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CHAPTER 26

The Role of Exercise in Recovering from Psychological Disorders

SUSAN BARTLETT

Susan J. Bartlett, Ph.D., is a clinical psychologist and instructor of medicine at the Johns Hopkins School of Medicine in Baltimore, Md. Dr. Bartlett’s research and clinical interests focus on weight and eating disorders as well as the development of effective strategies healthcare providers can use to motivate lifestyle changes in their patients.
Regular physical activity plays an important role in overall psychological health. For nearly three decades, thousands of American businesses have developed employee fitness centers and programs and incentives to improve work-related behaviors. Decreased absenteeism, increased job satisfaction, employee retention, decreased stress and reduced healthcare costs all have been associated with employee physical activity programs.

Across a wide variety of medical populations, from cardiac patients to new moms, exercise has been shown to improve mood, self-esteem and general well-being. Similarly, exercise often is considered an effective component of comprehensive treatment of several psychological disorders.

This chapter reviews several psychological disorders for which exercise can act as a clinical intervention to facilitate recovery, and also discusses psychological disorders manifested through the compulsive need to exercise. Recommendations are offered on how to adapt physical activity programs to meet the needs of
Psychological Disorders

individuals suffering from selected psychological disorders. Because of the widespread prevalence of conditions such as depression, anxiety and eating disorders, this chapter will focus on activity programs designed specifically for people suffering from such conditions. Descriptions of the selected psychological disorders are drawn from the Diagnostics and Statistical Manual (DSM-IV) of the American Psychiatric Association (1994).

Mood Disorders

Depression

Depression is the most common of mood disorders. It is estimated that 10 percent to 25 percent of women and 5 percent to 12 percent of men suffer from depression at some time during their lives (DSM-IV). Clinical depression is characterized by a period (at least two weeks) of depressed mood or loss of interest in most activities that the person formerly enjoyed (DSM-IV). All areas of an individual’s life are affected, including their performance at work and interaction in social settings and with family. People experiencing clinical depression feel sad, hopeless, discouraged or “down in the dumps.” Often, they report that they “just don’t care about anything anymore.” In some cases, individuals who are clinically depressed report feeling more irritable than sad.

Depression involves changes in neurotransmitter levels and, hence, affects many systems of the body. Several medical conditions also may result in depressed mood or symptoms of anxiety. For example, up to 40 percent of individuals with neurological disorders (e.g., Parkinson’s, Alzheimer’s and Huntington’s disease, stroke and multiple sclerosis) experience a mood disorder. Other medical conditions associated with depression include endocrine disorders (e.g., hyperthyroidism or hypothyroidism), autoimmune disorders (e.g., lupus), infections (e.g., hepatitis, mononucleosis, HIV) and certain cancers. Medications (antihypertensives, cardiac agents, hormone therapy and oral contraceptives, among others) also can induce depression.

Depression is associated with changes in the way an individual functions, thinks and feels about himself. Functional changes include increases or decreases in appetite (with resultant change in weight), sleep disturbance (trouble falling asleep, remaining asleep and/or waking too early), lack of energy, and psychomotor activity (agitation such as pacing, hand-wrinking and difficulty sitting still, or retardation such as slowed speech, thinking and/or body movements). Cognitive changes include trouble concentrating and difficulty making decisions, as well as feeling hopeless about the future. Depressed persons report feeling worthless and guilty, and often have recurrent thoughts of death or suicide. They are frequently tearful, especially when discussing how they feel.

Depression ranges from mild (significant distress and some impairment in functioning) to severe (inability to function at work or with others). Symptoms of depression often develop slowly over a period of weeks to months. When left untreated, most major depression can last six months or more, and some symptoms linger for longer periods. It is likely that the majority of sufferers do not seek help, which is especially worrisome since up to 15 percent of all depressed persons will eventually attempt suicide. Any client whom you suspect may be clinically depressed should be referred to a mental health professional for further evaluation and treatment.

<p>| Table 26.1 |</p>
<table>
<thead>
<tr>
<th>Client Information to Obtain from Medical Professionals</th>
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</thead>
<tbody>
<tr>
<td>1) What are the primary psychological symptoms and how are they expressed?</td>
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<tr>
<td>2) Do you anticipate that the client will have any difficulties with adopting an exercise program?</td>
</tr>
<tr>
<td>3) If motivation to exercise becomes a problem, do you have suggestions on how to address this with this client?</td>
</tr>
<tr>
<td>4) Have you (or anyone else) prescribed any medications that may potentially influence exercise tolerance (i.e., beta blockers for anxiety)?</td>
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</table>
pressed should be referred for evaluation. Clinicians who are qualified to assess and treat depression include psychiatrists and other physicians, psychologists and clinical social workers. A summary of depression characteristics is outlined in Table 26.2.

How Is Depression Treated?

Treatment for depression typically involves psychotherapy, which may be combined with antidepressant medication. Common medications are listed in Table 26.3. Older antidepressants were accompanied by various unwelcome side effects, including dry mouth, constipation and weight gain. In some cases, the medications required significant dietary restrictions. Newer antidepressants, such as Prozac, Zoloft and Wellbutrin are much more specific in their action on brain receptors and, therefore, are associated with fewer side effects. Common side effects of these newer antidepressants may include insomnia and sexual difficulties. In some cases (e.g., venlafaxine), blood pressure (BP) can be elevated through regular use of the medication. Thus, ongoing monitoring of BP by a healthcare provider may be necessary. Severe cases of depression may be alleviated with electroconvulsive therapy (ECT). This therapy may result in temporary or permanent short-term memory loss of events occurring during the period in which the patient receives treatment, but otherwise does not appear to cause adverse long-term effects.

The Role of Exercise in Treating Depression

Exercise has been shown to be effective in treating depression when combined with psychotherapy and medication (Table 26.4). In the short term (i.e., immediately after exercising), exercise improves mood and well-being. Regular exercise participation has also been shown to produce long-term beneficial effects. Improvements in mood and well being have been reported by regular exercisers in both clinical and nonclinical populations and with most types of exercise. In at least one major clinical trial sponsored by the National Institutes of Health, exercise and group counseling were used by clinicians (who are qualified to assess and monitor the disorder) as a primary treatment for mild depression. Additional research studies suggest that moderate-intensity lifestyle activity, such as walking, may be as effective as traditional vigorous aerobic exercise in improving mood.

Adapting Physical Activity Programs

Many clinicians who treat depression recommend their patients begin exercising if they are sedentary, or continue to exercise if they are active. If the client’s heart rate is greater than 100 bpm at rest, the client should be evaluated and cleared for exercise by a primary care provider (PCP). Similarly, clients who report feeling faint during exercise should be referred to their PCP. It is rare that limitations (other than those that preceded the depression) are placed on the type or intensity of physical activity performed by depressed individuals. The gradual increases in intensity and duration of exercise associated with any sound training program are optimal.

Depression may influence one’s ability to exercise in several important ways. Most importantly, depression depletes motivation. A depressed individual has little to no desire to exercise, and regular physical activity is not likely to occur without structure, encouragement and support. Another common barrier depressed individuals face is a feeling of chronic exhaustion— even upon awakening in the morning. Physical activity may be viewed as yet another drain on a client’s already limited mental and physical

<table>
<thead>
<tr>
<th>Table 26.2 Characteristics of a Major Depressive Episode</th>
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<tr>
<td>Five or more of the following symptoms have been present during the same two-week period and represent a change from previous functioning. At least one of the symptoms is either depressed mood or a loss of interest or pleasure.</td>
</tr>
<tr>
<td>1. Depressed mood most of the day, nearly every day (e.g., