
- C. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

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Intoxication

Our physiological reaction to ingested substances—drunkenness or getting high—is referred to as **substance intoxication**. For a person to become intoxicated depends on which drug is taken, how much is ingested, and the person's individual biological reaction. For many of the substances we discuss here, intoxication is experienced as impaired judgment, mood changes, and lowered motor ability (for example, problems walking or talking).

Substance Abuse

Defining **substance abuse** by how much of a substance is ingested is problematic. For example, is drinking two glasses of wine in an hour abuse? Three glasses? Six? Is taking one injection of heroin considered abuse? The text revision of the fourth edition of the *Diagnostic and Statistical Manual (DSM-IV-TR)* defines substance abuse in terms of

how significantly it interferes with the user's life. If substances disrupt your education, job, or relationships with others, and put you in physically dangerous situations (for example, while driving), and if you have related legal problems, you would be considered a drug abuser. Some evidence suggests that high school drug use can predict later job outcomes. In one study, researchers controlled for factors such as educational interests and other problem behavior, and still found that repeated hard drug use (using one or more of the following: amphetamines, barbiturates, crack, cocaine, PCP, LSD, other psychedelics, crystal meth, inhalants, heroin, or other narcotics) predicted poor job outcomes at age 29 (Ringel, Ellickson, & Collins, 2007).

Danny seems to fit this definition of abuse. His inability to complete a semester of community college was a direct result of drug use. Danny often drove while drunk or under the influence of other drugs, and he had already been arrested twice. Danny's use of multiple substances was so relentless and pervasive that he would probably be diagnosed as drug dependent, which indicates a severe form of the disorder.

psychoactive substances Substances, such as a drugs, that alter mood or behavior.

substance intoxication A physiological reaction, such as impaired judgment and motor ability, as well as mood change, resulting from the ingestion of a psychoactive substance.

substance abuse A pattern of psychoactive substance use leading to significant distress or impairment in social and occupational roles and in hazardous situations.

DSM Disorder Criteria Summary

Substance Abuse

- A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:
- (1) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household);
 - (2) recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use);
 - (3) recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct);
 - (4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)
- B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

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Substance Dependence

Drug dependence is usually described as addiction. Although we use the term *addiction* routinely when we describe people who seem to be under the control of drugs, there is some disagreement about how to define addiction, or **substance dependence** (Strain, 2009). In one definition, the person is physiologically dependent on the drug or drugs, requires increasingly greater amounts of the drug to experience the same effect (**tolerance**), and will respond physically in a negative way when the substance is no longer ingested (**withdrawal**) (American Psychiatric Association, 2007). Tolerance and withdrawal are physiological reactions to the chemicals being ingested. How many of you have experienced headaches when you didn't get your morning coffee? You were probably going through caffeine withdrawal. In a more extreme example, withdrawal from alcohol can cause alcohol withdrawal delirium, in which a person can



Andrew Hobbs/Stone/Getty Images

▲ Intoxication.

DSM Disorder Criteria Summary

Substance Dependence

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

- (1) tolerance, as defined by either of the following:
 - (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect
 - (b) markedly diminished effect with continued use of the same amount of the substance
- (2) withdrawal, as manifested by either of the following:
 - (a) the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
 - (b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms
- (3) the substance is often taken in larger amounts or over a longer period than was intended
- (4) there is a persistent desire or unsuccessful efforts to cut down or control substance use
- (5) a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chainsmoking), or recover from its effects
- (6) important social, occupational, or recreational activities are given up or reduced because of substance use
- (7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

Specify if:

With Physiological Dependence: evidence of tolerance or withdrawal (i.e., either Item 1 or 2 is present)

Without Physiological Dependence: no evidence of tolerance or withdrawal (i.e., neither Item 1 nor 2 is present)

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experience frightening hallucinations and body tremors. Withdrawal from many substances can bring on chills, fever, diarrhea, nausea and vomiting, and aches and pains. However, not all substances are physiologically addicting. For example, you do not go through severe physical withdrawal when you stop taking LSD. Cocaine withdrawal has a pattern that includes anxiety, lack of motivation, and boredom (Leamon, Wright, & Myrick, 2008), and withdrawal from marijuana includes such symptoms as nervousness, appetite change, and sleep disturbance (Ehlers et al., 2010). In fact, although previously believed not to be a problem, marijuana (cannabis) withdrawal is now being considered for inclusion in *DSM-5* (Martin, Chung, & Langenbucher, 2008).

Another view of substance dependence uses the “drug-seeking behaviors” themselves as a measure of dependence. The repeated use of a drug, a desperate need to ingest more of the substance (stealing money to buy drugs, standing outside in the cold to smoke), and the likelihood that use will resume after a period of abstinence are behaviors that define the extent of drug dependence. Such behavioral reac-



©AGE STOCK LIMITED/Alamy

▲ Substance abuse.

tions are different from the physiological responses to drugs we described before and are sometimes referred to in terms of psychological dependence. The *DSM-IV-TR* definition of substance dependence combines the physiological aspects of tolerance and withdrawal with their behavioral and psychological aspects (American Psychiatric Association Practice Guideline, 2000a).

This definition of dependence must be seen as a “work in progress.” By these criteria, many people can be considered dependent on such activities as sex, work, or even eating chocolate. What most people consider serious addiction to drugs is qualitatively different from dependence on shopping or television. The physiological and behavioral patterns may need to be further refined before we can separate the truly serious phenomenon of substance dependence from less debilitating so-called addictions.

Let’s go back to the questions we started with: “Can you use drugs and not abuse them?” and “Can you abuse drugs and not become addicted to or dependent on them?” The answer to the first question is yes. Some people drink wine or beer regularly without drinking to excess. Although it is not commonly believed, some people use drugs such as heroin, cocaine, or crack (a form of cocaine) occasionally

(for instance, several times a year) without abusing them (Goldman & Rather, 1993). What is disturbing is that we do not know ahead of time who might be likely to lose control and abuse these drugs and who is likely to become dependent with even a passing use of a substance.

It may seem counterintuitive, but dependence can be present without abuse. For example, cancer patients who take morphine for pain may become dependent on the drug—build up a tolerance and go through withdrawal if it is stopped—without abusing it (Portenoy & Mathur, 2009). Later in this chapter, we discuss biological and psychosocial theories of the causes of substance-related disorders and of why we have individualized reactions to these substances.

Experts in the substance use field were asked about the relative “addictiveness” of various drugs (Franklin, 1990). The survey results are shown in ■ Figure 10.1. You may be surprised to see nicotine placed just ahead of methamphetamine and crack cocaine as the most addictive of drugs. Although this is only a subjective rating by these experts, it shows that our society sanctions or forbids drugs based on factors other than their addictiveness.

Diagnostic Issues

In early editions of the *DSM*, alcoholism and drug abuse weren’t treated as separate disorders. Instead, they were categorized as “sociopathic personality disturbances” (a forerunner of the current *antisocial personality disorder*, which we discuss in Chapter 11) because substance use was seen as a symptom of other problems. It was considered a sign of moral weakness, and the influence of genetics and biology was hardly acknowledged. A separate category was created for substance abuse disorders in *DSM-III* in 1980, and since then we have acknowledged the complex biological and psychological nature of the problem.

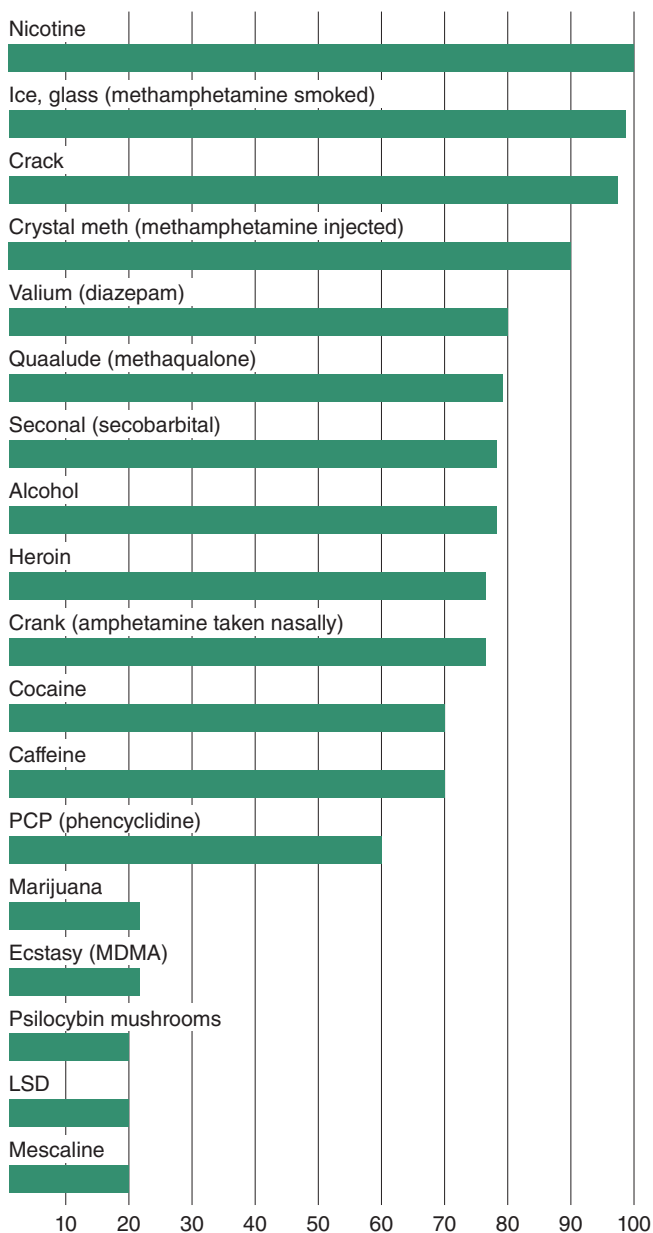
The *DSM-IV-TR* term *substance-related disorders* indicates several subtypes of diagnoses for each substance, including dependence, abuse, intoxication, withdrawal, or a combination of these. These distinctions help clarify the problem and focus treatment on the appropriate aspect of the disorder. Danny received the diagnosis “cocaine dependence” because of the tolerance he showed for the drug, his use of larger amounts than he intended, his unsuccessful attempts to stop using it, and the activities he gave up to buy it. His pattern of use was more pervasive than simple

substance dependence A maladaptive pattern of substance use characterized by the need for increased amounts to achieve the desired effect, negative physical effects when the substance is withdrawn, unsuccessful efforts to control its use, and substantial effort expended to seek it or recover from its effects. Also known as *addiction*.

tolerance The need for increased amounts of a substance to achieve the desired effect, and a diminished effect with continued use of the same amount.

withdrawal A severely negative physiological reaction to removal of a psychoactive substance, which can be alleviated by the same or a similar substance.

TO RANK today's commonly used drugs by their addictiveness, experts were asked to consider two questions: How easy is it to get hooked on these substances, and how hard is it to stop using them? Although a person's vulnerability to a drug also depends on individual traits—physiology, psychology, and social and economic pressures—these rankings reflect only the addictive potential inherent in the drug. The numbers are relative rankings, based on the experts' scores for each substance.



Research by John Hastings.

■ **FIGURE 10.1** Easy to get hooked on, hard to get off.
(Reprinted, with permission, from Hastings, J., 1990, November/December.
Easy to get hooked on, hard to get off. In *Health*, p. 37, © 1990 In Health.)

abuse, and the diagnosis of dependence provided a clear picture of his need for help.

Symptoms of other disorders can complicate the substance abuse picture significantly. For example, do some people take drugs to excess because they are depressed, or

does drug use and its consequences (for example, loss of friends, job) create depression? Researchers estimate that almost three quarters of the people in addiction treatment centers have an additional psychiatric disorder, with mood disorders (such as major depression) observed in more than 40% and anxiety disorders and posttraumatic stress disorder seen in more than 25% of the cases (McGovern, Xie, Segal, Siembab, & Drake, 2006).

Substance use might occur concurrently with other disorders for several reasons (Strain, 2009). Substance-related disorders and anxiety and mood disorders are highly prevalent in our society and may occur together so often just by chance. Drug intoxication and withdrawal can cause symptoms of anxiety, depression, and psychosis. Disorders such as schizophrenia and antisocial personality disorder are highly likely to include a secondary problem of substance use.

Because substance-related disorders can be so complicated, *DSM-IV-TR* tries to define when a symptom is a result of substance use and when it is not. Basically, if symptoms seen in schizophrenia or in extreme states of anxiety appear during intoxication or within 6 weeks after withdrawal from drugs, they aren't considered signs of a separate psychiatric disorder. So, for example, individuals who show signs of severe depression just after they have stopped taking heavy doses of stimulants would not be diagnosed with a major mood disorder. However, individuals who were severely depressed before they used stimulants and those whose symptoms persist more than 6 weeks after they stop might have a separate disorder (Leamon et al., 2008).

We now turn to the individual substances themselves, their effects on our brains and bodies, and how they are used in our society. We have grouped the substances into five general categories.

- › **Depressants:** These substances result in behavioral sedation and can induce relaxation. They include alcohol (ethyl alcohol) and the sedative, hypnotic, and anxiolytic drugs in the families of barbiturates (for example, Seconal) and benzodiazepines (for example, Valium, Xanax).
- › **Stimulants:** These substances cause us to be more active and alert and can elevate mood. Included in this group are amphetamines, cocaine, nicotine, and caffeine.
- › **Opiates:** The major effect of these substances is to produce analgesia temporarily (reduce pain) and euphoria. Heroin, opium, codeine, and morphine are included in this group.
- › **Hallucinogens:** These substances alter sensory perception and can produce delusions, paranoia, and hallucinations. Marijuana and LSD are included in this category.
- › **Other Drugs of Abuse:** Other substances that are abused but do not fit neatly into one of the categories here include inhalants (for example, airplane glue), anabolic steroids, and other over-the-counter and prescription medications (for example, nitrous oxide). These substances produce a variety of psychoactive effects that are characteristic of the substances described in the previous categories.

› What are the physiological and psychological effects of alcohol?

Depressants primarily *decrease* central nervous system activity. Their principal effect is to reduce our levels of physiological arousal and help us relax. Included in this group are alcohol and the sedative, hypnotic, and anxiolytic drugs, such as those prescribed for insomnia (see Chapter 8). These substances are among those most likely to produce symptoms of physical dependence, tolerance, and withdrawal. We first look at the most commonly used of these substances—alcohol—and the **alcohol use disorders** that can result.

Alcohol Use Disorders

DSM Disorder Criteria Summary Alcohol Intoxication

- A. Recent ingestion of alcohol.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., inappropriate sexual or aggressive behavior, mood lability, impaired judgment, impaired social or occupational functioning) that developed during, or shortly after, alcohol ingestion.
- C. One (or more) of the following signs, developing during, or shortly after, alcohol use: (1) slurred speech; (2) incoordination; (3) unsteady gait; (4) nystagmus; (5) impairment in attention or memory; (6) stupor or coma
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

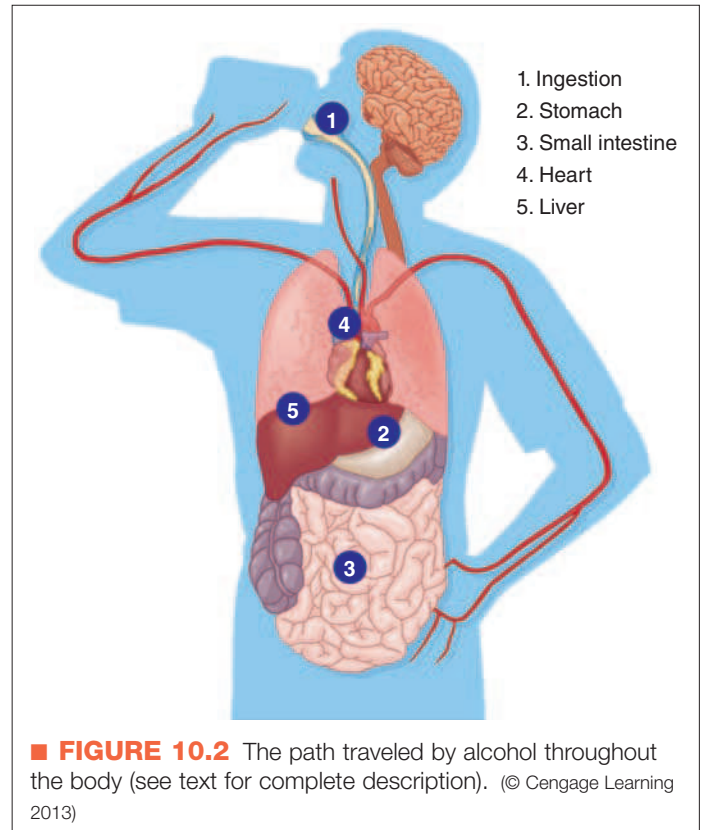
Source: Reprinted with permission from *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision). © 2000 American Psychiatric Association.

Clinical Description

Although alcohol is a depressant, its initial effect is an apparent stimulation. We generally experience a feeling of well-being, our inhibitions are reduced, and we become more outgoing. This is because what are initially depressed—or slowed—are the inhibitory centers in the brain. With continued drinking, however, alcohol depresses more areas of the brain, which impedes the ability to function properly. Motor coordination is impaired (staggering, slurred speech), reaction time is slowed, we become confused, our ability to make judgments is reduced, and even vision and hearing can be negatively affected, all of which help explain why driving while intoxicated is clearly dangerous.

Effects

Alcohol affects many parts of the body (■ Figure 10.2). After it is ingested, it passes through the esophagus (1 in Figure 10.2) and into the stomach (2), where small amounts are absorbed. From there, most of it travels to the small intestine (3), where it is easily absorbed into the bloodstream. The circulatory system distributes the alcohol throughout the body, where it contacts every major organ,



including the heart (4). Some of the alcohol goes to the lungs, where it vaporizes and is exhaled, a phenomenon that is the basis for the *breathalyzer test* that measures levels of intoxication. As alcohol passes through the liver (5), it is broken down or metabolized into carbon dioxide and water by enzymes (Maher, 1997).

Most substances we describe in this chapter, including marijuana, opiates, and tranquilizers, interact with specific receptors in the brain cells. The effects of alcohol, however, are more complex. Alcohol influences a number of neuro-

depressant A psychoactive substance that results in behavioral sedation; such substances include alcohol and the sedative, hypnotic, and anxiolytic drugs.

stimulant A psychoactive substance that elevates mood, activity, and alertness; such substances include amphetamines, caffeine, cocaine, and nicotine.

opiate An addictive psychoactive substance such as heroin, opium, or morphine that causes temporary euphoria and analgesia (pain reduction).

hallucinogen Any psychoactive substance, such as LSD or marijuana, that can produce delusions, hallucinations, paranoia, and altered sensory perception.

alcohol use disorders A cognitive, biological, behavioral, and social problem associated with alcohol use and abuse.



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Martin M. Rotker/Photo Researchers, Inc.

▲ A healthy liver (*left*), and a cirrhotic liver scarred by years of alcohol abuse (*right*).

receptor systems, which makes it difficult to study. For example, the *gamma-aminobutyric acid* (GABA) system, which we discussed in Chapters 2 and 4, seems to be particularly sensitive to alcohol. GABA, as you will recall, is an inhibitory neurotransmitter. Its major role is to interfere with the firing of the neuron it attaches to. When GABA attaches to its receptor, chloride ions enter the cell and make it less sensitive to the effects of other neurotransmitters. Alcohol seems to reinforce the movement of these chloride ions; as a result, the neurons have difficulty firing. In other words, although alcohol seems to loosen our tongues and makes us more sociable, it makes it difficult for neurons to communicate with one another (Strain, 2009). Because the GABA system seems to act on our feelings of anxiety, alcohol's antianxiety properties may result from its interaction with the GABA system.

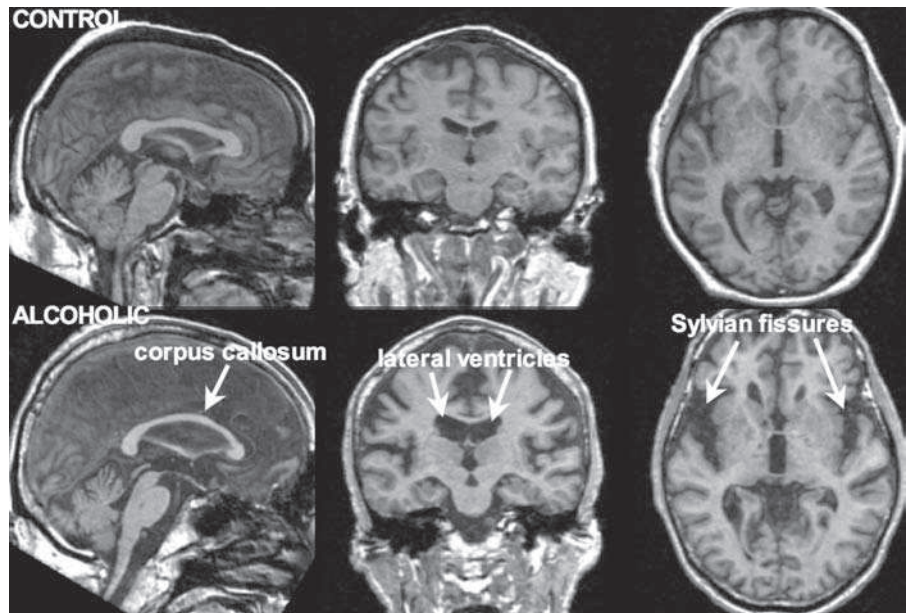
The *glutamate system* is under study for its role in the effects of alcohol. In contrast to the GABA system, the glutamate system is excitatory, helping neurons fire. It is suspected to involve learning and memory, and it may be the avenue through which alcohol affects our cognitive abilities. Blackouts, the loss of memory for what happens during intoxication, may result from the interaction of alcohol with the glutamate system. The serotonin system also appears to be sensitive to alcohol. This neurotransmitter system affects mood, sleep, and eating behavior and is thought to be responsible for alcohol cravings (Strain, 2009). Because alcohol affects so many neurotransmitter systems, we should not be surprised that it has such widespread and complex effects.

The long-term effects of heavy drinking are often severe. Withdrawal from chronic alcohol use typically includes hand tremors and, within several hours, nausea or vomiting, anxiety, transient

hallucinations, agitation, insomnia, and, at its most extreme, **withdrawal delirium** (or **delirium tremens**—the **DTs**), a condition that can produce frightening hallucinations and body tremors. The devastating experience of delirium tremens can be reduced with adequate medical treatment (Schuckit, 2009b).

Whether alcohol will cause organic damage depends on genetic vulnerability, the frequency of use, the length of drinking binges, the blood alcohol levels attained during the drinking periods, and whether the body is given time to recover between binges. Consequences of long-term excessive drinking include liver disease, pancreatitis, cardiovascular disorders, and brain damage.

Part of the folklore concerning alcohol is that it permanently kills brain cells (neurons). As you will see later, this



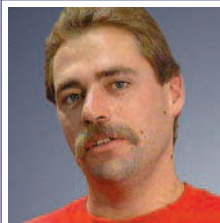
▲ MRI scans from a 53-year-old control man (*upper*) and a 53-year-old man with alcoholism (*lower*). Note the enlargement of the lateral ventricles and sulci, reduced cortical tissue, and skinnier corpus callosum in the man with a long history of alcohol abuse compared with the control. (Adapted from Rosenbloom MJ, Pfefferbaum A (2008): Alcohol Res Health 31:362–376)

may not be true. Some evidence for brain damage comes from the experiences of people who are alcohol dependent and experience blackouts, seizures, and hallucinations. Memory and the ability to perform certain tasks may also be impaired. More seriously, two types of organic brain syndromes may result from long-term heavy alcohol use: dementia and Wernicke-Korsakoff syndrome. *Dementia*, which we discuss more fully in Chapter 13, involves the general loss of intellectual abilities and can be a direct result of neurotoxicity or “poisoning of the brain” by excessive amounts of alcohol (Leamon et al., 2008). *Wernicke-Korsakoff syndrome* results in confusion, loss of muscle coordination, and unintelligible speech (Schuckit, 2009b); it is believed to be caused by a deficiency of thiamine, a vitamin metabolized poorly by heavy drinkers. The dementia caused by this disease does not go away once the brain is damaged.

The effects of alcohol abuse extend beyond the health and well-being of the drinker. **Fetal alcohol syndrome (FAS)** is now generally recognized as a combination of problems that can occur in a child whose mother drank while she was pregnant. These problems include fetal growth retardation, cognitive deficits, behavior problems, and learning difficulties (Gray, Mukherjee, & Rutter, 2009). In addition, children with FAS often have characteristic facial features.

Statistics on Use and Abuse

Most adults in the United States characterize themselves as light drinkers or abstainers. However, about half of all Americans over the age of 12 report being current drinkers



Abnormal Psychology Inside Out.
Produced by Ira Wohl, Only Child
Motion Pictures

Substance Use Disorder: Tim

“When I drink, I don’t care about anything, as long as I’m drinking. Nothing bothers me. The world doesn’t bother me. So when I’m not drinking, the problems come back, so you drink again. The problems will always be there. You just don’t realize it when you’re drinking. That’s why people tend to drink a lot.”

Go to Psychology CourseMate at www.cengagebrain.com to watch this video.

of alcohol, and there are considerable differences among people from different racial and ethnic backgrounds (■ Figure 10.3; Substance Abuse and Mental Health Services Administration, 2009). Whites report the highest frequency of drinking (56.5%); drinking is lowest among Native Hawaiians (37.3%).

About 58 million Americans (23%) report binge drinking (five or more drinks on the same occasion) in the past month—an alarming statistic (Substance Abuse and Mental Health Services Administration, 2009). Again, there are racial differences, with Asians reporting the lowest level of binge drinking (11.9%) and American Indians (24.4%) and Hispanics (25.6%) reporting the highest. In a large survey among college-age men and women, about 42% of respondents said they had gone on a binge of heavy drinking once in the preceding 2 weeks (Presley & Meilman, 1992). Men, however, were more likely to report several binges in the 2-week period. The same survey found that students with a grade point average of A had no more than 3 drinks per week, whereas D and F students averaged 11 alcoholic drinks per week (Presley & Meilman, 1992).

Statistics on Dependence

Our everyday experience tells us that not everyone who drinks becomes dependent on alcohol or abuses it. However, researchers estimate that more than 3 million adults are alcohol dependent (Substance Abuse and Mental Health Services Administration, 2009).

Outside the United States, rates of alcohol abuse and dependence vary widely. The prevalence of alcohol dependence in Peru is about 35%; in South Korea, it is approximately 22%; it is about 3.5% in Taipei and as low as 0.45% in Shanghai (Helzer & Canino, 1992; Yamamoto, Silva, Sasao, Wang, & Nguyen, 1993). Such cultural differences can be accounted for by different attitudes toward drink-

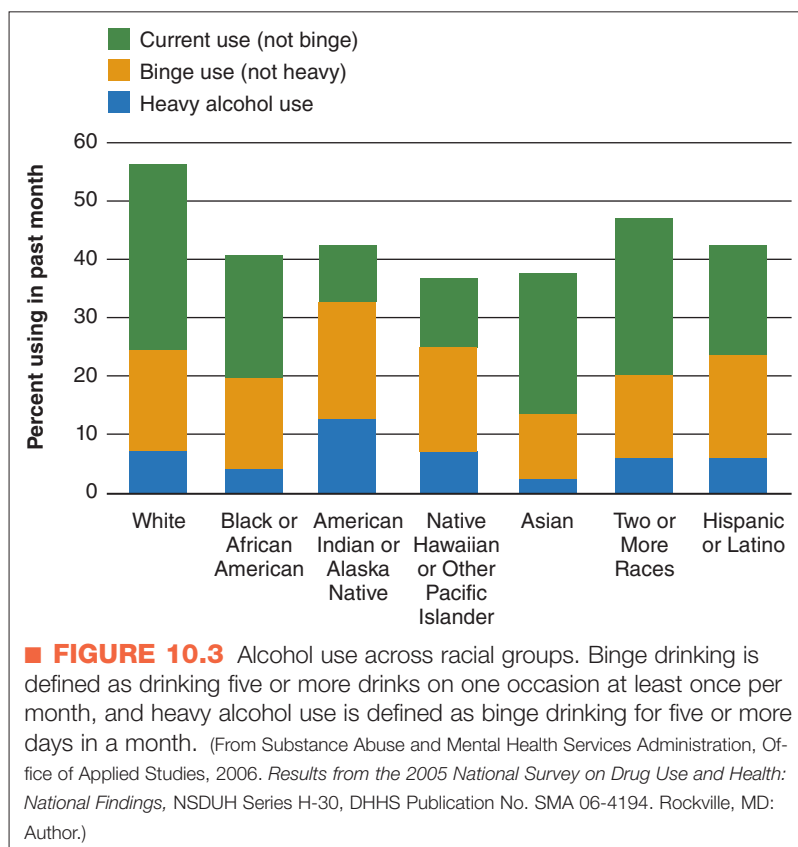


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▲ Physical characteristics of fetal alcohol syndrome (FAS) include skin folds at the corners of the eyes, low nasal bridge, short nose, groove between nose and upper lip, small head circumference, small eye opening, small midface, and thin upper lip.

withdrawal delirium (delirium tremens/DTs) The frightening hallucinations and body tremors that result when a heavy drinker withdraws from alcohol. Also known as *delirium tremens (DT)*.

fetal alcohol syndrome (FAS) A pattern of problems, including learning difficulties, behavior deficits, and characteristic physical flaws, resulting from heavy drinking by the victim’s mother when she was pregnant with the victim.



age—from ages 11 to 14—was predictive of later alcohol use disorders (DeWitt, Adlaf, Offord, & Ogborne, 2000). A second study followed 636 male inpatients in an alcohol rehabilitation center (Schuckit et al., 1993). Among these chronically alcohol-dependent men, a general progression of alcohol-related life problems did emerge, although not in the specific pattern proposed by Jellinek. Three quarters of the men reported moderate consequences of their drinking, such as demotions at work, in their 20s. During their 30s, the men had more serious problems, such as regular blackouts and signs of alcohol withdrawal. By their late 30s and early 40s, these men demonstrated long-term serious consequences of their drinking, which included hallucinations, withdrawal convulsions, and hepatitis or pancreatitis. This study suggests a common pattern among people with chronic alcohol abuse and dependence, one with increasingly severe consequences. This progressive pattern is not inevitable for everyone who abuses alcohol, although we do not as yet understand what distinguishes those who are and those who are not susceptible (Schuckit, 2009a).

Finally, statistics often link alcohol with violent behavior (Bye, 2007). Numerous studies have found that many people who commit such

violent acts as murder, rape, and assault are intoxicated at the time of the crime (Murdoch, Pihl, & Ross, 1990). We hope you are skeptical of this type of correlation. Just because drunkenness and violence overlap does not mean that alcohol will necessarily make you violent. Laboratory studies show that alcohol does make participants more aggressive (Bushman, 1993). However, whether a person behaves aggressively outside the laboratory probably involves a number of interrelated factors, such as the quantity and timing of alcohol consumed, the person's history of violence, expectations about drinking, and what happens to the individual while intoxicated. Alcohol does not *cause* aggression, but it may increase a person's likelihood of engaging in impulsive acts and it may impair the ability to consider the consequences of acting impulsively (Bye, 2007). Given the right circumstances, such impaired rational thinking may increase a person's risk of behaving aggressively.

Sedative, Hypnotic, or Anxiolytic Substance Use Disorders

The general group of depressants also includes sedative (calming), hypnotic (sleep-inducing), and anxiolytic (anxiety-reducing) drugs (Ciraulo & Sarid-Segal, 2009). These drugs include barbiturates and benzodiazepines. **Barbiturates** (which include Amytal, Seconal, and Nembutal) are a family of sedative drugs first synthesized in Germany in 1882 (Cozanitis, 2004). They were prescribed to help people sleep and replaced such drugs as alcohol

ing, the availability of alcohol, physiological reactions, and family norms and patterns.

Progression

Remember that Danny went through periods of heavy alcohol and drug use but also had times when he was relatively “straight” and did not use drugs. Similarly, many people who abuse alcohol or are dependent on it fluctuate between drinking heavily, drinking “socially” without negative effects, and being abstinent (not drinking) (Schuckit, 2009a). It seems that about 20% of people with severe alcohol dependence have a spontaneous remission (they are able to stop drinking on their own) and do not reexperience problems with drinking.

It used to be thought that once problems arose with drinking they would become steadily worse, following a predictable downward pattern as long as the person kept drinking (Sobell & Sobell, 1993). In other words, like a disease that isn't treated properly, alcoholism will get progressively worse if left unchecked. First championed by Jellinek more than 50 years ago, this view continues to influence the way people view and treat the disorder (Jellinek, 1946, 1952, 1960). Unfortunately, Jellinek based his model of the progression of alcohol use on a now famous but faulty study (Jellinek, 1946).

It appears instead that the course of alcohol dependence may be progressive for most people, whereas the course of alcohol abuse may be more variable. For example, early use of alcohol may predict later abuse. A study of almost 6,000 lifetime drinkers found that drinking at an early



People use alcohol and drugs all over the world. However, the rates of use differ significantly across countries and cultures, due in part to availability and social norms. A recent survey of people from 17 countries around the world revealed that approximately 85% to 95% of people report using alcohol at some point in their lifetime (the U.S. rate is 92%), although the rates in Africa and the Middle East are significantly lower (40%–58%) (Degenhardt et al., 2008). The use of other drugs such as tobacco, cannabis, and cocaine are significantly lower across all countries; however, the rates in the United States are significantly higher for each of these drugs than in virtually all other countries studied. For instance, the rate of cannabis use is 0% to 19% in most countries, but is 42% in the United States (and New Zealand). The rate of cocaine use is 0% to 4% in every country except the United States, in which 16% of people report using cocaine at some point in their life. The exact reason for these higher rates of use in the United States are not known, but

drug use is significantly associated with higher income, and so availability of drugs and the accumulation of wealth in the United States may play a strong role.

Although the rate of alcohol and drug use varies across countries, some interesting similarities in use are found across many different countries. Young people use alcohol and drugs more than older people, and although men have historically been shown to use alcohol and drugs at much higher rates than women, women appear to be catching up. This is true for both alcohol use (Grucza, Bucholz, Rice, & Bierut, 2008; Grucza, Norberg, Bucholz, & Bierut, 2008) and for drug use more generally (Degenhardt et al., 2008). Many possible explanations exist for the observed change in rates of female alcohol and drug use, with the majority focusing on the fact that over the past several decades, women have achieved greater economic, social, and political status. More specifically, explanations included the following: (1) changes in occupational options for women (e.g.,

women are more likely to be employed and may adopt the traditional male notion of alcohol as a reasonable reward for a day of hard work, or may be more exposed to opportunities/opportunities for drinking), (2) changes in social roles for women (e.g., cohabitation is becoming more prevalent and has been associated with higher rates of drinking), and (3) changes in adherence to gender stereotypes (e.g., women no longer conform to meeting traditional roles put on them of being nurturing, caring, and emotional) (for additional explanations see the review by Plant et al., 2008). Although it seems to be more socially and culturally accepted for women to engage in such drinking (and drug use) behaviors, women still experience greater barriers to treatment and stigma than men with similar dependence. Studies are needed to better understand exactly why this change has occurred and to develop better methods for preventing such high rates of abuse and dependence in the United States and around the globe.

and opium. Barbiturates were widely prescribed by physicians during the 1930s and 1940s, before their addictive properties were fully understood. By the 1950s, they were among the drugs most abused by adults in the United States (Franklin & Frances, 1999).

Benzodiazepines (which today include Valium, Xanax, Rohypnol, and Halcion) have been used since the 1960s, primarily to reduce anxiety. These drugs were originally touted as a miracle cure for the anxieties of living in our highly pressured technological society. Although in 1980 the U.S. Food and Drug Administration ruled that they are not appropriate for reducing the tension and anxiety resulting from everyday stresses and strains, an estimated 74 million prescriptions are written for benzodiazepines in the United States each year (Ciraulo & Sarid-Segal, 2009). In general, benzodiazepines are considered much safer than barbiturates, with less risk of abuse and dependence. Reports on the misuse of Rohypnol, however, show how dangerous even these benzodiazepine drugs can be. Rohypnol (otherwise known as “forget-me-pill,” “roofenol,” “roofies,” or “ruffies”) gained a following among teenagers in the 1990s because it has the same effect as alcohol without the telltale odor. However, there have been numerous incidents of men giving the drug to women without their knowledge, making it easier for them to engage in date rape (Nicoletti, 2009).

Clinical Description

At low doses, barbiturates relax the muscles and can produce a mild feeling of well-being. However, larger doses can have results similar to those of heavy drinking: slurred speech and problems walking, concentrating, and working. At extremely high doses, the diaphragm muscles can relax so much that they cause death by suffocation. Overdosing on barbiturates is a common means of suicide.

Like the barbiturates, benzodiazepines are used to calm an individual and induce sleep. In addition, drugs in this class are prescribed as muscle relaxants and anticonvulsants (anti-seizure medications) (Ciraulo & Sarid-Segal, 2009). People who use them for nonmedical reasons report first feeling a

alcohol dehydrogenase (ADH) An enzyme that helps humans metabolize alcohol. Different levels of its subtypes many account for different susceptibilities to disorders such as fetal alcohol syndrome.

barbiturates A sedative (and addictive) drug such as Amytal, Seconal, or Nembutal that is used as a sleep aid.

benzodiazepines An antianxiety drug such as Valium, Xanax, Dalmane, or Halcion also used to treat insomnia. Effective against anxiety (and, at high potency, panic disorder), benzodiazepines show some side effects, such as some cognitive and motor impairment, and may result in substance dependence. Relapse rates are extremely high when such a drug is discontinued.



▲ Intoxication is often involved in cases of domestic violence.

inappropriate sexual or aggressive behavior; variable moods, impaired judgment, impaired social or occupational functioning, slurred speech, motor coordination problems, and unsteady gait.

Like alcohol, sedative, hypnotic, and anxiolytic drugs affect the brain by influencing the GABA neurotransmitter system (Ciraulo & Sarid-Segal, 2009), although by slightly different mechanisms; as a result, when people use alcohol with any of these drugs or combine multiple types there can be synergistic effects. In other words, if you drink alcohol after taking a benzodiazepine or barbiturate or combine these drugs, the total effects can reach dangerous levels. Actor Heath Ledger's death in 2008 was attributed to the combined effects of oxycodone and a variety of other barbiturates and benzodiazepines.

Statistics

Barbiturate use has declined and benzodiazepine use has increased since 1960 (Substance Abuse and Mental Health Services Administration, 2009). Of those seeking treatment for substance-related problems, less than 1% present problems with benzodiazepines compared to other drugs of

pleasant high and a reduction of inhibition, similar to the effects of drinking alcohol. However, with continued use, tolerance and dependence can develop. Users who try to stop taking the drug experience symptoms like those of alcohol withdrawal (anxiety, insomnia, tremors, and delirium).

The *DSM-IV* criteria for sedative, hypnotic, and anxiolytic drug use disorders do not differ substantially from those for alcohol disorders. Both include maladaptive behavioral changes such as

abuse. Those who do seek help with these drugs tend to be female, Caucasian, and over the age of 35 (Substance Abuse and Mental Health Services Administration, 2009).

Concept Check 10.1

Part A

Check your understanding of substance-related definitions by stating whether the following case summaries describe (a) use, (b) intoxication, (c) abuse, or (d) dependence.

1. Giya started a new job 5 weeks ago and is about to be fired. This is her third job for the year. She has been absent from work at least once a week for the past 5 weeks. She was reprimanded in the past after being seen at a local pub in a drunken state during regular office hours although she called in sick. At her previous job, she was fired after she came to work unable to conduct herself appropriately and with alcohol on her breath. When confronted about her problems, Giya went to the nearest bar and drank some more to forget the situation. _____
2. Brennan scored the winning goal for his high school soccer team and his friends take him out to celebrate. He doesn't smoke, but he doesn't mind drinking alcohol occasionally. Because Brennan had such a good game, he decides to have a few drinks. Despite his great performance in the game, he is easily irritated, laughing one minute and yelling the next. The more Brennan rambles on about his game-winning goal, the more difficult it is to understand him. _____
3. Marti is a 24-year-old college student who started drinking heavily when he was 15. Marti drinks a moderate amount every night, unlike his schoolmates who get drunk at weekend parties only. In high school, he would become drunk after about four beers; now his tolerance has more than doubled. Marti claims alcohol relieves the pressures of college life. He once attempted to quit drinking, but he had chills, fever, diarrhea, nausea and vomiting, and body aches and pains. _____
4. Over the past year Henry picked up a habit of having a cigarette every day after lunch. Instead of sitting in the lounge with his friends he goes to his favorite spot in the courtyard and has his cigarette. If for some reason he is unable to have his cigarette after lunch, he is not dependent on it and can still function normally. _____

Part B

Match the following disorders with their corresponding effects: (a) substance-related disorder; (b) dement-

DSM Disorder Criteria Summary

Sedative, Hypnotic, or Anxiolytic Intoxication

- A. Recent use of a sedative, hypnotic, or anxiolytic.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., inappropriate sexual or aggressive behavior, mood lability, impaired judgment, impaired social or occupational functioning) that developed during, or shortly after, sedative, hypnotic, or anxiolytic use.
- C. One (or more) of the following signs, developing during, or shortly after, sedative, hypnotic, or anxiolytic use:
 - (1) slurred speech; (2) incoordination; (3) unsteady gait; (4) nystagmus; (5) impairment in attention or memory; (6) stupor or coma
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

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tia, (c) impulse-control disorder, (d) alcohol use disorder, and (e) Wernicke-Korsakoff syndrome.

5. Disorder that deprives a person of the ability to resist acting on a drive or temptation.

6. Disorder in which the effects of the drug impede the ability to function properly by affecting vision,

motor control, reaction time, memory, and hearing.

7. The decline of intellectual abilities through, for example, excess consumption of alcohol.

8. A class of disorders that affects the way people think, feel, and behave.

Stimulants

› What are the physiological and psychological effects of stimulants?

Of all the psychoactive drugs used in the United States, the most commonly consumed are stimulants. Included in this group are caffeine (in coffee, chocolate, and many soft drinks), nicotine (in tobacco products such as cigarettes), amphetamines, and cocaine. You probably used caffeine when you got up this morning. In contrast to the depressant drugs, stimulants—as their name suggests—make you more alert and energetic. They have a long history of use. Chinese physicians, for example, prescribed an amphetamine compound called ma-huang (*Ephedra sinica*) for more than 5,000 years for illnesses such as headaches, asthma, and the common cold (Fushimi, Wang, Ebisui, Cai, & Mikage, 2008). We describe several stimulants and their effects on behavior, mood, and cognition.

Amphetamine Use Disorders

At low doses, amphetamines can induce feelings of elation and vigor and can reduce fatigue. You literally feel “up.” However, after a period of elevation, you come back down and “crash,” feeling depressed or tired. In sufficient quantities, stimulants can lead to **amphetamine use disorders**.

Amphetamines are manufactured in the laboratory; they were first synthesized in 1887 and later used as a treatment for asthma and as a nasal decongestant (McCann & Ricaurte, 2009). Because amphetamines also reduce appetite, some people take them to lose weight. Adolph Hitler, partly because of his other physical maladies, became addicted to amphetamines (Judge & Rusyniak, 2009). Long-haul truck drivers, pilots, and some college students trying to “pull all-nighters” use amphetamines to get that extra energy boost and stay awake. Some of these drugs (Ritalin) are even given to children with *attention deficit hyperactivity disorder (ADHD)* (discussed in Chapter 13), although these too are being abused for their psychostimulant effects. One study found that as many as 1 in 10 students at one college reported using prescription stimulants illegally (Carroll, McLaughlin, & Blake, 2006).

DSM-IV-TR diagnostic criteria for amphetamine intoxication include significant behavioral symptoms, such as euphoria or affective blunting (a lack of emotional expression), changes in sociability, interpersonal sensitivity, anxiety, tension, anger, stereotyped behaviors, impaired judgment,

and impaired social or occupational functioning. In addition, physiological symptoms occur during or shortly after amphetamine or related substances are ingested and can include heart rate or blood pressure changes, perspiration or chills, nausea or vomiting, weight loss, muscular weakness, respiratory depression, chest pain, seizures, or coma. Severe intoxication or overdose can cause hallucinations, panic, agitation, and paranoid delusions (Leamon et al., 2008). Amphetamine tolerance builds quickly, making it

DSM Disorder Criteria Summary

Amphetamine Intoxication

- A. Recent use of amphetamine or a related substance (e.g., methylphenidate).
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., euphoria or affective blunting; changes in sociability; hypervigilance; interpersonal sensitivity; anxiety, tension, or anger; stereotyped behaviors; impaired judgment; or impaired social or occupational functioning) that developed during, or shortly after, use of amphetamine or a related substance.
- C. Two (or more) of the following, developing during, or shortly after, use of amphetamine or a related substance: (1) tachycardia or bradycardia; (2) pupillary dilation; (3) elevated or lowered blood pressure; (4) perspiration or chills; (5) nausea or vomiting; (6) evidence of weight loss; (7) psychomotor agitation or retardation; (8) muscular weakness, respiratory depression, chest pain, or cardiac arrhythmias; (9) confusion, seizures, dyskinesias, dystonias, or coma
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances: This specifier may be noted when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. Intact reality testing means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

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amphetamine use disorders Psychological, biological, behavioral, and social problems associated with amphetamine use and abuse.

doubly dangerous. Withdrawal often results in apathy, prolonged periods of sleep, irritability, and depression.

Periodically, certain “designer drugs” appear in local miniepidemics. An amphetamine called methylenedioxymethamphetamine (MDMA), first synthesized in 1912 in Germany, was used as an appetite suppressant (McCann & Ricaurte, 2009). Recreational use of this drug, now commonly called Ecstasy, rose sharply in the late 1980s. After methamphetamine, MDMA is the club drug most often bringing people to emergency rooms, and it has passed LSD in frequency of use (Substance Abuse and Mental Health Services Administration, 2009). Its effects are described by users in a variety of ways: Ecstasy makes you “feel happy” and “love everyone and everything”; “music feels better” and “it’s more fun to dance”; “You can say what is on your mind without worrying what others will think” (Levy, O’Grady, Wish, & Arria, 2005, p. 1431). A purified, crystallized form of amphetamine, called methamphetamine (commonly referred to as “crystal meth” or “ice”), is ingested through smoking. This drug causes marked aggressive tendencies and stays in the system longer than cocaine, making it particularly dangerous. This drug gained popularity in the gay community, although its use has now spread to others (Parsons, Kelly, & Weiser, 2007). However enjoyable these various amphetamines may be in the short term, the potential for users to become dependent on them is extremely high, with great risk for long-term difficulties.

Amphetamines stimulate the central nervous system by enhancing the activity of norepinephrine and dopamine. Specifically, amphetamines help the release of these neurotransmitters and block their reuptake, thereby making more of them available throughout the system (McCann & Ricaurte, 2009). Too much amphetamine—and therefore too much dopamine and norepinephrine—can lead to hallucinations and delusions. As we see in Chapter 12, this effect has stimulated theories on the causes of schizophrenia, which can also include hallucinations and delusions.

Cocaine Use Disorders

Clinical Description

Like the amphetamines, in small amounts cocaine increases alertness, produces euphoria, increases blood pressure and pulse, and causes insomnia and loss of appetite. Remember that Danny snorted (inhaled) cocaine when he partied through the night with his friends. He later said the drug made him feel powerful and invincible—the only way he really felt self-confident. The effects of cocaine are short lived; for Danny they lasted less than an hour, and he had to snort repeatedly to keep himself up. During these binges, he often became paranoid, experiencing exaggerated fears that he would be caught or that someone would steal his cocaine. Such paranoia—referred to as *cocaine-induced paranoia*—is common among cocaine abusers, occurring in two thirds or more (Kalayasiri et al., 2006). Cocaine also makes the heart beat more rapidly and irregularly, and it can have fatal consequences, depending on a person’s physical condition and

DSM Disorder Criteria Summary

Cocaine Intoxication

- A. Recent use of cocaine.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., euphoria or affective blunting; changes in sociability; hypervigilance; interpersonal sensitivity; anxiety, tension, or anger; stereotyped behaviors; impaired judgment; or impaired social or occupational functioning) that developed during, or shortly after, use of cocaine.
- C. Two (or more) of the following, developing during, or shortly after, cocaine use:
 - (1) tachycardia or bradycardia; (2) pupillary dilation; (3) elevated or lowered blood pressure; (4) perspiration or chills; (5) nausea or vomiting; (6) evidence of weight loss; (7) psychomotor agitation or retardation; (8) muscular weakness, respiratory depression, chest pain, or cardiac arrhythmias; (9) confusion, seizures, dyskinesias, dystonias, or coma
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances: This specifier may be noted when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. Intact reality testing means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

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the amount of the drug ingested. Billy Mays, the TV salesman for products such as OxiClean, died of heart disease in 2009 with cocaine listed as a contributory cause of death.

Statistics

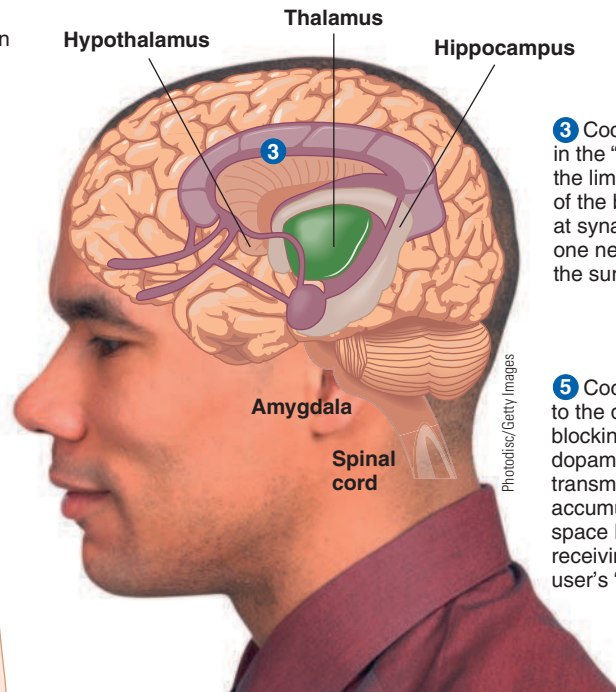
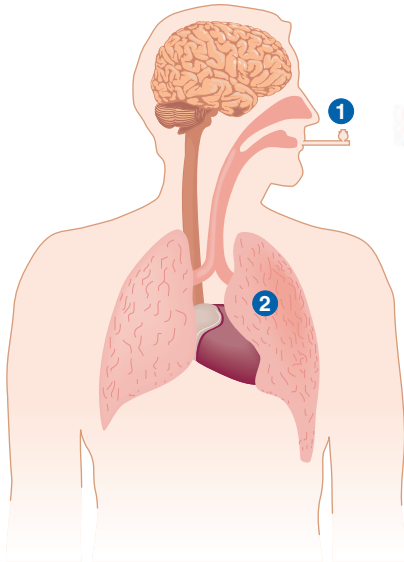
In the United States, more than 1.9 million people report using cocaine each year, more than any other drug besides marijuana (Substance Abuse and Mental Health Services Administration, 2009). White males account for about a third of all admissions to emergency rooms for cocaine-related problems (29%) followed by black males (23%), white females (18%), and black females (12%) (Substance Abuse and Mental Health Services Administration, 2002). Approximately 17% of cocaine users have also used crack cocaine (a crystallized form of cocaine that is smoked) (Closser, 1992). One estimate is that about 0.2% of Americans have tried crack and that an increasing proportion of the abusers seeking treatment are young, unemployed adults living in urban areas (Substance Abuse and Mental Health Services Administration, 2009).

Cocaine is in the same group of stimulants as amphetamines because it has similar effects on the brain. The “up” seems to come primarily from the effect of cocaine on the dopamine system. Look at ■ Figure 10.4 to see how this action occurs. Cocaine enters the bloodstream and is carried to the brain. There the cocaine molecules block the reuptake of dopamine. As you know, neurotransmitters released at the synapse stimulate the next neuron and then are recycled back to the original neuron. Cocaine seems to bind to places where dopamine neurotransmitters reenter their home neuron, blocking their reuptake. The dopamine that cannot be taken in by the neuron remains in the synapse, causing repeated stimulation of the next neuron. This stimulation of

Researchers are beginning to understand how addictive drugs affect the brain. Some, including cocaine, intensify the transmission of signals among brain cells.

1 Drug user inhales cocaine molecules in smoke.

2 Cocaine enters bloodstream through lungs. Blood carries it throughout the body. Within seconds it reaches the brain.



3 Cocaine molecules act in the “pleasure pathway”—the limbic system in the middle of the brain. The effect occurs at synapses, where fibers from one nerve cell almost touch the surface of another.

5 Cocaine molecules bind to the dopamine transporter, blocking the route by which dopamine would reenter the transmitter cell. Dopamine accumulating in the synaptic space keeps stimulating the receiving cell, creating the user’s “high.”

4 Normally, a transmitting cell relays a signal by releasing dopamine molecules into the synaptic space. Dopamine drifts across the synapse and fits into receptors on the surface of the receiving cell, triggering an electrical signal that is relayed through the receiver. Then the dopamine molecules break away from the receptors and are recycled by the transmitter.

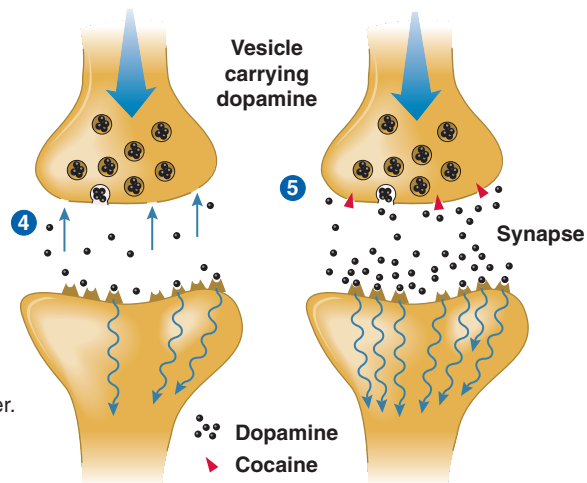


FIGURE 10.4 Anatomy of a high. (Adapted with permission from Booth W. 1990. “The anatomy of a high” Washington Post National Weekly Edition, March 28-April 1, p. 38. Copyright © 1990 The Washington Post.)

the dopamine neurons in the “pleasure pathway” (the site in the brain that seems to be involved in the experience of pleasure) causes the high associated with cocaine use.

As late as the 1980s, many felt cocaine was a wonder drug that produced feelings of euphoria without being addictive (Weiss & Iannucci, 2009). Such a conservative source as the *Comprehensive Textbook of Psychiatry* in 1980 indicated that “taken no more than two or three times per week, cocaine creates no serious problems” (Grinspoon & Bakalar, 1980). Just imagine—a drug that gives you extra energy, helps you think clearly and more creatively, and lets you accomplish more throughout the day, all without any negative side effects! In our highly competitive and complex technological society, this would be a dream come true. But, as you probably realize, such temporary benefits

have a high cost. Dependence does not resemble that of many other drugs early on; typically, people find only that they have a growing inability to resist taking more (Weiss & Iannucci, 2009). Few negative effects are noted at first; however, with continued use, sleep is disrupted, increased tolerance causes a need for higher doses, paranoia and other negative symptoms set in, and the cocaine user gradually becomes socially isolated.

Again, Danny’s case illustrates this pattern. He was a social user for a number of years, using cocaine only with

cocaine use disorders Cognitive, biological, behavioral, and social problems associated with the use and abuse of cocaine.

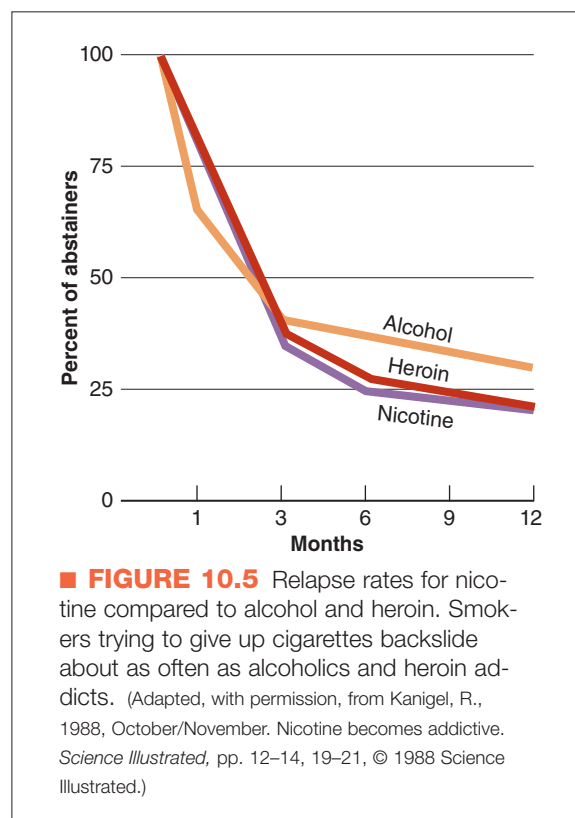
friends and only occasionally. Eventually, he had more frequent episodes of excessive use or binges, and he found himself increasingly craving the drug between binges. After the binges, Danny would crash and sleep. Cocaine withdrawal isn't like that of alcohol. Instead of rapid heartbeat, tremors, or nausea, withdrawal from cocaine produces pronounced feelings of apathy and boredom. Think for a minute how dangerous this type of withdrawal is. First, you're bored with everything and find little pleasure from the everyday activities of work or relationships. The one thing that can "bring you back to life" is cocaine. As you can imagine, a particularly vicious cycle develops: Cocaine is abused, withdrawal causes apathy, cocaine abuse resumes. The atypical withdrawal pattern misled people into believing that cocaine was not addictive. We now know that cocaine abusers go through patterns of tolerance and withdrawal comparable to those experienced by abusers of other psychoactive drugs (Weiss & Iannucci, 2009).

Nicotine Use Disorders

The nicotine in tobacco is a psychoactive substance that produces patterns of dependence, tolerance, and withdrawal—**nicotine use disorders**—comparable to those of the other drugs we have discussed so far (Hughes, 2009). In 1942 the Scottish physician Lennox Johnson "shot up" nicotine extract and found after 80 injections that he liked it more than cigarettes and felt deprived without it (Kanigel, 1988). This colorless, oily liquid—called nicotine after Jean Nicot, who introduced tobacco to the French court in the 16th century—is what gives smoking its pleasurable qualities. Today, about 21% of all Americans smoke, which is down from the 42.4% who were smokers in 1965 (Hughes, 2009).

DSM-IV-TR does not describe an intoxication pattern for nicotine. Rather, it lists withdrawal symptoms, which include depressed mood, insomnia, irritability, anxiety, difficulty concentrating, restlessness, and increased appetite and weight gain. Nicotine in small doses stimulates the central nervous system; it can relieve stress and improve mood. But it can also cause high blood pressure and increase the risk of heart disease and cancer (Stewart, Cutler, & Rosen, 2009). High doses can blur your vision, cause confusion, lead to convulsions, and sometimes even cause death. Once smokers are dependent on nicotine, going without it causes withdrawal symptoms. If you doubt the addictive power of nicotine, consider that the rate of relapse among people trying to give up drugs is equivalent among those using alcohol, heroin, and cigarettes (■ Figure 10.5)

Nicotine is inhaled into the lungs, where it enters the bloodstream. Only 7 to 19 seconds after a person inhales the smoke, the nicotine reaches the brain. Nicotine appears to stimulate specific receptors—nicotinic acetylcholine receptors (nAChRs)—in the midbrain reticular formation and the limbic system, the site of the brain's pleasure pathway (the dopamine system responsible for feelings of euphoria) (Benowitz, 2008). Some evidence



also points to how nicotine may affect the fetal brain, possibly increasing the likelihood that children of mothers who smoke during pregnancy will smoke later in life (Kandel, Wu, & Davies, 1994). Smokers dose themselves throughout the day in an effort to keep nicotine at a steady level in the bloodstream (Dalack, Glassman, & Covey, 1993).

Smoking has been linked with signs of negative affect, such as depression, anxiety, and anger (Rasmussen, Anderson, Krishnan-Sarin, Wu, & Paliwal, 2006). For example, many people who quit smoking but later resume report that feelings of depression or anxiety were responsible for the relapse (Hughes, 2009). This finding suggests that nicotine may help improve mood.

DSM Disorder Criteria Summary Nicotine Withdrawal

- A. Daily use of nicotine for at least several weeks.
- B. Abrupt cessation of nicotine use, or reduction in the amount of nicotine used, followed within 24 hours by four (or more) of the following signs: (1) dysphoric or depressed mood; (2) insomnia; (3) irritability, frustration, or anger; (4) anxiety; (5) difficulty concentrating; (6) restlessness; (7) decreased heart rate; (8) increased appetite or weight gain
- C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

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DSM Disorder Criteria Summary

Caffeine Intoxication

- A. Recent consumption of caffeine, usually in excess of 250 mg (e.g., more than 2-3 cups of brewed coffee).
- B. Five (or more) of the following signs, developing during, or shortly after, caffeine use: (1) restlessness; (2) nervousness; (3) excitement; (4) insomnia; (5) flushed face; (6) diuresis; (7) gastrointestinal disturbance; (8) muscle twitching; (9) rambling flow of thought and speech; (10) tachycardia or cardiac arrhythmia; (11) periods of inexhaustibility; (12) psychomotor agitation
- C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder (e.g., an Anxiety Disorder).

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Caffeine Use Disorders

Caffeine is the most common of the psychoactive substances, used regularly by almost 90% of all Americans (Juliano & Griffiths, 2009). Called the “gentle stimulant” because it is thought to be the least harmful of all addictive drugs, caffeine can still lead to **caffeine use disorders**. This drug is found in tea, coffee, many cola drinks sold today, and cocoa products. High levels of caffeine are added to the “energy drinks” that are widely consumed in the United States today but are banned in some European

countries (including France, Denmark, and Norway) because of health concerns.

As most of you have experienced firsthand, caffeine in small doses can elevate your mood and decrease fatigue. In larger doses, it can make you feel jittery and can cause insomnia. Because caffeine takes a relatively long time to leave our bodies (about 6 hours), sleep can be disturbed if the caffeine is ingested in the hours close to bedtime. This effect is especially pronounced among those already suffering from insomnia (Saln-Pascual, Castao, Shiromani, Valencia-Flores, & Campos, 2006). As with the other psychoactive drugs, people react variously to caffeine; some are sensitive to it, and others can consume relatively large amounts with little effect. Research suggests that moderate use of caffeine (a cup of coffee per day) by pregnant women does not harm the developing fetus (CARE Study Group, 2008).

As with other stimulants, regular caffeine use can result in tolerance and dependence on the drug. Those of you who have experienced headaches, drowsiness, and a generally unpleasant mood when denied your morning coffee have had the withdrawal symptoms characteristic of this drug (Juliano & Griffiths, 2009). Caffeine’s effect on the brain seems to involve the neuromodulator *adenosine* and, to a lesser extent, the neurotransmitter *dopamine* (Herrick, Shechterle, & St. Cyr, 2009). Caffeine seems to block adenosine reuptake. However, we do not yet know the role of adenosine in brain function or whether the interruption of the adenosine system is responsible for the elation and increased energy that come with caffeine use.

Opioids

› What are the psychological and physiological effects of opiates?

The word *opiate* refers to the natural chemicals in the opium poppy that have a narcotic effect (they relieve pain and induce sleep). In some circumstances, they can cause **opioid use disorders**. The broader term *opioids* refers to the family of substances that includes natural opiates, synthetic variations (heroin, methadone, hydrocodone, oxycodone), and the comparable substances that occur naturally in the brain (enkephalins, beta-endorphins, and dynorphins). References to the use of opium as a medicine date back more than 3,500 years (Strain, Lofwall, & Jaffe, 2009). In *The Wizard of Oz*, the Wicked Witch of the West puts Dorothy, Toto, and their companions to sleep by making them walk through a field of poppies, a literary allusion to the opium poppies used to produce morphine, codeine, and heroin.

Just as the poppies lull the Tin Man, the Scarecrow, Dorothy, the Cowardly Lion, and Toto, opiates induce euphoria, drowsiness, and slowed breathing. High doses can lead to death if respiration is completely depressed. Opiates are also analgesics, substances that help relieve pain.

People are sometimes given morphine before and after surgery to calm them and help block pain.

Withdrawal from opioids can be so unpleasant that people may continue to use these drugs despite a sincere desire to stop. However, barbiturate and alcohol withdrawal can be even more distressing. Even so, people who cease or reduce their opioid intake begin to experience symptoms within 6 to 12 hours; these include excessive yawning, nausea and vomiting, chills, muscle aches, diarrhea, and insomnia—temporarily disrupting work, school, and social relationships. The symptoms can persist for 1 to 3 days, and the withdrawal process is completed in about a week.

nicotine use disorders Cognitive, biological, behavioral, and social problems associated with the use and abuse of nicotine.

caffeine use disorders Cognitive, biological, behavioral, and social problems associated with the use and abuse of caffeine.

opioid use disorders Cognitive, biological, behavioral, and social problems associated with the use and abuse of opiates and their synthetic variants.

Nicotine Dependence

"You can't simply focus on nicotine itself. Many medications do that—they focus on replacing the nicotine, such as nicotine gum or the patch—and that's valuable, but you really have to focus on all the triggers, the cues, and the environment."

Go to Psychology CourseMate at www.cengagebrain.com to watch this video.



Abnormal Psychology Inside Out.
Produced by Ira Wohl, Only Child
Motion Pictures

Abuse of and dependence on heroin—the most commonly abused opiate—are reported in about a quarter million people in the United States (Substance Abuse and Mental Health Services Administration, 2009). Illicit use of opioid-containing prescription medicines has risen in recent years; one survey found that 9.3% of high school seniors reported using hydrocodone without a prescription and 5% used oxycodone (Johnston, Bachman, & Schulenberg, 2005). People who use opiates face risks beyond addiction and the threat of overdose. Because these drugs are usually injected intravenously, users are at increased risk for HIV infection and therefore AIDS.

The life of an opiate addict can be bleak. Results from a 33-year follow-up study of more than 80 addicts in an English town highlight a pessimistic view of many of their lives (Rathod, Addenbrooke, & Rosenbach, 2005). At the follow-



Dan Gair/JupiterImages

▲ Opium poppies.

up, 22% of addicts had died, about twice the national rate of about 12%. More than half the deaths were the result of drug overdose, and several took their own lives. The good news from this study was that of those who survived, 80% were no longer using opioids and the remaining 20% were being treated with methadone.

The high or "rush" experienced by users comes from activation of the body's natural opioid system. In other words, the brain already has its own opioids—called enkephalins and endorphins—that provide narcotic effects (Strain et al., 2009). Heroin, opium, morphine, and other opiates activate this system. The discovery of the natural opioid system was a major breakthrough in the field of psychopharmacology: Not only does it allow us to study the effects of addictive drugs on the brain, but it also has led to important discoveries that may help us treat people dependent on these drugs.

DSM Disorder Criteria Summary Opioid Intoxication

- A. Recent use of an opioid.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., initial euphoria followed by apathy, dysphoria, psychomotor agitation or retardation, impaired judgment, or impaired social or occupational functioning) that developed during, or shortly after, opioid use.
- C. Pupillary constriction (or pupillary dilation due to anoxia from severe overdose) and one (or more) of the following signs, developing during, or shortly after, opioid use: (1) drowsiness or coma; (2) slurred speech; (3) impairment in attention or memory
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances: This specifier may be noted in the rare instance in which hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. Intact reality testing means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

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Hallucinogens

› How do opioids differ from hallucinogens?

The substances we have examined so far affect people by making them feel "up," if they are stimulants such as cocaine, caffeine, and nicotine, or "down," if they are depressants such as alcohol and the barbiturates. Next, we explore the substances that can lead to **hallucinogen use**

disorder. They essentially change the way the user perceives the world. Sight, sound, feelings, taste, and even smell are distorted, sometimes in dramatic ways, when a person is under the influence of drugs such as marijuana and LSD.

Marijuana

Marijuana is the most routinely used illegal substance, with 15.2 million Americans reporting they used the drug in the past month (Substance Abuse and Mental Health Services Administration, 2009). **Marijuana** is the name given to the dried parts of the cannabis or hemp plant (its full scientific name is *Cannabis sativa*) (Hall & Degenhardt, 2009). Cannabis grows wild throughout the tropical and temperate regions of the world, which accounts for one of its nicknames: “weed.”

Reactions to marijuana usually include mood swings. Otherwise-normal experiences seem extremely funny, or the person might enter a dreamlike state in which time seems to stand still. Users often report heightened sensory experiences, seeing vivid colors, or appreciating the subtleties of music. Perhaps more than any other drug, however, marijuana can produce different reactions in people. It is not uncommon for someone to report having no reaction to the first use of the drug; it also appears that people can “turn off” the high if they are sufficiently motivated (Hall & Degenhardt, 2009). The feelings of well-being produced by small doses can change to paranoia, hallucinations, and dizziness when larger doses are taken. High school-age marijuana smokers get lower grades and are less likely to graduate (Lynskey & Hall, 2000). Research on frequent marijuana users suggests that impairments of memory, concentration, relationships with others, and employment may be negative outcomes of long-term use,



© WILDLIFE GmbH/Alamy

▲ Marijuana.

although some researchers suggest that some psychological problems precede usage—increasing the likelihood that someone will use marijuana (Macleod et al., 2004).

The evidence for marijuana tolerance is contradictory. Chronic and heavy users report tolerance, especially to the euphoric high (Mennes, Ben Abdallah, & Cottler, 2009); they are unable to reach the levels of pleasure they experienced earlier. However, evidence also indicates “reverse tolerance,” when regular users experience more pleasure from the drug after repeated use. Major signs of withdrawal do not usually occur with marijuana. Chronic users who stop taking the drug report a period of irritability, restlessness, appetite loss, nausea, and difficulty sleeping (National Institute on Drug Abuse, 2005).

Controversy surrounds the use of marijuana for medicinal purposes. However, there appears to be an increasing database documenting the successful use of marijuana and its by-products for the symptoms of certain diseases. In Canada, for example, four cannabis products are available for medical use, including an herbal cannabis extract (Sativex—delivered in a nasal spray), dronabinol (Marinol), nabilone (Cesamet), and the herbal form of cannabis that is typically smoked (Wang, Collet, Shapiro, & Ware, 2008). These cannabis-derived products are prescribed for chemotherapy-induced nausea and vomiting, HIV-associated anorexia, neuropathic pain in multiple sclerosis, and cancer pain. Unfortunately, marijuana smoke may contain as many carcinogens as tobacco smoke, and long-term use of the smoked form of the drug may contribute to diseases such as lung cancer. Most marijuana users inhale the drug by smoking the dried leaves in marijuana cigarettes; others use preparations such as hashish, which is the dried form of the resin in the leaves of the female plant. Marijuana contains more than 80 varieties of the chemicals called *cannabinoids*, which are believed to alter mood and behavior. The most common of these chemicals includes the *tetrahydrocannabinols*, otherwise known as *THC*. An exciting finding in the area of marijuana research is that the brain makes its own version of THC, a neurochemical called *anandamide* after the Sanskrit word *ananda*, which means “bliss” (Sedlak & Kaplin, 2009). Scientists are only beginning to explore how this neurochemical affects the brain and behavior.

LSD and Other Hallucinogens

LSD (*d*-lysergic acid diethylamide), sometimes referred to as “acid,” is the most common hallucinogenic drug. It is produced synthetically in laboratories, although naturally

hallucinogen use disorders Cognitive, biological, behavioral, and social problems associated with the use and abuse of hallucinogenic substances.

marijuana (*Cannabis sativa*) The dried part of the hemp plant (*Cannabis sativa*); a hallucinogen that is the most widely used illegal substance.

LSD (*d*-lysergic acid diethylamide) The most common hallucinogenic drug; a synthetic version of the grain fungus ergot.

DSM Disorder Criteria Summary

Cannabis Intoxication

- A. Recent use of cannabis.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., impaired motor coordination, euphoria, anxiety, sensation of slowed time, impaired judgment, social withdrawal) that developed during, or shortly after, cannabis use.
- C. Two (or more) of the following signs, developing within 2 hours of cannabis use: (1) conjunctival injection; (2) increased appetite; (3) dry mouth; (4) tachycardia
- D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances: This specifier may be noted when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. Intact reality testing means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

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occurring derivatives of this grain fungus (ergot) have been found historically. In Europe during the Middle Ages, an outbreak of illnesses occurred as a result of people's eating grain that was infected with the fungus. One version of this illness—later called *ergotism*—constricted the flow of blood to the arms or legs and eventually resulted in gangrene and the loss of limbs. Another type of illness resulted in convulsions, delirium, and hallucinations. Years later, scientists connected ergot with the illnesses and began studying versions of this fungus for possible benefits. LSD remained in the laboratory until the 1960s, when it was first produced illegally for recreational use. The mind-altering effects of the drug suited the social effort to reject established culture and enhanced the search for enlightenment that characterized the mood and behavior of many people during that decade. The late Timothy Leary, at the time a Harvard University research professor, first used LSD in 1961 and immediately began a movement to have every child and adult try the drug and “turn on, tune in, and drop out.”

There are a number of other hallucinogens, some occurring naturally in a variety of plants: *psilocybin* (found in certain species of mushrooms); *lysergic acid amide* (found in the seeds of the morning glory plant); *dimethyltryptamine* (DMT) (found in the bark of the Virola tree, which grows in South and Central America); and *mescaline* (found in the peyote cactus plant).

The *DSM-IV-TR* diagnostic criteria for hallucinogen intoxication are similar to those for marijuana: perceptual changes such as the subjective intensification of perceptions, depersonalization, and hallucinations. Physical symptoms include pupillary dilation, rapid heartbeat, sweating, and blurred vision (American Psychiatric Association, 2000). Many users have written about hallucinogens, and they describe a variety of experiences. In one well-designed placebo-controlled study of hallucinogens, researchers at Johns Hopkins School of Medicine gave

volunteers either the hallucinogen psilocybin or a control drug (the ADHD medication Ritalin) and assessed their reactions (Griffiths, Richards, McCann, & Jesse, 2006). Psilocybin ingestion resulted in individualized reactions including perceptual changes (for example, mild visual hallucinations) and mood changes (for example, joy or happiness, anxiety, or fearfulness). Interestingly, the drug increased reports of mystical experiences (for example, deeply felt positive mood), and 2 months later many rated the experience as having a spiritual significance. More research is needed to explore how these types of drugs work, and this research may also tell us how our brains process experiences such as personal meaning and spirituality (Griffiths, Richards, Johnson, McCann, & Jesse, 2008).

Tolerance develops quickly to a number of hallucinogens, including LSD, psilocybin, and mescaline (Jones, 2009). If taken repeatedly over a period of days, these drugs lose their effectiveness. However, sensitivity returns after about a week of abstinence. For most hallucinogens, no withdrawal symptoms are reported. Even so, a number of concerns have been expressed about their use. One is the possibility of psychotic reactions. Stories in the popular press about people who jumped out of windows because they believed they could fly or who stepped into moving traffic with the mistaken idea that they couldn't be hurt have provided for sensational reading, but little evidence suggests that using hallucinogens produces a greater risk than being drunk or under the influence of any other drug. People do report having “bad trips”; these are the sort of frightening episodes in which clouds turn into threatening monsters or deep feelings of paranoia take over. Usually someone on a bad trip can be “talked down” by supportive people who provide constant reassurance that the experience is the temporary effect of the drug and it will wear off in a few hours.

We still do not fully understand how LSD and the other hallucinogens affect the brain. Most of these drugs bear some resemblance to neurotransmitters; LSD, psilocybin,

DSM Disorder Criteria Summary

Hallucinogen Intoxication

- A. Recent use of a hallucinogen.
- B. Clinically significant maladaptive behavioral or psychological changes (e.g., marked anxiety or depression, ideas of reference, fear of losing one's mind, paranoid ideation, impaired judgment, or impaired social or occupational functioning) that developed during, or shortly after, hallucinogen use.
- C. Perceptual changes occurring in a state of full wakefulness and alertness (e.g., subjective intensification of perceptions, depersonalization, derealization, illusions, hallucinations, synesthesias) that developed during, or shortly after, hallucinogen use.
- D. Two (or more) of the following signs, developing during, or shortly after, hallucinogen use: (1) pupillary dilation; (2) tachycardia; (3) sweating; (4) palpitations; (5) blurring of vision; (6) tremors; (7) incoordination
- E. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

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lysergic acid amide, and DMT are chemically similar to serotonin; mescaline resembles norepinephrine; and a number of other hallucinogens we have not discussed are

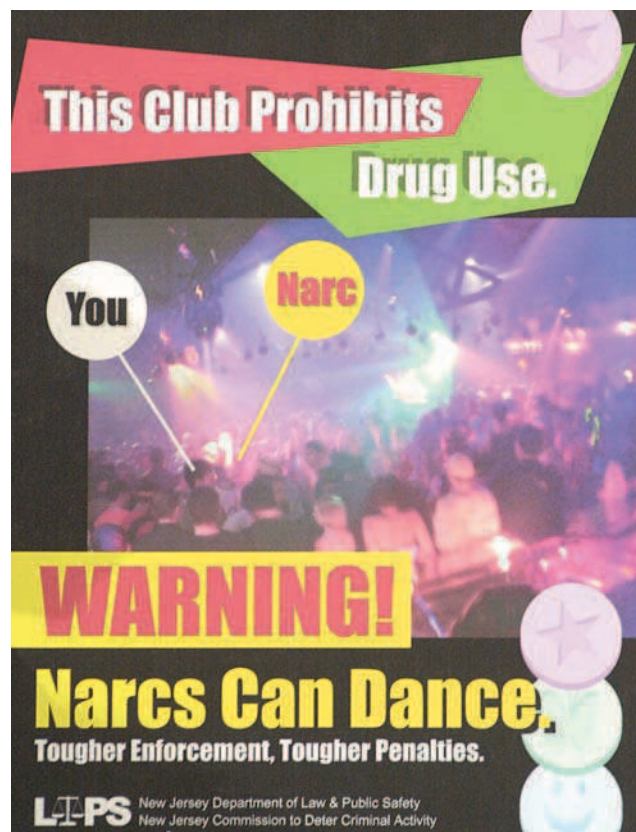
similar to acetylcholine. However, the mechanisms responsible for the hallucinations and other perceptual changes that users experience remain unknown.

Other Drugs of Abuse

A number of other substances are used by individuals to alter sensory experiences. We briefly describe inhalants, steroids, and a group of drugs commonly referred to as designer drugs.

Inhalants include a variety of substances found in volatile solvents—making them available to breathe into the lungs directly. Some common inhalants that are used abusively include spray paint, hair spray, paint thinner, gasoline, amyl nitrate, nitrous oxide (“laughing gas”), nail polish remover, felt-tipped markers, airplane glue, contact cement, dry-cleaning fluid, and spot remover (Sakai & Crowley, 2009). A typical person who engages in inhalant use tends to be male, Caucasian, live in rural or small towns, have higher levels of anxiety and depression, and show more impulsive and fearless temperaments (Perron & Howard, 2009). These drugs are rapidly absorbed into the bloodstream through the lungs by inhaling them from containers or on a cloth held up to the mouth and nose. The high associated with the use of inhalants resembles that of alcohol intoxication and usually includes dizziness, slurred speech, incoordination, euphoria, and lethargy (American Psychiatric Association, 2000). Users build up a tolerance to the drugs, and withdrawal—which involves sleep disturbance, tremors, irritability, and nausea—can last from 2 to 5 days. Unfortunately, use can also increase aggressive and antisocial behavior, and long-term use can damage bone marrow, kidneys, liver, and the brain (Sakai & Crowley, 2009).

Anabolic-androgenic steroids (more commonly referred to as steroids or “roids” or “juice”) are derived from or are a synthesized form of the hormone testosterone (Pope & Brower, 2009). The legitimate medical uses of these drugs focus on people with asthma, anemia, breast cancer, and males with inadequate sexual development. However, the anabolic action of these drugs (that can produce increased body mass) has resulted in their illicit use by those wishing to bulk up and improve their physical abilities. Steroids can be taken orally or through injection, and some estimates suggest that approximately 2% of males will use the drug illegally at some point in their lives (Kanayama, Brower, Wood, Hudson, & Pope Jr., 2010). Users sometimes administer the drug on a schedule of several weeks or months followed by a break from its use—called “cycling”—or combine several types of steroids—called “stacking.” Steroid use differs from other drug use because the substance does not produce a desirable high but instead is used to enhance performance and body size. Dependence on the substance therefore seems to involve the desire to maintain the performance gains obtained rather than a need to reexperience an altered emotional or physical



▲ The proliferation of new recreational drugs such as ecstasy inspires ever more vigilance on the part of the legal system.

state. Research on the long-term effects of steroid use seems to suggest that mood disturbances are common (for example, depression, anxiety, and panic attacks) (Pope & Brower, 2009), and there is a concern that more serious physical consequences may result from regular use.

Another class of drugs—dissociative anesthetics—causes drowsiness, pain relief, and the feeling of being out of one’s body (Javitt & Zukin, 2009). Sometimes referred to as designer drugs, this growing group of drugs was originally developed by pharmaceutical companies to target specific diseases and disorders. It was only a matter of time before some began using the developing technology to design “recreational drugs.” We have already described one of the more common illicit designer drugs—MDMA, or ecstasy—in the section on stimulants. This amphetamine is one of a small but feared growing list of related substances that includes 3,4-methylenedioxymethamphetamine (MDA, or eve), and 2-(4-bromo-2,5-dimethoxy-phenyl)-ethylamine (BDMPEA, or Nexus) (Wu et al., 2009). Their ability to

heighten a person's auditory and visual perception, and the senses of taste and touch, has been incorporated into the activities of those who attend nightclubs, all-night dance parties (raves), or large social gatherings of primarily gay men (called "circuit parties").

Phencyclidine (or PCP) is snorted, smoked, or injected intravenously, and it causes impulsivity and aggressiveness. A drug related to phencyclidine and associated with the "drug club" scene is ketamine (street names include K, Special K, and cat valium), a dissociative anesthetic that produces a sense of detachment, along with a reduced awareness of pain (Javitt & Zukin, 2009). Gamma-hydroxybutyrate (GHB, or liquid ecstasy) is a central nervous system depressant that was marketed in health food stores in the 1980s as a means of stimulating muscle growth. Users report that, at low doses, it can produce a state of relaxation and increased tendency to verbalize but that at higher doses or with alcohol or other drugs it can result in seizures, severe respiratory depression, and coma. Use of all these drugs can result in tolerance and dependence, and their increasing popularity among adolescents and young adults raises significant public health concerns.

Concept Check 10.2

Determine whether the following statements about stimulants are true (T) or false (F).

1. ☐ Use of crack cocaine by a pregnant woman always adversely affects the developing fetus.
2. ☐ Regular use of stimulants can result in tolerance and dependence on the drugs.
3. ☐ Amphetamines have been used as appetite suppressants.
4. ☐ Compared to all other drugs, caffeine can produce the most variable reactions in people.
5. ☐ Amphetamines are naturally occurring drugs that induce feelings of elation and vigor and can reduce fatigue.
6. ☐ Stimulants are produced only in a laboratory.

Causes of Substance-Related Disorders

› What psychological and physiological processes lead to substance dependence?

We saw that despite his clear potential as an individual, Danny continued to use drugs to his detriment. Various factors help explain why people like Danny persist in using drugs. Drug abuse and dependence, once thought to be the result of moral weakness, are now understood to be influenced by a combination of biological and psychosocial factors.

Why do some people use psychoactive drugs without abusing or becoming dependent on them? Why do some people stop using these drugs or use them in moderate amounts after being dependent on them and others continue a lifelong pattern of dependence despite their efforts to stop? These questions continue to occupy the time and attention of numerous researchers throughout the world.

Biological Dimensions

In 2007, when American model and television personality Anna Nicole Smith died from an apparently accidental overdose of at least nine prescription medications—including methadone, Valium, and the sedative chloral hydrate—the unfortunate news created a media sensation. The tragedy was compounded by the fact that, just months before, her only son Daniel had died, also from an apparent drug overdose. Did the son inherit a vulnerability to addiction from his mother? Did he pick up Anna Nicole's habits from living with her over the years? Is it just a coincidence that both mother and son were so involved with drugs?

Familial and Genetic Influences

As you already have seen throughout this book, many psychological disorders are influenced in important ways by genetics. Mounting evidence indicates that drug abuse follows this pattern. A great deal of animal research confirms the importance of genetic influences on substance abuse. In work with humans, researchers conducting twin, family, and adoption studies have found that certain people are genetically vulnerable to drug abuse (Strain, 2009). Twin studies of smoking, for example, indicate a moderate genetic influence (e.g., Hardie, Moss, & Lynch, 2006; McCaffery, Papandonatos, Stanton, Lloyd-Richardson, & Niaura, 2008). However, most genetic data on substance abuse come from research on alcoholism, which is widely studied because alcohol use is legal and many people are dependent on it. Research in general suggests that genetic risk factors cut across all mood-altering drugs (Strain, 2009).

In a major twin study, the role of the environment, and the role of genetics, was examined in substance use, abuse, and dependence. Researchers studied more than 1,000 pairs of male twins and questioned them about their use of marijuana, cocaine, hallucinogens, sedatives, stimulants, and opiates (Kendler, Jacobson, Prescott, & Neale, 2003). The findings suggest that there are common genetic influences on the use of all of these drugs. However, the *use* of illegal drugs was primarily influenced by environmental factors, whereas *abuse and dependence* may be influenced primarily by genetic factors. Therefore, whether or not you

use drugs such as cocaine or heroin may be a factor of whom and what you are exposed to, but whether you will become addicted is largely a function of your biology. As the search for the genes influencing substance use, abuse, and dependence continues, the next obvious question is how these genes function when it comes to addiction—a field of research called *functional genomics* (Khokhar, Ferguson, Zhu, & Tyndale, 2010).

Genetic research to date tells us that substance abuse in general is affected by our genes but no one gene causes substance abuse or dependence. Genetic factors may affect how people experience certain drugs, which in turn may partly determine who will or will not become abusers. Just to illustrate how complex these relationships can be, research has found that certain genes are associated with a greater likelihood of heroin addiction in Hispanic and African American populations (Nielsen et al., 2008).

Neurobiological Influences

In general, the pleasurable experiences reported by people who use psychoactive substances partly explain why people continue to use them (Strain, 2009). In behavioral terms, people are positively reinforced for using drugs. But what mechanism is responsible for such experiences? Complex and fascinating studies indicate the brain appears to have a natural “pleasure pathway” that mediates our experience of reward. All abused substances seem to affect this internal reward center. In other words, what psychoactive drugs may have in common is their ability to activate this reward center and provide the user with a pleasurable experience, at least for a time.

The pleasure center was discovered more than 50 years ago by James Olds, who studied the effects of electrical stimulation on rat brains (Olds, 1956; Olds & Milner, 1954). If certain areas were stimulated with small amounts of electricity, the rats behaved as if they had received something pleasant, such as food. The exact location of the area in the human brain is still subject to debate, although it is believed to include the *dopaminergic system* and its *opioid-releasing neurons*, which begin in the midbrain *ventral tegmental area* and then work their way forward through the *nucleus accumbens* and on to the frontal cortex (Strain, 2009).

How do different drugs that affect different neurotransmitter systems all converge to activate the pleasure pathway, which is primarily made up of dopamine-sensitive neurons? Researchers are only beginning to sort out the answers to this question, but some surprising findings have emerged in recent years. For example, we know that amphetamines and cocaine act directly on the dopamine system. Other drugs, however, appear to increase the availability of dopamine in more roundabout and intricate ways. For example, the neurons in the brain’s ventral tegmental area are kept from continuous firing by GABA neurons. One thing that keeps us from being on an unending high is the presence of these GABA neurons, which act as the “brain police,” or superegos of the reward neurotransmitter system. Opiates (opium, morphine, heroin) inhibit GABA, which in turn stops the GABA neurons from inhibiting dopamine, which makes

more dopamine available in the brain’s pleasure pathway. Drugs that stimulate the reward center directly or indirectly include not only amphetamine, cocaine, and opiates but also nicotine and alcohol (Strain, 2009).

This complicated picture is far from complete. We now understand that other neurotransmitters in addition to dopamine—including serotonin and norepinephrine—are also involved in the brain’s reward system (Khokhar et al., 2010). The coming years should yield interesting insights into the interaction of drugs and the brain. One aspect that awaits explanation is how drugs not only provide pleasurable experiences (positive reinforcement) but also help remove unpleasant experiences such as pain, feelings of illness, or anxiety (negative reinforcement). Aspirin is a negative reinforcer: We take it not because it makes us feel good but because it stops us from feeling bad. In much the same way, one property of the psychoactive drugs is that they stop people from feeling bad, an effect as powerful as making them feel good.

With several drugs, negative reinforcement is related to the anxiolytic effect, the ability to reduce anxiety (discussed briefly in the section on the sedative, hypnotic, and anxiolytic drugs). Alcohol has an anxiolytic effect. The neurobiology of how these drugs reduce anxiety seems to involve the septal-hippocampal system (Gray, 1987), which includes a large number of GABA-sensitive neurons. Certain drugs may reduce anxiety by enhancing the activity of GABA in this region, thereby inhibiting the brain’s normal reaction (anxiety or fear) to anxiety-producing situations (Gordis, 2000; Pihl, Peterson, & Lau, 1993). Researchers have identified individual differences in the way people respond to alcohol. Understanding these response differences is important because they may help explain why some people continue to use drugs until they acquire a dependence on them, whereas others stop before this happens. A number of studies compare individuals with and without a family history of alcoholism (Gordis, 2000). They concluded that, compared to the sons of nonalcoholics, the sons of alcoholics may be more sensitive to alcohol when it is first ingested and then become less sensitive to its effects as the hours pass after drinking. This finding is significant because the euphoric effects of alcohol occur just after drinking but the experience after several hours is often sadness and depression. People who are at risk for developing alcoholism (in this case, the sons of alcoholics) may be better able to appreciate the initial highs of drinking and be less sensitive to the lows that come later, making them ideal candidates for continued drinking. In support of this observation, follow-up research over a 10-year period found that those men who tended to be less sensitive to alcohol also tended to drink more heavily and more often (Schuckit, 1994, 1998).

Psychological Dimensions

We have shown that the substances people use to alter mood and behavior have unique effects. The high from heroin differs substantially from the experience of smoking a cigarette, which in turn differs from the effects of am-

phetamines or LSD. Nevertheless, it is important to point out the similarities in the way people mentally react to most of these substances.

Positive Reinforcement

The feelings that result from using psychoactive substances are pleasurable in some way, and people will continue to take the drugs to recapture the pleasure. Research shows quite clearly that many drugs used and abused by humans also seem to be pleasurable to animals (Young & Herling, 1986). Laboratory animals will work to have their bodies injected with drugs such as cocaine, amphetamines, opiates, sedatives, and alcohol, which demonstrates that even without social and cultural influences these drugs are pleasurable.

Human research also indicates that to some extent all psychoactive drugs provide a pleasurable experience (Strain, 2009). In addition, the social contexts for drug taking may encourage its use, even when the use alone is not the desired outcome. One study found that among volunteers who preferred not to take Valium, pairing money with pill taking caused participants to switch from a placebo to Valium (Alessi, Roll, Reilly, & Johanson, 2002). Positive reinforcement in the use and the situations surrounding the use of drugs contributes to whether or not people decide to try to continue using drugs.

Negative Reinforcement

Most researchers have looked at how drugs help reduce unpleasant feelings through negative reinforcement. Many people are likely to initiate and continue drug use to escape from unpleasantness in their lives. In addition to the initial euphoria, many drugs provide escape from physical pain (opiates), from stress (alcohol), or from panic and anxiety (benzodiazepines). This phenomenon has been explored under a number of different names, including *tension reduction*, *negative affect*, and *self-medication*, each of which has a somewhat different focus (Strain, 2009).

Basic to many views of abuse and dependence is the premise that substance use becomes a way for users to cope with the unpleasant feelings that go along with life circumstances. For example, one study of 1,252 U.S. Army soldiers returning home from Operation Iraqi Freedom found that those exposed to violent combat and human trauma and those having direct responsibility for taking the life of another person were at increased risk for risk-taking and for more frequent and greater alcohol use (Killgore et al., 2008). People who experience other types of trauma such as sexual abuse are also more likely to abuse alcohol (Ullman, Najdowski, & Filipas, 2009). These observations emphasize the important role played by each aspect of abuse and dependence—biological, psychological, social, and cultural—in determining who will and who will not have difficulties with these substances.

In a study that examined substance use among adolescents as a way to reduce stress (Chassin, Pillow, Curran, Molina, & Barrera, 1993), researchers compared a group of adolescents with alcoholic parents with a group whose parents did not have drinking problems. The average age

of the adolescents was 12.7 years. The researchers found that just having a parent with alcohol dependence was a major factor in predicting who would use alcohol and other drugs. However, they also found that adolescents who reported negative affect, such as feeling lonely, crying a lot, or being tense, were more likely than others to use drugs. The researchers further determined that the adolescents from both groups tended to use drugs as a way to cope with unpleasant feelings. This study and others (see, for example, Pardini, Lochman, & Wells, 2004) suggest that one contributing factor to adolescent drug use is the desire to escape from unpleasantness. It also suggests that to prevent people from using drugs we may need to address influences such as stress and anxiety, a strategy we discuss in our section on treatment.

Many people who use psychoactive substances experience a crash after being high. If people reliably crash, why don't they just stop taking drugs? One explanation is given by Solomon and Corbit in an interesting integration of both the positive and the negative reinforcement processes (Solomon, 1980; Solomon & Corbit, 1974). The *opponent-process theory* holds that an increase in positive feelings will be followed shortly by an increase in negative feelings. Similarly, an increase in negative feelings will be followed by a period of positive feelings (Skinner & Aubin, 2010). Athletes often report feeling depressed after finally attaining a long-sought goal. The opponent-process theory claims that this mechanism is strengthened with use and weakened by disuse. So a person who has been using a drug for some time will need more of it to achieve the same results (tolerance). At the same time, the negative feelings that follow drug use tend to intensify. For many people, this is the point at which the motivation for drug taking shifts from desiring the euphoric high to alleviating the increasingly unpleasant crash. Unfortunately, the best remedy is more of the same drug. People who are hung over after drinking too much alcohol are often advised to have "the hair of the dog that bit you" (that is, have another drink). The sad irony here is that the very drug that can make you feel so bad is also the one thing that can take away your pain. You can see why people can become enslaved by this insidious cycle.

Researchers have also looked at substance abuse as a way of self-medicating for other problems. If people have difficulties with anxiety, for example, they may be attracted to barbiturates or alcohol because of their anxiety-reducing qualities. In one study, researchers were successful in treating a group of cocaine addicts who had ADHD with methylphenidate (Ritalin) (Levin, Evans, Brooks, & Garawi, 2007). They had hypothesized that these individuals used cocaine to help focus their attention. Once their ability to concentrate improved with the methylphenidate, the users reduced their use of cocaine.

Cognitive Factors

What people expect to experience when they use drugs influences how they react to them. A person who expects to be less inhibited when she drinks alcohol will act less in-

hibited whether she actually drinks alcohol or a placebo she thinks is alcohol (Moss & Albery, 2009). This observation about the influence of how we think about drug use has been labeled an *expectancy effect* and has received considerable research attention.

Expectancies develop before people actually use drugs, perhaps as a result of parents' and peers' drug use, advertising, and media figures who model drug use (Campbell & Oei, 2010). In one study, a large group of seventh- and eighth-graders were given questionnaires that focused on their expectations about drinking. The researchers reexamined the students 1 year later to see how their expectancies predicted their later drinking (Christiansen, Smith, Roehling, & Goldman, 1989). One surprising finding was the marked increase in drinking among the students only 1 year later. When researchers first questioned them, about 10% of the students reported getting drunk 2 to 4 times per year. This number had risen to 25% by the next year. The students' expectations of drinking did predict who would later have drinking problems. Students who thought that drinking would improve their social behavior and their cognitive and motor abilities (despite all evidence to the contrary) were more likely to have drinking problems 1 year later. These results suggest that adolescents may begin drinking partly because they believe drinking will have positive effects.

Expectations appear to change as people have more experience with drugs, although their expectations are similar for alcohol, nicotine, marijuana, and cocaine (Simons, Dvorak, & Lau-Barraco, 2009). Some evidence points to positive expectancies—believing you will feel good if you take a drug—as an indirect influence on drug problems. In other words, what these beliefs may do is increase the likelihood you will take certain drugs, which in turn will increase the likelihood that problems will arise.

Once people stop taking drugs after prolonged or repeated use, powerful urges called “cravings” can interfere with efforts to remain off these drugs (Epstein, Marrone, Heishman, Schmittner, & Preston, 2010). If you've ever tried to give up ice cream and then found yourself compelled to have some, you have a limited idea of what it might be like to crave a drug. These urges seem to be triggered by factors such as the availability of the drug, contact with things associated with drug taking (for example, sitting in a bar), specific moods (for example, being depressed), or having a small dose of the drug. For example, one study used a virtual reality apparatus to simulate visual, auditory, and olfactory (an alcohol-dipped tissue) cues (Lee et al., 2009) for alcohol-dependent adults. The participants could choose among kinds of alcoholic beverages (e.g., beer, whiskey, or wine), snacks, and drinking environments (beer garden, restaurant, and pub). The researchers found significant increases in cravings for alcohol under these conditions (Lee et al., 2009). This type of technology may make it easier for clinicians to assess potential problem areas for clients, which can then be targeted to help keep them from relapsing. Research is under way to determine how cravings may work in the brain and

if certain medications can be used to reduce these urges and help supplement treatment (Skinner & Aubin, 2010).

Social Dimensions

Previously, we pointed out the importance of exposure to psychoactive substances as a necessary prerequisite to their use and possible abuse. You could probably list a number of ways people are exposed to these substances—through friends, through the media, and so on. For example, research on the consequences of cigarette advertising suggests the effects of media exposure may be more influential than peer pressure in determining whether teens smoke (Jackson, Brown, & L'Engle, 2007).

Research suggests that drug-addicted parents spend less time monitoring their children than parents without drug problems (Dishion, Patterson, & Reid, 1988) and that this is an important contribution to early adolescent substance use (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006). When parents did not provide appropriate supervision, their children tended to develop friendships with peers who supported drug use. Children influenced by drug use at home may be exposed to peers who use drugs as well. A self-perpetuating pattern seems to be associated with drug use that extends beyond the genetic influences we discussed previously.

How does our society view people who are dependent on drugs? This issue is of tremendous importance because it affects efforts to legislate the sale, manufacture, possession, and use of these substances. It also dictates how drug-dependent individuals are treated. Two views of substance abuse and dependence characterize contemporary thought: the moral weakness and the disease models of dependence. According to the *moral weakness model of chemical dependence*, drug use is seen as a failure of self-control in the face of temptation; this is a psychosocial perspective. Proponents of this model see drug users as lacking the character or moral fiber to resist the lure of drugs. The *disease model of dependence*, in contrast, assumes that drug dependence is caused by an underlying physiological disorder; this is a biological perspective. Those who ascribe to this model think that just as diabetes or asthma can't be blamed on the afflicted individuals, neither should drug dependence. AA and similar organizations see drug dependence as an incurable disease over which the addict has no control (Kelly, Stout, Magill, Tonigan, & Pagano, 2010).

Neither perspective does justice to the complex interrelationship between the psychosocial and biological influences that affect substance disorders. Viewing drug use as moral weakness leads to punishing those afflicted with the disorder, whereas a disease model includes seeking treatment for a medical problem. Messages that the disorder is out of their control can at times be counterproductive. A comprehensive view of substance-related disorders that includes both psychosocial and biological influences is needed for this important societal concern to be addressed adequately.

Cultural Dimensions

When we examine a behavior as it appears in different cultures, it is necessary to reexamine what is considered abnormal (Kohn, Wintrobo, & Alarcon, 2009). Each culture has its own preferences for acceptable psychoactive drugs and its own prohibitions for substances it finds unacceptable. Keep in mind that in addition to defining what is or is not acceptable, cultural norms affect the rates of substance abuse and dependence in important ways. For example, poor economic conditions in certain parts of the world limit the availability of drugs, which appears partly to account for the relatively low prevalence of substance abuse in Mexico and Brazil (de Almeida-Filho, Santana, Pinto, & de Carvalho-Neto, 1991; Ortiz & Medicna-Mora, 1988).

However, in certain cultures, including Korea, people are expected to drink alcohol heavily on certain social occasions (C. K. Lee, 1992). As we have seen before, exposure to these substances, in addition to social pressure for heavy and frequent use, may facilitate their abuse, and this may explain the high alcohol abuse rates in countries like Korea. This cultural influence provides an interesting natural experiment when exploring gene–environment interactions. People of Asian descent are more likely to have the ALDH2 gene, which produces a severe “flushing” effect (reddening and burning of the face) after drinking alcohol. This flushing effect was thought to be responsible for a relatively low rate of drinking in the population. However, between 1979 and 1992—when increased drinking became socially expected—there was an increase in alcohol abuse (Higuchi et al., 1994). The protective value of having the ALDH2 gene was diminished by the change in cultural norms (Rutter, Moffit, & Caspi, 2006).

Cultural factors not only influence the rates of substance abuse but also determine how it is manifest. Research indicates that alcohol consumption in Poland and

Finland is relatively low, yet conflicts related to drinking and arrests for drunkenness in those countries are high compared to those in the Netherlands, which has about the same rate of alcohol consumption (Osterberg, 1986). Our discussion of expectancies may provide some insight into how the same amount of drinking can have different behavioral outcomes. Expectancies about the effects of alcohol use differ across cultures (for example, “Drinking makes me more aggressive” versus “Drinking makes me more withdrawn”); these differing expectancies may partially account for the variations in the consequences of drinking in Poland, Finland, and the Netherlands. Whether substance use is considered a harmful dysfunction often depends on the assumptions of the cultural group.

An Integrative Model

Any explanation of substance use, abuse, and dependence must account for the basic issue raised earlier in this chapter: Why do some people use drugs but not abuse them or become dependent? ■ Figure 10.6 illustrates how the multiple influences we have discussed may interact to account for this process. Access to a drug is a necessary but not a sufficient condition for abuse or dependence. Exposure has many sources, including the media, parents, peers, and, indirectly, lack of supervision. Whether people use a drug depends also on social and cultural expectations, some encouraging and some discouraging, such as laws against possession or sale of the drug.

The path from drug use to abuse and dependence is more complicated (see Figure 11.9). As major stressors aggravate many disorders we have discussed, so do they increase the risk of abuse and dependence on psychoactive substances. Genetic influences may be of several types. Some individuals may inherit a greater sensitivity to the effects of certain drugs; others may inherit an ability to metabolize substances

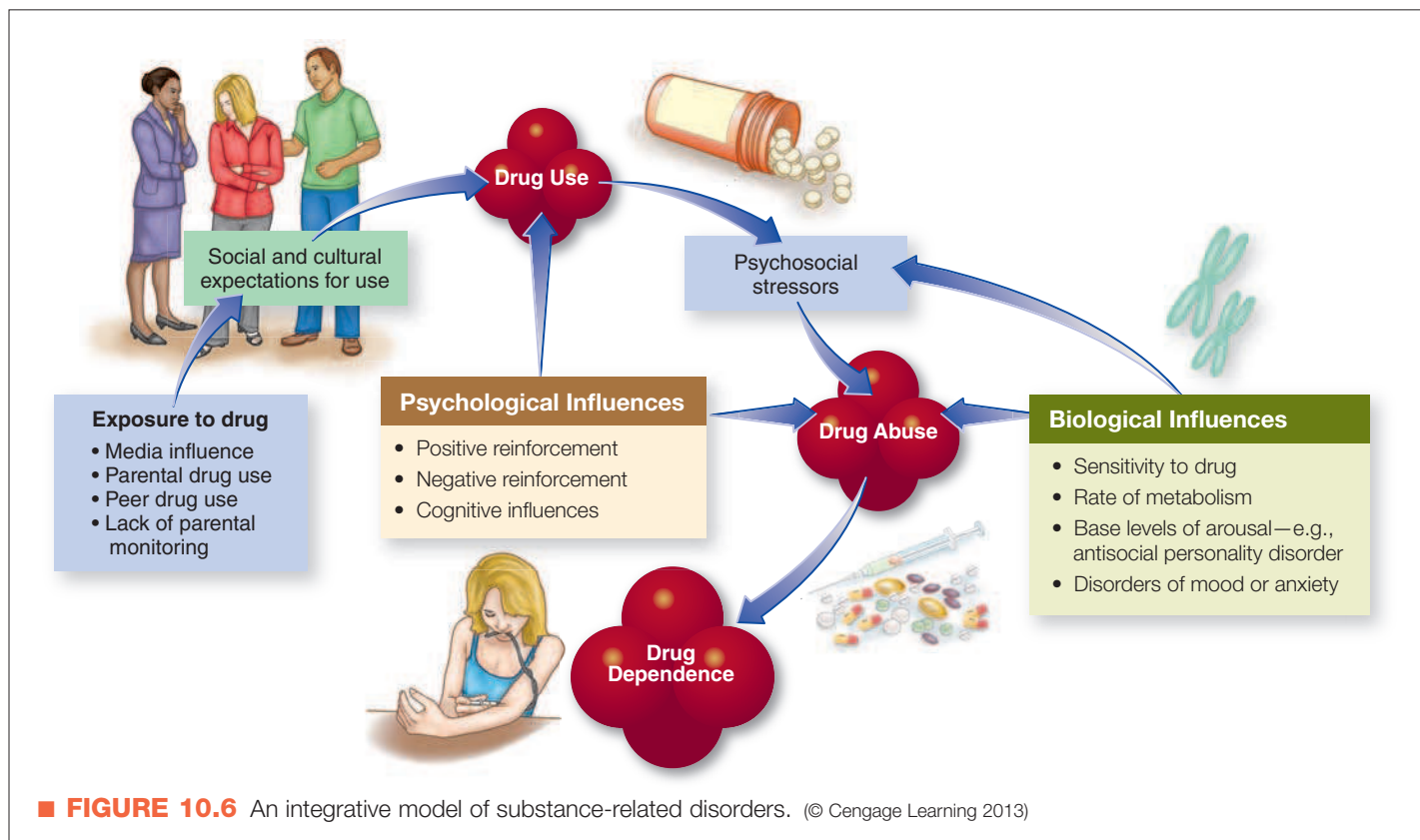
more quickly and are thereby able to tolerate higher (and more dangerous) levels. Other psychiatric conditions may indirectly put someone at risk for substance abuse. Antisocial personality disorder, characterized by the frequent violation of social norms (see Chapter 11), is thought to include a lowered rate of arousal; this may account for the increased prevalence of substance abuse in this group. People with mood disorders or anxiety disorders may self-medicate by using drugs to relieve the negative symptoms of their disorder, and this may account for the high rates of substance abuse in this group.

We know also that continued use of certain substances changes the way our brains work through a process called *neuroplasticity*. With the continued use of substances such as alcohol, cocaine, or the other drugs we explore in this chapter, the brain reorganizes itself to adapt. Un-



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▲ In many cultures, alcohol is used ceremonially.



fortunately, this change in the brain increases the drive to obtain the drug and decreases the desire for other nondrug experiences—both of which contribute to continued use and relapse (Russo, Mazei-Robison, Ables, & Nestler, 2009).

It is clear that abuse and dependence cannot be predicted from one factor, be it genetic, neurobiological, psychological, or cultural. For example, *some* people with the genes common to many with substance abuse problems do not become abusers. Many people who experience the most crushing stressors, such as abject poverty or bigotry and violence, cope without resorting to drug use. There are different pathways to abuse, and we are only now beginning to identify their basic outlines.

Once a drug has been used repeatedly, biology and cognition conspire to create dependence. Continual use of most drugs causes tolerance, which requires the user to ingest more of the drug to produce the same effect. Conditioning is also a factor. If pleasurable drug experiences are associated with certain settings, a return to such a setting will later cause urges to develop, even if the drugs themselves are not available.

Concept Check 10.3

Part A

Match the following descriptions with their corresponding stimulants: (a) opioids, (b) amphetamines,

(c) cocaine, (d) hallucinogens, (e) nicotine, and (f) caffeine.

1. This is the most common psychoactive substance because it is legal, elevates mood, and decreases fatigue. It's readily available in many beverages. _____
2. This substance causes euphoria, appetite loss, and increased alertness. Dependence appears after years of use. Mothers addicted to this have the potential to give birth to irritable babies. _____
3. These drugs, including LSD, influence perception, distortion of feelings, sights, sounds, and smells. _____
4. These lead to euphoria, drowsiness, and slowed breathing. These substances are analgesics, relieving pain. Users tend to be secretive, preventing a great deal of research in this area. _____
5. This substance stimulates the nervous system and relieves stress. The *DSM-IV-TR* describes withdrawal symptoms instead of an intoxication pattern. _____
6. These create feelings of elation and vigor and reduce fatigue. They are prescribed to people with narcolepsy and ADHD. _____

Part B

Indicate whether these statements about the causes of substance-related disorders are true (T) or false (F).

7. ___ Negative reinforcement is involved in the continuance of drug use because drugs often provide escape from pain, stress, panic, and so on.
8. ___ Research with both animals and humans indicates that substance abuse in general is affected by our genes, although not one particular gene.
9. ___ The media and parental influences have no effect on adolescent drug use; it is solely a peer pressure factor.
10. ___ The expectancy effect is illustrated when a person who expects to be less inhibited when drinking alcohol is given a placebo and acts or feels normally.
11. ___ To some extent, all psychoactive drugs provide a pleasurable experience, creating positive reinforcement.

Treatment of Substance-Related Disorders

› What psychological and medical treatments are available for substance-related disorders?

When we left Danny, he was in jail awaiting the legal outcome of being arrested for vehicular manslaughter. At this point in his life, Danny needs more than legal help—he needs to free himself from his addiction to alcohol and cocaine. And the first step in his recovery has to come from him. Danny must admit he needs help, that he does indeed have a problem with drugs, and that he needs others to help him overcome his chronic dependence. The personal motivation to work on a drug problem appears to be essential in the treatment of substance abuse (Miller, 2009). Unfortunately, although Danny's arrest seemed to shock him into realizing how serious his problems had become, he was not ready to confront them head-on.

Treating people who have substance-related disorders is a difficult task. Perhaps because of the combination of influences that often work together to keep people hooked, the outlook for those who are dependent on drugs is often not positive. You will see in the case of heroin dependence, for example, that a best-case scenario is often just trading one addiction (heroin) for another (methadone). And even people who successfully cease taking drugs may feel the urge to resume drug use all their lives.

Treatment for substance-related disorders focuses on multiple areas. Sometimes the first step is to help someone through the withdrawal process; typically, the ultimate goal is abstinence. In other situations, the goal is to get a person to maintain a certain level of drug use without escalating its intake, and sometimes it is geared toward preventing exposure to drugs. Because substance abuse arises from so many influences, it should not be surprising that treating people with substance-related disorders is not a simple matter of finding just the right drug or the best way to change thoughts or behavior.

Importantly, it is estimated that fewer than 25% of the people who have significant problems with substance use seek treatment for their problems (Dawson et al., 2005). To reach out to these individuals, efforts are under way to put

in place routine screenings for substance-related problems in settings such as doctor's offices, hospital emergency rooms, and even in college and university health clinics. This community-wide approach is an important part of identifying difficulties and bringing treatment to those in need (Tucker, Murphy, & Kertesz, 2010).

We discuss the treatment of substance-related disorders as a group because treatments have so much in common. For example, many programs that treat people for dependence on a variety of substances also teach skills for coping with life stressors. Some biological treatments focus on how to cancel out the effects of the ingested substances. We discuss the obvious differences among substances as they arise.

Biological Treatments

There have been a variety of biologically based approaches designed primarily to change the way substances are experienced. In other words, scientists are trying to find ways to prevent people from experiencing the pleasant highs associated with drug use or to find alternative substances that have some of the positive effects (for example, reducing anxiety) without their addictive properties.

Agonist Substitution

Increased knowledge about how psychoactive drugs work on the brain has led researchers to explore ways of changing how they are experienced by people who are dependent on them. One method, **agonist substitution**, involves providing the person with a safe drug that has a chemical makeup similar to the addictive drug (therefore the name *agonist*). *Methadone* is an opiate agonist that is often given as a heroin substitute (e.g., Schwartz et al., 2009). However, when users develop a tolerance for methadone it loses its analgesic and sedative qualities. Because heroin and methadone have *cross-tolerance*, meaning they act on the same neurotrans-

mitter receptors, a heroin addict who takes methadone may become addicted to the methadone instead, but this is not always the case (Maremmanni et al., 2009). Research suggests that when addicts combine methadone with counseling, many reduce their use of heroin and engage in less criminal activity (Schwartz et al., 2009). A newer agonist—buprenorphine—blocks the effects of opiates and seems to encourage better compliance than would a nonopiate or opiate antagonist (Strain et al., 2009).

Addiction to cigarette smoking is also treated by a substitution process. The drug—nicotine—is provided to smokers in the form of gum, patch, inhaler, or nasal spray, which lack the carcinogens included in cigarette smoke; the dose is later tapered off to lessen withdrawal from the drug. In general, these replacement strategies successfully help people stop smoking, although they work best with supportive psychological therapy (Hughes, 2009). People must be taught how to use the gum properly, and a portion of the people who successfully quit smoking become dependent on the gum itself (Etter, 2009). The nicotine patch, which requires less effort and provides a steadier nicotine replacement, may be somewhat more effective in helping people quit smoking (Hughes, 2009). Another medical treatment for smoking—*bupropion* (*Zyban*)—is also commonly prescribed, under the trade name *Wellbutrin*, as an antidepressant. This drug curbs the cravings without being an agonist for nicotine (rather than helping smokers trying to quit by making them less depressed).

Antagonist Treatments

We described how many psychoactive drugs produce euphoric effects through their interaction with the neurotransmitter systems in the brain. What would happen if the effects of these drugs were blocked so that the drugs no longer produced the pleasant results? Would people stop using the drugs? **Antagonist drugs** block or counteract the effects of psychoactive drugs, and a variety of drugs that seem to cancel out the effects of opiates have been used with people dependent on a variety of substances. The most often prescribed opiate-antagonist drug, *naltrexone*, has had only limited success with individuals who are not simultaneously participating in a structured treatment program (Krupitsky & Blokhina, 2010). When it is given to a person who is dependent on opiates, it produces immediate withdrawal symptoms, an extremely unpleasant effect. A person must be free from these withdrawal symptoms completely before starting naltrexone, and because it removes the euphoric effects of opiates, the user must be highly motivated to continue treatment. *Acamprosate* also seems to decrease cravings in people dependent on alcohol, and it works best with highly motivated people who are also participating in psychosocial interventions (Kennedy et al., 2010). The brain mechanisms for the effects of this drug are not well understood (Oslin & Klaus, 2009).

Overall, naltrexone or the other drugs being explored are not the magic bullets that would shut off the addict's response to psychoactive drugs and put an end to dependence. They do appear to help some drug abusers handle

withdrawal symptoms and the cravings that accompany attempts to abstain from drug use; antagonists may therefore be a useful addition to other therapeutic efforts.

Aversive Treatment

In addition to looking for ways to block the euphoric effects of psychoactive drugs, clinicians in this area may prescribe drugs that make ingesting the abused substances extremely unpleasant. The expectation is that a person who associates the drug with feelings of illness will avoid using the drug. The most commonly known aversive treatment uses *disulfiram* (*Antabuse*) with people who are alcohol dependent (Ivanov, 2009). Antabuse prevents the breakdown of acetaldehyde, a by-product of alcohol, and the resulting buildup of acetaldehyde causes feelings of illness. People who drink alcohol after taking Antabuse experience nausea, vomiting, and elevated heart rate and respiration. Ideally, Antabuse is taken each morning, before the desire to drink arises. Unfortunately, noncompliance is a major concern, and a person who skips the Antabuse for a few days is able to resume drinking.

Efforts to make smoking aversive have included the use of *silver nitrate* in lozenges or gum. This chemical combines with the saliva of a smoker to produce a bad taste in the mouth. Research has not shown it to be particularly effective (Jensen, Schmidt, Pedersen, & Dahl, 1991). Both Antabuse for alcohol abuse and silver nitrate for cigarette smoking have generally been less than successful as treatment strategies on their own, primarily because they require that people be extremely motivated to continue taking them outside the supervision of a mental health professional.

Other Biological Approaches

Medication is often prescribed to help people deal with the often-disturbing symptoms of withdrawal. *Clonidine*, developed to treat hypertension, has been given to people withdrawing from opiates. Because withdrawal from certain prescribed medications such as sedative drugs can cause cardiac arrest or seizures, these drugs are gradually tapered off to minimize dangerous reactions. In addition, sedative drugs (benzodiazepines) are often prescribed to help minimize discomfort for people withdrawing from other drugs, such as alcohol (Sher, Martinez, & Littlefield, 2011).

Psychosocial Treatments

Most biological treatments for substance abuse show some promise with people who are trying to eliminate their drug habit. However, not one of these treatments alone is suc-

agonist substitution A replacement of a drug on which a person is dependent with one that has a similar chemical makeup, an agonist. Used as a treatment for substance dependence.

antagonist drug The medication that blocks or counteracts the effects of a psychoactive drug.

cessful for most people (Schuckit, 2009b). Most research indicates a need for social support or therapeutic intervention. Because so many people need help to overcome their substance disorder, a number of models and programs have been developed. Unfortunately, in no other area of psychology have unvalidated and untested methods of treatment been so widely accepted. A reminder: A program that has not been subject to the scrutiny of research *may* work, but the sheer number of people receiving services of unknown value is still cause for concern. We next review several therapeutic approaches that *have* been evaluated.

Inpatient Facilities

The first specialized facility for people with substance abuse problems was established in 1935, when the first federal narcotic “farm” was built in Lexington, Kentucky. Now mostly privately run, such facilities are designed to help people get through the initial withdrawal period and to provide supportive therapy so that they can go back to their communities (Morgan, 1981). Inpatient care can be extremely expensive (Bender, 2004). The question arises, then, as to how effective this type of care is compared to outpatient therapy that can cost 90% less. Research suggests there may be no difference between intensive residential setting programs and quality outpatient care in the outcomes for alcoholic patients (Miller & Hester, 1986) or for drug treatment in general (Guydish, Sorensen, Chan, Werdegart, & Acampora, 1999; Smith, Kraemer, Miller, DeBusk, & Taylor, 1999).

Alcoholics Anonymous and Its Variations

Without question, the most popular model for the treatment of substance abuse is a variation of the Twelve Steps program first developed by Alcoholics Anonymous (AA). Established in 1935 by two alcoholic professionals, William “Bill W.” Wilson and Robert “Dr. Bob” Holbrook Smith, the foundation of AA is the notion that alcoholism is a disease and alcoholics must acknowledge their addiction to alcohol and its destructive power over them. The addiction is seen as more powerful than any individual; therefore, they must look to a higher power to help them overcome their shortcomings. Central to the design of AA is its independence from the established medical community and the freedom it offers from the stigmatization of alcoholism (Denzin, 1987; Robertson, 1988). An important component is the social support it provides through group meetings.

Since 1935, AA has steadily expanded to include almost 106,000 groups in more than 100 countries (White & Kurtz, 2008). In one survey, 9% of the adult population in the United States reported they had at one time attended an AA meeting (Room & Greenfield, 2006). The Twelve Steps of AA are the basis of its philosophy (see Table 10.1). In them, you can see the reliance on prayer and a belief in God.

Reaction is rarely neutral to AA and similar organizations, such as Cocaine Anonymous and Narcotics Anonymous (Miller, Gold, & Pottash, 1989). Many people credit the approach with saving their lives, whereas others object

Table 10.1 Twelve Suggested Steps of Alcoholics Anonymous

1. We admitted we were powerless over alcohol—that our lives had become unmanageable.
2. We came to believe that a power greater than ourselves could restore us to sanity.
3. We made a decision to turn our will and our lives over to the care of God as we understood Him.
4. We made a searching and fearless moral inventory of ourselves.
5. We admitted to God, to ourselves, and to another human being the exact nature of our wrongs.
6. We were entirely ready to have God remove all these defects of character.
7. We humbly asked Him to remove our shortcomings.
8. We made a list of all persons we had harmed and became willing to make amends to them all.
9. We made direct amends to such people wherever possible, except when to do so would injure them or others.
10. We continued to take personal inventory and, when we were wrong, promptly admitted it.
11. We sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out.
12. Having had a spiritual awakening as the result of these steps, we tried to carry this message to alcoholics and to practice these principles in all our affairs.

Source: The Twelve Steps are reprinted with permission of Alcoholics Anonymous World Services (AAWS). Permission to reprint the Twelve Steps does not mean that AAWS has reviewed or approved the contents of the publication or that AAWS necessarily agrees with the views expressed herein. AA is a program of recovery from alcoholism only—use of the Twelve Steps in connection with programs and activities which are patterned after AA, but which address other problems, or in any other non-AA context, does not imply otherwise.

that its reliance on spirituality and its adoption of a disease model fosters dependence. Although there are not enough data to show what percentage of people abstain from using alcohol as a result of participating in AA, research finds that those people who regularly participate in AA activities—or other similar supportive approaches—and follow its guidelines carefully are more likely to have a positive outcome (Moos & Moos, 2007). AA can be an effective treatment for highly motivated people with alcohol dependence. We do not yet know, however, who is likely to succeed and who is likely to fail in AA. Other groups now exist (e.g., Rational Recovery, Moderation Management, Women for Sobriety, SMART Recovery) for individuals who benefit from the social support of others but who may not want the abstinence-oriented twelve-step program offered by groups modeled after AA (Tucker et al., 2010).

Controlled Use

One of the tenets of AA is total abstinence; recovering alcoholics who have just one sip of alcohol are believed to have “slipped” until they again achieve abstinence. However,

some researchers question this assumption and believe at least a portion of abusers of several substances (notably alcohol and nicotine) may be capable of becoming social users without resuming their abuse of these drugs.

In the alcoholism treatment field, the notion of teaching people **controlled drinking** is extremely controversial, partly because of a classic study showing partial success in teaching severe abusers to drink in a limited way (Sobell & Sobell, 1978). The participants were 40 male alcoholics in an alcoholism treatment program at a state hospital who were thought to have a good prognosis. The men were assigned either to a program that taught them how to drink in moderation (experimental group) or to a group that was abstinence oriented (control group). The researchers, Mark and Linda Sobell, followed the men for more than 2 years, maintaining contact with 98% of them. During the second year after treatment, those who participated in the controlled drinking group were functioning well 85% of the time, whereas the men in the abstinence group were reported to be doing well only 42% of the time. Although results in the two groups differed significantly, some men in both groups suffered serious relapses and required re-hospitalization and some were incarcerated. The results of this study suggest that controlled drinking may be a viable alternative to abstinence for some alcohol abusers, although it clearly isn't a cure.

The controversy over this study began with a paper published in the prestigious journal *Science* (Pendery, Maltzman, & West, 1982). The authors reported they had contacted the men in the Sobell study after 10 years and found that only 1 of the 20 men in the experimental group maintained a pattern of controlled drinking. Although this reevaluation made headlines and was the subject of a segment on the *60 Minutes* television show, it had a number of flaws (Marlatt, Larimer, Baer, & Quigley, 1993). Most serious was the lack of data on the abstinence group over the same 10-year follow-up period. Because no treatment study on substance abuse pretends to help everyone who participates, control groups are added to compare progress. In this case, we need to know how well the controlled drinking group fared compared to the abstinence group.

The controversy over the Sobell study still has a chilling effect on controlled drinking as a treatment of alcohol abuse in the United States. In contrast, controlled drinking is widely accepted as a treatment for alcoholism in the United Kingdom. Despite opposition, research on this approach has been conducted in the ensuing years (e.g., Orford & Keddle, 2006), and the results seem to show that controlled drinking is at least as effective as abstinence but that neither treatment is successful for 70% to 80% of patients over the long term—a rather bleak outlook for people with alcohol dependence problems.

Component Treatment

Most comprehensive treatment programs aimed at helping people with substance abuse and dependence problems have a number of components thought to boost the effectiveness of the “treatment package.” We saw in our review

of biological treatments that their effectiveness is increased when psychologically based therapy is added. In aversion therapy, which uses a conditioning model, substance use is paired with something extremely unpleasant, such as a brief electric shock or feelings of nausea. For example, a person might be offered a drink of alcohol and receive a painful shock when the glass reaches his lips. The goal is to counteract the positive associations with substance use with negative associations. The negative associations can also be made by imagining unpleasant scenes in a technique called *covert sensitization* (Cautela, 1966); the person might picture herself beginning to snort cocaine and be interrupted with visions of herself becoming violently ill (Kearney, 2006).

One component that seems to be a valuable part of therapy for substance use is *contingency management* (Higgins, Sigmon, & Heil, 2008). Here, the clinician and the client together select the behaviors that the client needs to change and decide on the reinforcers that will reward reaching certain goals, perhaps money or small retail items like CDs. In a study of cocaine abusers, clients received cash vouchers (up to almost \$2,000) for having cocaine-negative urine specimens (Higgins et al., 2006). This study found greater abstinence rates among cocaine-dependent users with the contingency management approach and other skills training than among users in a more traditional counseling program that included a twelve-step approach to treatment.

Another package of treatments is the *community reinforcement approach* (Higgins et al., 2008). In keeping with the multiple influences that affect substance use, several facets of the drug problem are addressed to help identify and correct aspects of the person's life that might contribute to substance use or interfere with efforts to abstain. First, a spouse, friend, or relative who is not a substance user is recruited to participate in relationship therapy to help the abuser improve relationships with other important people. Second, clients are taught how to identify the antecedents and consequences that influence their drug taking. For example, if they are likely to use cocaine with certain friends, clients are taught to recognize the relationships and encouraged to avoid the associations. Third, clients are given assistance with employment, education, finances, or other social service areas that may help reduce their stress. Fourth, new recreational options help the person replace substance use with new activities. There is now strong empirical support for the effectiveness of this approach with alcohol and cocaine abusers (Higgins et al., 2008).

Obstacles to successful treatment for substance use and dependence include a lack of personal awareness that one has a problem and an unwillingness to change. An increas-

controlled drinking An extremely controversial treatment approach to alcohol dependence, in which severe abusers are taught to drink in moderation.

ingly common intervention approach that directly addresses these needs is referred to as *motivational interviewing* (Miller, 2009). Motivational interviewing (MI) is based on the work of Miller and Rollnick (2002), who proposed that behavior change in adults is more likely with empathetic and optimistic counseling (the therapist understands the client's perspective and believes that he or she can change) and a focus on a personal connection with the client's core values (for example, drinking and its consequences interferes with spending more time with family). By reminding the client about what he or she cherishes most, MI intends to improve the individual's belief that any changes made (e.g., drinking less) will have positive outcomes (e.g., more family time) and the individual is therefore more likely to make the recommended changes. Motivational interviewing has been used to assist individuals with a variety of substance use problems, and it appears to be a useful component to add to psychological treatment (Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010).

Cognitive-behavioral therapy (CBT) is an effective treatment approach for many psychological disorders (see Chapter 4, for example) and it is also one of the most well designed and studied approaches for treating substance dependence (Carroll, 2008; Sher et al., 2011). This treatment addresses multiple aspects of the disorder, including a person's reactions to cues that lead to substance use (for example, being among certain friends) (Ferguson & Shiffman, 2009) and thoughts and behaviors to resist use (Wiers et al., 2008). Another target of CBT addresses the problem of relapse. Marlatt and Gordon's (1985) **relapse prevention** treatment model looks at the learned aspects of dependence and sees relapse as a failure of cognitive and behavioral coping skills (Witkiewitz & Marlatt, 2004). Therapy involves helping people remove any ambivalence about stopping their drug use by examining their beliefs about the positive aspects of the drug ("There's nothing like a cocaine high") and confronting the negative consequences of its use ("I fight with my wife when I'm high"). High-risk situations are identified ("having extra money in my pocket"), and strategies are developed to deal with potentially problematic situations and with the craving that arises from abstinence. Incidents of relapse are dealt with as occurrences from which the person can recover; instead of looking on these episodes as inevitably leading to more drug use, people in treatment are encouraged to see them as episodes brought on by temporary stress or a situation that can be changed. Research on this technique suggests that it may be particularly effective for alcohol problems (Irvin, Bowers, Dunn, & Wang, 1999), and in treating a variety of other substance use disorders (see, for example, Burleson & Kaminer, 2005).

Prevention

Over the past few years, the strategies for preventing substance abuse and dependence have shifted from education-based approaches (for example, teaching schoolchildren that drugs can be harmful) to more wide-ranging ap-

proaches, including changes in the laws regarding drug possession and use and community-based interventions (Sher et al., 2011). Many states, for example, have implemented education-based programs in schools to try to deter students from using drugs. The widely used Drug Abuse Resistance Education (DARE) program encourages a "no drug use" message through fear of consequences, rewards for commitments not to use drugs, and strategies for refusing offers of drugs. Unfortunately, several extensive evaluations suggest that this type of program may not have its intended effects (Pentz, 1999).

Fortunately, more comprehensive programs that involve skills training to avoid or resist social pressures (such as peers) and environmental pressures (such as media portrayals of drug use) can be effective in preventing drug abuse among some. For example, one large-scale longitudinal study used a community-based intervention strategy to reduce binge drinking and alcohol-related injuries (for example, car crashes and assaults) (Holder et al., 2000). Three communities were mobilized to encourage responsible beverage service (that is, not serving too much alcohol to bar patrons), limit alcohol access to underage drinkers, and increase local enforcement of drinking and driving laws to limit access to alcohol. People's self-reports of drinking too much and drinking and driving were fewer after the intervention, as were alcohol-related car accidents and assaults.

It may be that our most powerful preventive strategy involves cultural change. Over the past 25 years or so, we have gone from a "turn on, tune in, drop out," "if it feels good, do it," and "I get high with a little help from my friends" society to one that champions statements like "Just say no to drugs." The social unacceptability of excessive drinking, smoking, and other drug use is probably responsible for this change.

Implementing this sort of intervention is beyond the scope of one research investigator or even a consortium of researchers collaborating across many sites. It requires the cooperation of governmental, educational, and even religious institutions. We may need to rethink our approach to preventing drug use and abuse (Cook, 1993, p. 1750).

Concept Check 10.4

Determine whether you understand how treatments for substance-related disorders work by matching the examples with the following terms: (a) dependent, (b) cross-tolerant, (c) agonist substitution, (d) antagonist, (e) relapse prevention, (f) controlled drinking, (g) aversion therapy, (h) covert sensitization, (i) contingency management, and (j) anonymous.

1. _____ is a controversial treatment for alcohol abuse because of a negative but flawed experimental finding but also because it conflicts with the belief in total abstinence.

2. Methadone is used to help heroin addicts kick their habit in a method called _____.
3. _____ drugs block or counteract the effects of psychoactive drugs and are sometimes effective in treating addicts.
4. In _____, the clinician and the client work together to decide which behaviors the client needs to change and which reinforcers will be used as rewards for reaching set goals.
5. It has been difficult to evaluate rigorously the effectiveness of Alcoholics Anonymous because the participants are _____.
6. In _____, substance use is paired with something extremely unpleasant (like alcohol and vomiting with Antabuse).

7. Heroin and methadone are _____, which means they affect the same neurotransmitter receptors.
8. The _____ model involves therapy that helps individuals remove ambivalence about stopping their drug use by examining their beliefs about the positive and negative aspects of drug use.
9. By imagining unpleasant scenes, the _____ technique helps the person associate the negative effects of the drug with drug use.
10. Unfortunately, the heroin addict may become permanently _____ on methadone.

Impulse-Control Disorders

› What conditions are listed in *DSM-IV-TR* as impulse-control disorders?

A number of the disorders we describe in this book start with an irresistible impulse—usually one that will ultimately be harmful to the person affected. Typically, the person experiences increasing tension leading up to the act and, sometimes, pleasurable anticipation of acting on the impulse. For example, paraphilias such as pedophilia (sexual attraction to children), eating disorders, and the substance-related disorders in this chapter often commence with temptations or desires that are destructive but difficult to resist. *DSM-IV-TR* includes five additional impulse-control disorders (labeled “impulse-control disorders not elsewhere classified”) that are not included under other categories—intermittent explosive disorder, kleptomania, pyromania, pathological gambling, and trichotillomania (Moeller, 2009; Nock, Cha, & Dour, 2011).

Intermittent Explosive Disorder

People with **intermittent explosive disorder** have episodes in which they act on aggressive impulses that result in serious assaults or destruction of property (Coccaro & McCloskey, 2010). Although it is common, unfortunately, among the general population to observe aggressive outbursts, when you rule out the influence of other disorders (for example, antisocial personality disorder, borderline personality disorder, a psychotic disorder, and Alzheimer’s disease) or substance use, this disorder is not often diagnosed. In a rare but important large study of more than 9,000 people, researchers found that the lifetime prevalence of this disorder was 7.3% (Kessler et al., 2006).

This diagnosis is controversial and has been debated throughout the development of the *DSM*. One concern,

among others, is that by validating a general category that covers aggressive behavior it may be used as a legal defense—insanity—for all violent crimes (Coccaro & McCloskey, 2010).

Research is at the beginning stages for intermittent explosive disorder and focuses on the influence of neurotransmitters such as serotonin and norepinephrine and testosterone levels, along with their interaction with psychosocial influences (stress, disrupted family life, and parenting styles). These and other influences are being examined to explain the origins of this disorder (Moeller, 2009). Cognitive-behavioral interventions (for example, helping the person identify and avoid “triggers” for aggressive outbursts) and approaches modeled after drug treatments appear the most effective for these individuals, although few controlled studies yet exist (McCloskey, Noblett, Deffenbacher, Gollan, & Coccaro, 2008).

Kleptomania

The story of wealthy actress Winona Ryder stealing \$5,500 worth of merchandise from Saks Fifth Avenue in Beverly Hills, California in December 2001, was as puzzling as it was

relapse prevention The extending therapeutic progress by teaching the client how to cope with future troubling situations.

intermittent explosive disorder The episodes during which a person acts on aggressive impulses that result in serious assaults or destruction of property.

titillating. Why risk a multimillion-dollar career over some clothes that she could easily afford? Was hers a case of **kleptomania**—a recurrent failure to resist urges to steal things that are not needed for personal use or their monetary value? This disorder appears to be rare, but it is not well studied, partly because of the stigma associated with identifying oneself as acting out this illegal behavior. The patterns described by those with this disorder are strikingly similar—the person begins to feel a sense of tension just before stealing, which is followed by feelings of pleasure or relief while the theft is committed (Nock et al., 2011). People with kleptomania score high on assessments of impulsivity, reflecting their inability to judge the immediate gratification of stealing compared to the long-term negative consequences (for example, arrest, embarrassment) (Grant & Kim, 2002). Patients with kleptomania often report having no memory (amnesia) about the act of shoplifting (Hollander, Berlin, & Stein, 2009). Brain-imaging research supports these observations, with one study finding damage in areas of the brain associated with poor decision making (inferior frontal regions) (Grant, Correia, & Brennan-Krohn, 2006).

There appears to be high comorbidity between kleptomania and mood disorders and to a lesser extent with substance abuse and dependence (Baylé, Caci, Millet, Richa, & Olié, 2003). Some refer to kleptomania as an “antidepressant” behavior, or a reaction on the part of some to relieve unpleasant feelings through stealing (Fishbain,

1987). To date, only case study reports of treatment exist, and these involve either behavioral interventions or use of antidepressant medication.

Pyromania

Just as we know that someone who steals does not necessarily have kleptomania, it is also true that not everyone who sets fires is considered to have **pyromania**—an impulse-control disorder that involves having an irresistible urge to set fires. Again, the pattern parallels that of kleptomania, where the person feels a tension or arousal before setting a fire and a sense of gratification or relief while the fire burns. These individuals will also be preoccupied with fires and the associated equipment involved in setting and putting out these fires (Lejoyeux, McLoughlin, & Ades, 2006). Also rare, pyromania is diagnosed in less than 4% of arsonists (Scott, Hilty, & Brook, 2003) because arsonists can include people who set fires for monetary gain or revenge rather than to satisfy a physical or psychological urge. Because so few people are diagnosed with this disorder, research on etiology and treatment is almost nonexistent. Research that has been conducted follows the general group of arsonists (of which only a small percentage have pyromania) and examines the role of a family history of fire setting along with comorbid impulse disorders (antisocial personality disorder and alcoholism). Treatment is generally cognitive-behavioral and involves helping the person identify the signals that initiate the urges and teaching coping strategies to resist the temptation to start fires (Bumpass, Fagelman, & Brix, 1983; McGrath, Marshall, & Prior, 1979).

Pathological Gambling

Gambling has a long history—for example, dice have been found in Egyptian tombs (Greenberg, 2005). It is growing in popularity in this country, and in many places it is a legal and acceptable form of entertainment. Perhaps as a result, and unlike the other impulse-control disorders, which are relatively rare, **pathological gambling** affects an increasing number of people, estimated between 3% and 5% of adult Americans (Greenberg, 2005). It is estimated that among pathological gamblers, 14% have lost at least one job, 19% have declared bankruptcy, 32% have been arrested, and 21% have been incarcerated (Gerstein et al., 1999). The *DSM-IV* criteria for pathological gambling set forth the associated behaviors that characterize people who are problem gamblers. These include the same pattern of urges we observe in the other impulse-control disorders. Note too the parallels with substance dependence, with the need to gamble increasing amounts of money over time and the “withdrawal symptoms” such as restlessness and irritability when attempting to stop. In fact, these parallels to substance abuse have led to discussions about recategorizing pathological gambling in *DSM-5*; some believe that this disorder should be moved from the group of disorders called “impulse-control disorders not elsewhere classified” to the “substance-related disorders” category and that this “substance-related



REUTERS/Lee Celano/Pool/Landov

▲ In 2002, actress Winona Ryder was found guilty of shoplifting items worth several thousand dollars from a Beverly Hills department store.

disorders” category should be renamed “addiction and related disorders” (Moeller, 2009).

There is a growing body of research on the nature and treatment of pathological gambling. For example, work is under way to explore the biological origins of the urge to gamble among pathological gamblers. In one study, brain-imaging technology (echoplanar functional magnetic resonance imaging) was used to observe brain function while gamblers observed videotapes of other people gambling (Potenza et al., 2003). A decreased level of activity was observed in those regions of the brain that are involved in impulse regulation when compared to controls, suggesting an interaction between the environmental cues to gamble and the brain’s response (which may be to decrease the ability to resist these cues). Abnormalities in the dopamine system (which may account for the pleasurable consequences of gambling) and the serotonin system (involved in impulsive behavior) have been found in some studies of pathological gamblers (Moeller, 2009).

Treatment of gambling problems is difficult. Those with pathological gambling exhibit a combination of characteristics—including denial of the problem, impulsivity, and continuing optimism (“One big win will cover my losses!”)—that interfere with effective treatment. Pathological gamblers often experience cravings similar to those who are substance dependent (Wulfert, Franco, Williams, Roland, & Maxson, 2008; Wulfert, Maxson, & Jardin, 2009). Treatment is often similar to substance dependence treatment, and there is a parallel Gambler’s Anonymous that incorporates the same twelve-step program we discussed previously. However, the evidence of effectiveness for Gambler’s Anonymous suggests that 70% to 90% drop out of these programs and that the desire to quit must be present before intervention (McElroy & Arnold, 2001). Cognitive-behavioral interventions are also being studied, with one study including a variety of components—setting financial limits, planning alternative activities, preventing relapse, and imaginal desensitization. This preliminary research provides a more optimistic view of potential outcomes (Dowling, Smith, & Thomas, 2007).

Trichotillomania

The urge to pull out one’s own hair from anywhere on the body, including the scalp, eyebrows, and arms, is referred to as **trichotillomania**. This behavior results in noticeable hair loss, distress, and significant social impairments. This disorder can often have severe social consequences, and, as a result, those affected can go to great lengths to conceal their behavior. Compulsive hair pulling is more common than once believed and is observed in between 1% and 5% of college students, with females reporting the problem more than males (Scott et al., 2003). There may be some genetic influence on trichotillomania, with one study finding a unique genetic mutation in a small number of people (Zuchner et al., 2006). Stress also seems to be involved, and there is an increased overlap with posttraumatic stress disorder (Chamberlain, Menzies, Sahakian, & Fineberg,

2007). There is considerable controversy over just how this problem should be classified, and there is a proposal to reclassify it from “impulse control disorders not elsewhere classified” to “anxiety and obsessive-compulsive spectrum disorders” in *DSM-5* (Nock et al., 2011). Research using serotonin-specific reuptake inhibitors holds some promise for treatment, as do cognitive-behavioral interventions, although rigorous research trials have yet to be conducted (Chamberlain et al., 2007).

In addition to these five impulse-control disorders, other impulsive behaviors may occasionally rise to the level of these difficulties. Some individuals show the same irresistible urges to engage in compulsive buying or shopping (oniomania), self-mutilation, skin picking (psychogenic excoriation), severe nail biting (onychophagia), and excessive computer use (“Internet addiction”) (McElroy & Arnold, 2001). There is a limited but growing literature that will help us understand and ultimately treat these impulse-control problems.

Concept Check 10.5

Match the following disorders with their corresponding symptoms: (a) pathological gambling, (b) trichotillomania, (c) intermittent explosive disorder, (d) kleptomania, and (e) pyromania.

1. This rarely diagnosed disorder is characterized by episodes of aggressive impulses and can sometimes be treated with cognitive-behavioral interventions, drug treatments, or both. _____
2. This disorder begins with the person feeling a sense of tension that is released and followed with pleasure after they have committed a robbery. _____
3. This disorder affects somewhere between 3% and 5% of the adult American population and is characterized by the need to gamble. _____
4. This disorder refers to compulsive hair pulling and is more common in females than males. _____
5. Individuals with this disorder are preoccupied with fires and the equipment involved in setting and putting out fires. _____

kleptomania A recurrent failure to resist urges to steal things not needed for personal use or their monetary value.

pyromania An impulse-control disorder that involves having an irresistible urge to set fires.

pathological gambling A persistent and recurrent maladaptive gambling behavior.

trichotillomania People’s urge to pull out their own hair from anywhere on the body, including the scalp, eyebrows, and arm.



Research on a spectrum of disorders that covers the substance-related disorders or the impulse-control disorders is in its infancy. One of the difficulties in researching these disorders is their complexity. The problems that fall under disorders of substance use or impulse control are multifaceted and overlap a great deal with other disorders (comorbidity). For example, people with disorders as wide ranging as antisocial personality disorder (see Chapter 11) (Copeland, Shanahan, Costello, & Angold, 2009), anxiety disorders (see Chapter 4) (Hofmann, Richey, Kashdan, & McKnight, 2009), schizophrenia (see Chapter 12) (Horsfall, Cleary, Hunt, & Walter, 2009), bipolar disorder (see Chapter 6) (Joshi & Wilens, 2009), and depression (see Chapter 6) (Rao, Hammen, & Poland, 2009) all have an increased risk of also meeting criteria for a substance-related disorder. At the same time, there are other mental health concerns that resemble the pattern of use, dependence, and withdrawal of the substance-related disorders but do not

involve the use of mood-altering substances. For example, as we have seen, discussion is under way to include pathological gambling as part of a new category of disorders, “addiction and related disorders,” in *DSM-5*—which would then expand the “addictions” beyond just mood-altering substances (Moeller, 2009). Other problems that cause real dysfunction among some people, including “Internet addiction” (Block, 2008) and even “tanning addiction” (Poorsattar & Hornung, 2010), are being taken seriously as similar types of problems.

One contender for a spectrum of disorders that is currently being researched is referred to as the *externalizing spectrum* (Krueger, Markon, Patrick, & Lacono, 2005; Sher et al., 2011). This categorization includes the substance-related disorders along with antisocial behavior (a personality disorder characterized by the violation of social norms with a disregard for the rights and feelings of others; see Chapter 11) and personality traits such as aggression and impulsivity, all of which often oc-

cur together (Krueger et al., 2005). If we return to the case of Danny, we can see that he displayed many if not all of the characteristics of this spectrum of disorders. Recall that in addition to his substance abuse problems he would steal from his family and his employers, he lied frequently to everyone, and yet he never expressed any true remorse for how his behavior affected others—all characteristics of antisocial personality disorder. In fact, even awaiting trial in jail for his DWI-related traffic fatality, he was talking to as many people as he could to try to blame the medication he was on at the time for his difficulty and never admitted any guilt or expressed any concern for the family of the woman he killed. This collection of difficulties, which have at their core a variety of characteristics including novelty seeking and sensation seeking, is now being explored in a variety of research paradigms (including genetic research) as a possible unifying spectrum that may lead to a deeper understanding of these troubling problems (e.g., Dick et al., 2008).

Summary

Perspectives on Substance-Related Disorders

What are substance-related disorders?

- › In *DSM-IV-TR*, substance-related disorders are divided into depressants (alcohol, barbiturates, and benzodiazepines), stimulants (amphetamine, cocaine, nicotine, and caffeine), opiates (heroin, codeine, and morphine), and hallucinogens (marijuana and LSD).
- › Specific diagnoses are further categorized as substance dependence, substance abuse, substance intoxication, and substance withdrawal.
- › Nonmedical drug use in the United States has declined in recent times, although it continues to cost billions of dollars and seriously impairs the lives of millions of people each year.

Depressants, Stimulants, Opioids, and Hallucinogens

What are the physiological and psychological effects of depressants?

- › Depressants are a group of drugs that decrease central nervous system activity. The primary effect is to reduce our levels of physiological arousal and help us relax.

Included in this group are alcohol and sedative, hypnotic, and anxiolytic drugs, such as those prescribed for insomnia.

What are the physiological and psychological effects of stimulants?

- › Stimulants, the most commonly consumed psychoactive drugs, include caffeine (in coffee, chocolate, and many soft drinks), nicotine (in tobacco products such as cigarettes), amphetamines, and cocaine. In contrast to the depressant drugs, stimulants make us more alert and energetic.

What are the psychological and physiological effects of opiates?

- › Opiates include opium, morphine, codeine, and heroin; they have a narcotic effect—relieving pain and inducing sleep. The broader term *opioids* is used to refer to the family of substances that includes these opiates and synthetic variations created by chemists (e.g., methadone) and the similarly acting substances that occur naturally in our brains (enkephalins, beta-endorphins, and dynorphins).

How do opioids differ from hallucinogens?

- › Hallucinogens essentially change the way the user perceives the world. Sight, sound, feelings, and even smell are distorted, sometimes in dramatic ways, in a person under the influence of drugs such as marijuana and LSD.

Causes and Treatment of Substance-Related Disorders

What psychological and physiological processes lead to substance dependence?

- › Most psychotropic drugs seem to produce positive effects by acting directly or indirectly on the dopaminergic mesolimbic system (the pleasure pathway). In addition, psychosocial factors such as expectations, stress, and cultural practices interact with the biological factors to influence drug use.

What psychological and medical treatments are available for substance-related disorders?

- › Substance dependence is treated successfully only in a minority of those affected, and the best results reflect the motivation of the drug user and a combination of biological and psychosocial treatments.
- › Programs aimed at preventing drug use may have the greatest chance of significantly affecting the drug problem.

Impulse-Control Disorders

What conditions are listed in *DSM-IV-TR* as impulse-control disorders?

- › In *DSM-IV-TR*, impulse-control disorders include five separate disorders: intermittent explosive disorder, kleptomania, pyromania, pathological gambling, and trichotillomania.

Key Terms

substance-related disorders, 371
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kleptomania, 404
pyromania, 404
pathological gambling, 404
trichotillomania, 405

Answers to Concept Checks

10.1

Part A

1. c; 2. b; 3. d; 4. a

Part B

5. c; 6. d; 7. b; 8. A

10.2

1. False (the use of crack by pregnant mothers adversely affects only some babies); 2. True; 3. True; 4. False (marijuana produces the most variable reactions in people); 5. False

(amphetamines are produced in the lab); 6. False (stimulants occur naturally)

10.3

Part A

1. f; 2. c; 3. d; 4. a; 5. e; 6. b

Part B

7. T; 8. T; 9. F (all have an effect); 10. F (they would still act uninhibited); 11. T

10.4

1. f; 2. c; 3. d; 4. i; 5. j; 6. g; 7. b; 8. e; 9. h; 10. a

10.5

1. c; 2. d; 3. a; 4. b; 5. e

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- › *Tim, an Example of Substance Use Disorder*: Tim describes the key criteria and shows how the disorder has had an impact on his life.
- › *Nicotine Dependence*: Learn how nicotine increases the power of cues associated with smoking and how this research might help in the design of more effective programs to help people quit tobacco.

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Video Concept Reviews

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- › Substance Intoxication, Abuse and Dependence
- › Tolerance and Withdrawal
- › Alcohol Use Disorders
- › Sedative, Hypnotic, and Anxiolytic Substances
- › Stimulants
- › Amphetamine Use Disorders
- › Cocaine Use Disorders
- › Nicotine Use Disorders
- › Caffeine Use Disorders
- › Opioid Use Disorders
- › Hallucinogen Use Disorders
- › Marijuana
- › LSD and Other Hallucinogens
- › Inhalants
- › Anabolic Steroids
- › Designer Drugs
- › Drug Use: Psychological Perspective
- › Concept Check: Impulse Control Disorders Versus Substance Use

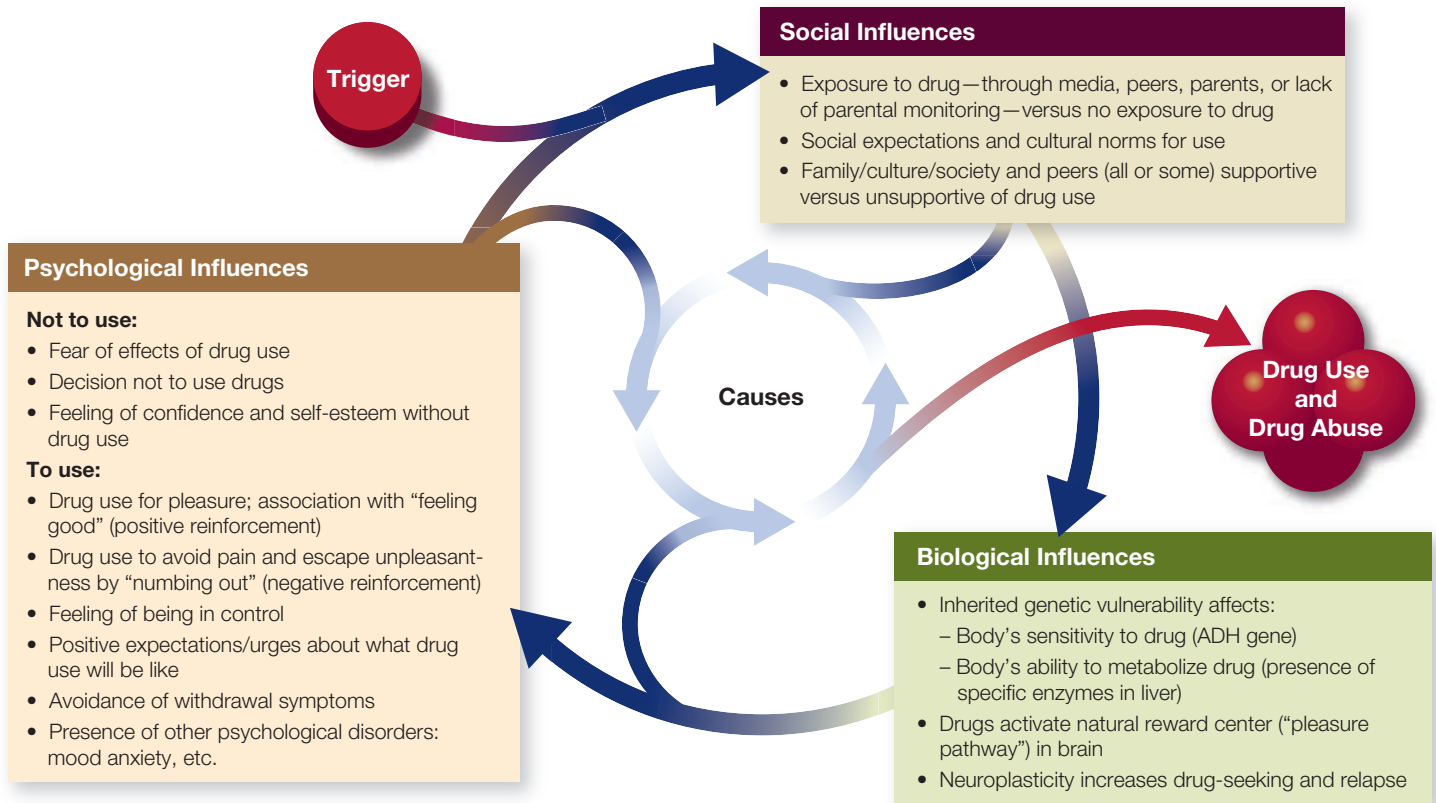
Chapter Quiz

1. The definition of substance abuse according to the *DSM-IV-TR* is based on:
 - a. how much of the substance is consumed per day
 - b. how much of the substance is consumed per week
 - c. how significantly the substance interferes with the user’s life
 - d. the type of substance used
2. _____ is the need for greater amounts of a drug to experience the same effect, whereas _____ is the negative physical response that occurs when a drug is not taken.
 - a. Tolerance; withdrawal
 - b. Delirium; withdrawal
 - c. Dependence; tolerance
 - d. Accommodation; abuse
3. Which of the following statements most accurately describes the relationship between gender and alcohol consumption?
 - a. Women are more likely to use alcohol, but men are more likely to be heavy drinkers.
 - b. Men are more likely to use alcohol, but women are more likely to be heavy drinkers.
 - c. Women are more likely to use alcohol and be heavy drinkers.
 - d. Men are more likely to use alcohol and be heavy drinkers.

4. Dr. Myers prescribes medication to help control a patient's seizures. The patient reports that the medication also makes her feel calm and helps her sleep. Dr. Myers most likely prescribed a(n):
 - a. hallucinogen
 - b. opiate
 - c. benzodiazepine
 - d. amphetamine
5. The primary neurotransmitter affected by cocaine is _____, whereas the primary neurotransmitter affected by opiates is _____.
 - a. GABA; norepinephrine
 - b. acetylcholine; GABA
 - c. norepinephrine; dopamine
 - d. dopamine; GABA
6. For marijuana users, "reverse tolerance" occurs when:
 - a. chronic use renders the user unable to feel high
 - b. a first-time user does not feel high
 - c. more pleasure from the drug is reported after repeated use
 - d. a chronic user experiences withdrawal symptoms
7. Gino is a recovering alcoholic. To help with his treatment, Gino's physician prescribed a drug that causes Gino to experience shortness of breath and severe vomiting if he drinks. What drug has the physician prescribed?
 - a. Antabuse
 - b. MDMA
 - c. amyl nitrate
 - d. PCP
8. One psychological component of addiction may involve taking a drug to avoid negative feelings associated with coming down from a high. What theory describes this use of substances to avoid worsening lows?
 - a. tolerance theory
 - b. substance cycle theory
 - c. opponent-process theory
 - d. polydependence theory
9. Research shows that the way individuals think about a drug influences the way they act when using the drug. This phenomenon is known as the:
 - a. tolerance paradigm
 - b. expectancy effect
 - c. dependency model
 - d. opponent-process theory
10. Carlos's psychiatrist treats him for cocaine abuse by delivering a shock when Carlos attempts to use cocaine, a treatment known as _____. In contrast, Lisa's therapist has her imagine having painful seizures at the same time that Lisa is thinking about using cocaine, a treatment known as _____.
 - a. aversion therapy; covert sensitization
 - b. contingency management; relapse prevention
 - c. narcotics anonymous; controlled use
 - d. agonist substitution; aversive treatment
 (See Appendix A for answers.)

Exploring Substance-Related Disorders

- › Many kinds of problems can develop when people use and abuse substances that alter the way they think, feel, and behave.
- › Once seen as due to personal weakness, drug abuse and dependence are now thought influenced by both biological and psychosocial factors.



TREATMENT: BEST TO USE MULTIPLE APPROACHES

Psychosocial Treatments

- Aversion therapy—to create negative associations with drug use (shocks with drinking, imagining nausea with cocaine use)
- Contingency management to change behaviors by rewarding chosen behaviors
- Alcoholics Anonymous and its variations
- Inpatient hospital treatment (can be expensive)
- Controlled use
- Community reinforcement
- Relapse prevention

Biological Treatments

- Agonist substitution
 - Replacing one drug with a similar one (methadone for heroin, nicotine gum and patches for cigarettes)
- Antagonist substitution
 - Blocking one drug’s effect with another drug (naltrexone for opiates and alcohol)
- Aversive treatments
 - Making taking drug very unpleasant (using Antabuse, which causes nausea and vomiting when mixed with alcohol, to treat alcoholism)
- Drugs to help recovering person deal with withdrawal symptoms (clonidine for opiate withdrawal, sedatives for alcohol, etc.)

TYPES OF DRUGS

	Examples	Effects
Depressants	Alcohol, barbiturates (sedatives: Amytal, Seconal, Nembutal), benzodiazepines (anti-anxiety: Valium, Xanax, Halcion)	<ul style="list-style-type: none"> • Decreased central nervous system activity • Reduced levels of body arousal • Relaxation
Stimulants	Amphetamines, cocaine, nicotine, caffeine	<ul style="list-style-type: none"> • Increased physical arousal • User feels more alert and energetic
Opiates	Heroin, morphine, codeine	<ul style="list-style-type: none"> • Narcotic—reduce pain and induce sleep and euphoria by mirroring opiates in the brain (endorphins, etc.)
Hallucinogens	Marijuana, LSD, Ecstasy	<ul style="list-style-type: none"> • Altered mental and emotional perception • Distortion (sometimes dramatic) of sensory perceptions

Exploring Impulse-Control Disorders

Characterized by inability to resist acting on a drive or temptation. Sufferers often perceived by society as having a problem simply due to a lack of “will.”

TYPES OF IMPULSE-CONTROL DISORDERS

Disorder		Characteristics	Treatment
Intermittent Explosive	 <small>Tom Morrison/Stone/Getty Images</small>	<ul style="list-style-type: none"> Acting on aggressive impulses that result in assaults or destruction of property Current research is focused on how neurotransmitters and testosterone levels interact with psychosocial influences (stress, parenting styles) 	Cognitive-behavioral interventions (helping person identify and avoid triggers for aggressive outbursts) and approaches modeled after drug treatments appear most effective
Kleptomania	 <small>Mauro Speziale/Photonica/Getty Images</small>	<ul style="list-style-type: none"> Recurring failure to resist urges to steal unneeded items Feeling tense just before stealing, followed by feelings of pleasure or relief when committing the theft High comorbidity with mood disorders and, to a lesser degree, with substance abuse/dependence 	Behavioral interventions or antidepressant medication
Pathological Gambling	 <small>Tom and Steve/Flickr/Getty Images</small>	<ul style="list-style-type: none"> Preoccupation with gambling/with need to gamble increasing amounts of money to feel the same excitement “Withdrawal symptoms” of restlessness and irritability when attempting to stop May have a biological component involving brain activity (decreased activity in brain region controlling impulse regulation, abnormalities in dopamine and serotonin systems) 	Gamblers Anonymous; similar to substance-dependence treatment
Trichotillomania	 <small>©Wedgworth/Custom Medical Stock Photo (CMSP)</small>	<ul style="list-style-type: none"> Urge to pull out one's own hair from anywhere on the body Sufferers go to great lengths to conceal behavior Relatively common (seen 1%–5% of college students) 	SSRIs may help; cognitive-behavior interventions hold promise
Pyromania	 <small>Joel Sartore/National Geographic/Getty Images</small>	<ul style="list-style-type: none"> Irresistible urge to set fires Feeling aroused prior to setting fire then a sense of gratification or relief while the fire burns Rare; diagnosed in less than 4% of arsonists 	Cognitive-behavioral interventions (helping person identify signals triggering urges, and teaching coping strategies to resist setting fires)

CHAPTER 11

Personality Disorders

Chapter Outline

An Overview of Personality Disorders

- Aspects of Personality Disorders
- Categorical and Dimensional Models
- Personality Disorder Clusters
- Statistics and Development
- Gender Differences
- Comorbidity
- Personality Disorders under Study

Cluster A Personality Disorders

- Paranoid Personality Disorder
- Schizoid Personality Disorder
- Schizotypal Personality Disorder

Cluster B Personality Disorders

- Antisocial Personality Disorder
- Borderline Personality Disorder
- Histrionic Personality Disorder
- Narcissistic Personality Disorder

Cluster C Personality Disorders

- Avoidant Personality Disorder
- Dependent Personality Disorder
- Obsessive-Compulsive Personality Disorder



Abnormal Psychology Live Videos

Antisocial Personality Disorder: George Web Link



Student Learning Outcomes*

Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology:

› Biological bases of behavior and mental processes, including physiology, sensation, perception, comparative, motivation, and emotion (APA SLO 1.2.a (3)) (see textbook pages 429–431)

Use the concepts, language, and major theories of the discipline to account for psychological phenomena.

› Describe behavior and mental processes empirically, including operational definitions (APA SLO 1.3.a) (see textbook pages 413–443)

Identify appropriate applications of psychology in solving problems, such as:

› Origin and treatment of abnormal behavior (APA SLO 4.2.b) (see textbook pages 420–424, 428–432, 434–443)

*Portions of this chapter cover learning outcomes suggested by the American Psychological Association (2007) in their guidelines for the undergraduate psychology major. Chapter coverage of these outcomes is identified by APA Goal and APA Suggested Learning Outcome (SLO).

An Overview of Personality Disorders

› What are the essential features of personality disorders, and why are they listed on Axis II in the text revision of the fourth edition of the *Diagnostic and Statistical Manual (DSM-IV-TR)*?

We all think we know what a personality is. It's all the characteristic ways a person behaves and thinks: "Michael tends to be shy;" "Mindy likes to be dramatic;" "Juan is always suspicious of others;" "Annette is outgoing;" "Bruce seems to be sensitive and gets upset easily over minor things;" "Sean has the personality of an eggplant!" We tend to type people as behaving in one way in many situations. For example, like Michael, many of us are shy with people we don't know, but we won't be shy around our friends. A truly shy person is shy even among people he has known for some time. The shyness is part of the way the person behaves in most situations. We also have all probably behaved in all the other ways noted here (dramatic, suspicious, outgoing, easily upset). However, we usually consider a way of behaving part of a person's personality only if it occurs in many times and places. In this chapter, we look at characteristic ways of behaving in relation to personality disorders. First we examine how we conceptualize personality disorders and the issues related to them; then we describe the disorders themselves.

Aspects of Personality Disorders

What if a person's characteristic ways of thinking and behaving cause significant distress to themselves or others? What if the person can't change this way of relating to the world and is unhappy? We might consider this person to have a **personality disorder**. The *DSM-IV-TR* definition notes that these personality characteristics are "inflexible and maladaptive and cause significant functional impairment or subjective distress." Unlike many of the disorders we have already discussed, personality disorders are chronic; they do not come and go but originate in childhood and continue throughout adulthood. Because they affect personality, these chronic problems pervade every

aspect of a person's life. For example, if a woman is overly suspicious (a sign of a possible paranoid personality disorder), this trait will affect almost everything she does, including her employment (she may have to change jobs often if she believes coworkers conspire against her), her relationships (she may not be able to sustain a lasting relationship if she can't trust anyone), and even where she lives (she may have to move often if she suspects her landlord is out to get her).

However, individuals with personality disorders may not feel any subjective distress; indeed, it may be others who acutely feel distress because of the actions of the person with the disorder. This is particularly common with antisocial personality disorder because the individual may show a blatant disregard for the rights of others yet exhibit no remorse (Patrick, 2006). In certain cases, someone other than the person with the personality disorder must decide whether the disorder is causing significant functional impairment because the affected person often cannot make such a judgment.

DSM-IV-TR lists 10 specific personality disorders and several others that are being studied for future consideration; we review them all. Although the prospects for treatment success for people who have personality disorders may be more optimistic than previously thought (see, for example, Svartberg, Stiles, & Seltzer, 2004), unfortunately, as you will see later, many people who have personality disorders in addition to other psychological problems (for

personality disorder An enduring maladaptive pattern for relating to the environment and self, exhibited in a range of contexts that cause significant functional impairment or subjective distress.

example, major depression) tend to do poorly in treatment. Most disorders we discuss in this book are in Axis I of *DSM-IV-TR*, which includes the standard traditional disorders. The personality disorders are included in a separate axis, Axis II, because as a group they are distinct. The characteristic traits are more ingrained and inflexible in people who have personality disorders, and the disorders themselves are less likely to be successfully modified.

Because personality disorders are on a separate axis, clinicians are required to consider symptom by symptom whether the person has a personality disorder. In the axis system, a patient can receive a diagnosis on only Axis I, only Axis II, or on both axes. A diagnosis on both Axis I and Axis II indicates that a person has both a current disorder (Axis I) and a more chronic problem (for example, personality disorder). As you will see, it is not unusual for one person to be diagnosed on both axes.

Categorical and Dimensional Models

Most of us are sometimes suspicious of others and a little paranoid, overly dramatic, too self-involved, or reclusive. Fortunately, these characteristics have not lasted long or been overly intense, and they haven't significantly impaired how we live and work. People with personality disorders, however, display problem characteristics over extended periods and in many situations, which can cause great emotional pain for themselves, others, or both (Ferguson, 2010b). Their difficulty, then, can be seen as one of *degree* rather than *kind*; in other words, the problems of people with personality disorders may just be extreme versions of the problems many of us experience temporarily, such as being shy or suspicious (South, Oltmanns, & Krueger, 2011).

The distinction between problems of degree and problems of kind is usually described in terms of *dimensions* instead of *categories*. The issue that continues to be debated in the field is whether personality disorders are extreme versions of otherwise normal personality variations (dimensions) or ways of relating that are different from psychologically healthy behavior (categories) (Widiger & Trull, 2007). You can see the difference between dimensions and categories in everyday life. For example, we tend to look at gender categorically. Our society views us as being in one category—"female"—or the other—"male." Yet we could also look at gender in terms of dimensions. For example, we know that "maleness" and "femaleness" are partly determined by hormones. We could identify people along testosterone, estrogen, or both dimensions and rate them on a continuum of maleness and femaleness rather than in the absolute categories of male or female. Many researchers and clinicians in this field see personality disorders as extremes on one or more personality dimensions. Yet because of the way people are diagnosed with the *DSM*, the personality disorders—like most other disorders—end up being viewed in categories. You have two choices—either you do ("yes") or you do not ("no") have a disorder. For example, either you have antisocial personality disorder

or you don't. The *DSM* doesn't rate how dependent you are; if you meet the criteria, you are labeled as having dependent personality disorder. There is no "somewhat" when it comes to personality disorders.

There are advantages to using categorical models of behavior, the most important being their convenience. With simplification, however, comes problems. One is that the mere act of using categories leads clinicians to reify them—that is, to view disorders as real "things," comparable to the realness of an infection or a broken arm. Some argue that personality disorders are not things that exist but points at which society decides a particular way of relating to the world has become a problem. There is the important unresolved issue again: Are personality disorders just an extreme variant of normal personality, or are they distinctly different disorders?

Some have proposed that the *DSM-IV-TR* personality disorders section be replaced or at least supplemented by a dimensional model (South et al., 2011; Widiger & Trull, 2007) in which individuals would not only be given categorical diagnoses but also would be rated on a series of personality dimensions. Although no general consensus exists about what the basic personality dimensions might be, there are several contenders (South et al., 2011). One of the more widely accepted is called the *five-factor model*, or the "Big Five," and is taken from work on normal personality (McCrae & Costa, 2008). In this model, people can be rated on a series of personality dimensions and the combination of five components describes why people are so different. The five factors or dimensions are *extroversion* (talkative, assertive, and active versus silent, passive, and reserved); *agreeableness* (kind, trusting, and warm versus hostile, selfish, and mistrustful); *conscientiousness* (organized, thorough, and reliable versus careless, negligent, and unreliable); *neuroticism* (even-tempered versus nervous, moody, and temperamental); and *openness to experience* (imaginative, curious, and creative versus shallow and imperceptive) (McCrae & Costa, 2008). On each dimension, people are rated high, low, or somewhere between.

Cross-cultural research establishes the universal nature of the five dimensions—although there are individual differences across cultures (Hofstede & McCrae, 2004). For example, one study found in general that Austrian, Swiss, and Dutch samples scored the highest on openness to experience, whereas the Danes, Malaysians, and Telugu Indians (India) scored the lowest on this factor (McCrae, 2002). A number of researchers are trying to determine whether people with personality disorders can also be rated in a meaningful way along these dimensions and whether the system will help us better understand these disorders (Skodol et al., 2005).

Personality Disorder Clusters

DSM-IV-TR divides the personality disorders into three groups, or clusters (see Table 11.1) (American Psychiatric Association, 2000). The cluster division is based on resemblance. Cluster A is called the odd or eccentric cluster; it

Table 11.1 Personality Disorders

Personality Disorder	Description
Cluster A—Odd or Eccentric Disorders	
Paranoid personality disorder	The strong tendency to mistrust the motives of others, leading to a high degree of suspiciousness.
Schizoid personality disorder	Characterized by social detachment and a lack of emotional expression not due to social anxiety.
Schizotypal personality disorder	Social and interpersonal difficulties that are due to social anxiety but also involves distorted views of the world and unusual behavior.
Cluster B—Dramatic, Emotional, or Erratic Disorders	
Antisocial personality disorder	Characterized by behavior that shows limited regard for other people.
Borderline personality disorder	Characterized by a high level of unstable relationships and emotional outbursts, poor self-image, and a difficulty controlling impulses.
Histrionic personality disorder	The tendency to display flamboyant emotions with the goal of seeking attention.
Narcissistic personality disorder	Pervasive belief that the individual is better than everyone else, which leads to attention-seeking and a lack of concern for others.
Cluster C—Anxious or Fearful Disorders	
Avoidant personality disorder	Characterized by strong feelings of being inadequate, which can result in inhibition in social situations and sensitivity to any negative feedback.
Dependent personality disorder	A strong need to be cared for by others, including patterns of submissiveness and fear of separation.
Obsessive-compulsive personality disorder	Characterized by a desire for being perfect both mentally and interpersonally, a need for orderliness, and reduced flexibility and openness.

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includes paranoid, schizoid, and schizotypal personality disorders. Cluster B is the dramatic, emotional, or erratic cluster; it consists of antisocial, borderline, histrionic, and narcissistic personality disorders. Cluster C is the anxious or fearful cluster; it includes avoidant, dependent, and obsessive-compulsive personality disorders. We follow this order in our review.

Statistics and Development

Personality disorders are found in 0.5% to 2.5% of the general population, 10% to 30% of all individuals served in inpatient settings, and 2% to 10% of those individuals in outpatient settings (American Psychiatric Association, 2000). However, an important population survey suggests that as many as 1 in 10 adults in the United States may have a diagnosable personality disorder (Lenzenweger, Lane, Loranger, & Kessler, 2007b), which makes them relatively common (Table 11.2). Numbers vary somewhat across countries, but worldwide about 6% of adults may have at least one personality disorder (Huang et al., 2009). Differences in prevalence estimates may be the result of

surveying people in clinical settings versus surveying the general population—even those not seeking assistance. Similarly, gender differences in the disorders—for example, more women diagnosed with borderline personality disorder and more men identified with antisocial personality disorder—are not apparent when surveying the general population.

Personality disorders are thought to originate in childhood and continue into the adult years (Cloninger & Svakic, 2009); they are also thought to be so ingrained that an onset is difficult to pinpoint. Maladaptive personality characteristics develop over time into the maladaptive behavior patterns that create distress for the affected person and draw the attention of others. Our relative lack of information about such important features of personality disorders as their developmental course is a repeating theme. The gaps in our knowledge of the course of about half these disorders are visible in Table 11.2. One reason for this dearth of research is that many individuals do not seek treatment in the early developmental phases of their disorder but only after years of distress. This makes it difficult to study people with personality disorders from the begin-

Table 11.2 Statistics and Development of Personality Disorders

Disorder	Prevalence*	Gender Differences†	Course
Paranoid personality disorder	In the clinical population: 4.2% In the general population: 2.3%–2.4%	In the clinical population: More common in males In the general population: No difference	Insufficient information
Schizoid personality disorder	In the clinical population: 1.4% In the general population: 1.7%–4.9%	In the clinical population: More common in males In the general population: No difference	Insufficient information
Schizotypal personality disorder	In the clinical population: 0.6% In the general population: 0.6%–3.3%	In the clinical population: More common in males In the general population: No difference	Chronic; some go on to develop schizophrenia
Antisocial personality disorder	In the clinical population: 3.6% In the general population: 0.7%–1%	In the clinical population: More common in males In the general population: No difference	Dissipates after age 40 (Hare, McPherson, & Forth, 1988)
Borderline personality disorder	In the clinical population: 9.3% In the general population: 0.7%–1.6%	In the clinical population: More common in females In the general population: No difference	Symptoms gradually improve if individuals survive into their 30s (Zanarini et al., 2006); approximately 6% die by suicide (Perry, 1993)
Histrionic personality disorder	In the clinical population: 1.0% In the general population: .1%–2.0%	In the clinical population: No difference In the general population: No difference	Chronic
Narcissistic personality disorder	In the clinical population: 2.3% In the general population: .1%	In the clinical population: More common in males In the general population: No difference	May improve over time (Cooper & Ronningstam, 1992; Gunderson, Ronningstam, & Smith, 1991)
Avoidant personality disorder	In the clinical population: 14.7% In the general population: 5.0%–5.2%	In the clinical population: No difference In the general population: No difference	Insufficient information
Dependent personality disorder	In the clinical population: 1.4% In the general population: 0.6%–1.5%	In the clinical population: No difference In the general population: No difference	Insufficient information
Obsessive-compulsive personality disorder	In the clinical population: 8.7% In the general population: 2.0%–2.4%	In the clinical population: More common in males In the general population: No difference	Insufficient information

*Clinical population data reported in Zimmerman, Rothschild, and Chelminski (2005). General population data reported from two community samples: Lenzenweger et al. (2007b) and Torgersen, Kringlen, and Cramer (2001).

†Clinical population data reported in *DSM-IV-TR* (American Psychiatric Association, 2000) and general population data from Lenzenweger et al. (2007b).

ning, although a few research studies have helped us understand the development of several disorders.

People with borderline personality disorder are characterized by their volatile and unstable relationships; they tend to have persistent problems in early adulthood, with frequent hospitalizations, unstable personal relationships, severe depression, and suicidal gestures. Almost 10% attempt suicide, and approximately 6% succeed in their at-

tempts (Skodol & Gunderson, 2008). On the bright side, their symptoms gradually improve if they survive into their 30s (Zanarini, Frankenburg, Hennen, Reich, & Silk, 2006), although elderly individuals with borderline personality disorder may have difficulty making plans and may be disruptive in nursing homes (Hunt, 2007). People with antisocial personality disorder display a characteristic disregard for the rights and feelings of others; they tend to continue

their destructive behaviors of lying and manipulation through adulthood. Fortunately, some tend to “burn out” after the age of about 40 and engage in fewer criminal activities (Douglas, Vincent, & Edens, 2006). As a group, however, the problems of people with personality disorders continue, as shown when researchers follow their progress over the years (Ferguson, 2010b).

Gender Differences

Borderline personality disorder is diagnosed more often in females (although as you will see next, this may be the result of diagnostic bias), who make up about 75% of the identified cases (Cloninger & Svakic, 2009) (see Table 11.2). Historically, histrionic and dependent personality disorders were identified by clinicians more often in women (Dulit, Marin, & Frances, 1993; Stone, 1993), but according to more recent studies of their prevalence in the general population, equal numbers of males and females may have histrionic and dependent personality disorders (see Table 11.2). If this observation holds up in future studies, why have these disorders been predominantly diagnosed among females in general clinical practice and in other studies?

Do the disparities indicate differences between men and women in certain basic experiences that are genetic, socio-cultural, or both, or do they represent biases on the part of the clinicians who make the diagnoses? Take, for example, a classic study by Maureen Ford and Thomas Widiger (1989), who sent fictitious case histories to clinical psychologists for diagnosis. One case described a person with *antisocial personality disorder*, which is characterized by irresponsible and reckless behavior and usually diagnosed in males; the other case described a person with *histrionic personality disorder*, which is characterized by excessive emotionality and attention seeking and more often diagnosed in females. The subject was identified as male in some versions of each case and as female in others, although everything else was identical. As the graph in ■ Figure 11.1 shows, when the antisocial personality disorder case was labeled male, most psychologists gave the correct diagnosis. However, when the same case of antisocial personality disorder was labeled female, most psychologists diagnosed it as histrionic personality disorder rather than antisocial personality disorder. In the case of histrionic personality disorder, being labeled a woman increased the likelihood of that diagnosis. Ford and Widiger (1989) concluded that the psychologists incorrectly diagnosed more women as having histrionic personality disorder.

This gender difference in diagnosis has also been criticized by other authors (see, for example, Kaplan, 1983) on the grounds that histrionic personality disorder, like several of the other personality disorders, is biased against



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▲ Personality disorders tend to begin in childhood.

females. As Kaplan (1983) points out, many of the features of histrionic personality disorder, such as overdramatization, vanity, seductiveness, and overconcern with physical appearance, are characteristic of the Western “stereotypical female.” This disorder may simply be the embodiment of extremely “feminine” traits (Chodoff, 1982); branding such an individual mentally ill, according to Kaplan, reflects society’s inherent bias against females.

The issue of gender bias in diagnosing personality disorder remains highly controversial. Remember, however, that just because certain disorders are observed more in men or women doesn’t necessarily indicate bias (Lilienfeld, Van-Valkenburg, Larntz, & Akiskal, 1986). When it is present, bias can occur at different stages of the diagnostic process. Widiger and Spitzer (1991) point out that the criteria for the disorder may themselves be biased (*criterion gender bias*) or the assessment measures and the way they are used may be biased (*assessment gender bias*). In general, the criteria themselves do not appear to have strong gender bias (Jane, Oltmanns, South, & Turkheimer, 2007), although there may be some tendency for clinicians to use their own bias when using the criteria and therefore diagnose males and females differently (Morey, Alexander, & Boggs, 2005)

Comorbidity

Looking at Table 11.2 and adding up the prevalence rates across the personality disorders, you might conclude that up to 25% of all people are affected. In fact, the percentage of people in the population with a personality disorder is likely closer to 10% (Huang et al., 2009; Lenzenweger et al., 2007b). What accounts for this discrepancy? A major concern with the personality disorders is that people tend to be diagnosed with more than one. The term *comorbidity* historically describes the condition in which a person has



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▲ Gender bias may affect the diagnosis of clinicians who associate certain behavioral characteristics with one sex or the other.

multiple diseases (Caron & Rutter, 1991). A fair amount of disagreement is ongoing about whether the term should be used with psychological disorders because of the frequent overlap of different disorders (Skodol, 2005). In just one example, Zimmerman, Rothschild, and Chelminski (2005) conducted a study of 859 psychiatric outpatients and assessed how many had one or more personality disorders. Table 11.3 shows the odds that a person with a particular personality disorder would also meet the criteria for other disorders. For example, a person identified with borderline personality disorder is also likely to receive diagnoses of paranoid, schizotypal, antisocial, narcissistic, avoidant, and dependent personality disorders.

Do people really tend to have more than one personality disorder? Are the ways we define these disorders inaccurate, and do we need to improve our definitions so that

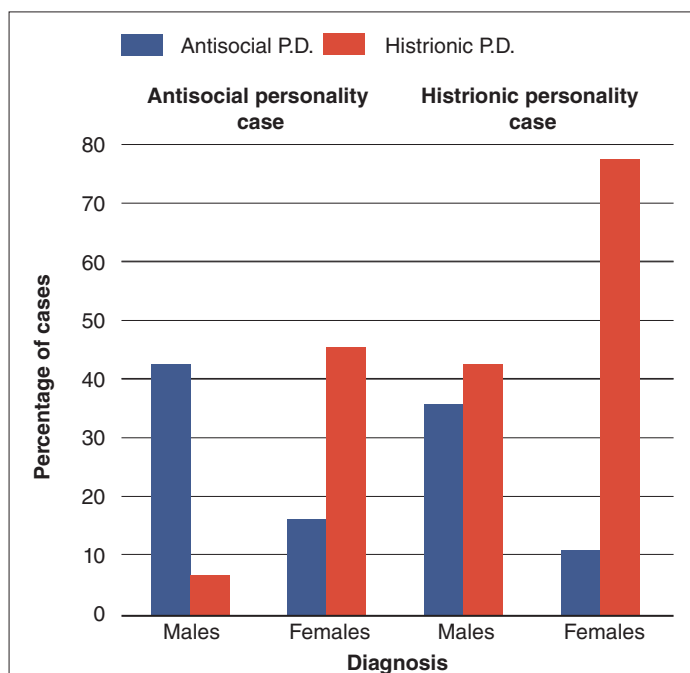
they do not overlap? Or did we divide the disorders in the wrong way, and do we need to rethink the categories? Such questions about comorbidity are just a few of the important issues faced by researchers who study personality disorders.

Personality Disorders under Study

Other personality disorders have been studied for inclusion in the *DSM*—for example, sadistic personality disorder, which includes people who receive pleasure by inflicting pain on others (Morey, Hopwood, & Klein, 2007), and self-defeating personality disorder, which includes people who are overly passive and accept the pain and suffering imposed by others (Skodol, 2005). However, few studies support the existence of these disorders, so they were not included in the *DSM-IV-TR* (Cloninger & Svakic, 2009).

Two new personality disorders are under study for inclusion in *DSM-5*. *Depressive personality disorder* includes self-criticism, dejection, a judgmental stance toward others, and a tendency to feel guilt. Some evidence indicates this may indeed be a personality disorder distinct from dysthymic disorder (the mood disorder described in Chapter 6 that involves a persistently depressed mood lasting at least 2 years); research is continuing in this area (Orstavik, Kendler, Czajkowski, Tambs, & Reichborn-Kjennerud, 2007; Vachon, Sellbom, Ryder, Miller, & Bagby, 2009). *Passive-aggressive (negativistic) personality disorder* is characterized by passive aggression in which people adopt a negativistic attitude to resist routine demands and expectations. This category is an expansion of a previous *DSM-III-R* category, *passive-aggressive personality disorder*, and may be a subtype of a narcissistic personality disorder (Hopwood et al., 2009).

We now review the personality disorders currently in *DSM-IV-TR*, 10 in all. Then we look briefly at a few categories being considered for inclusion in *DSM-5*.



■ **FIGURE 11.1** Gender bias in diagnosing personality disorders (P.D.). Data are shown for the percentage of cases clinicians rated as antisocial personality disorder or histrionic personality disorder, depending on whether the case was described as a male or a female. (From Ford, M. R., & Widiger, T. A., 1989. Sex bias in the diagnosis of histrionic and antisocial personality disorders. *Journal of Consulting and Clinical Psychology*, 57, 301–305.)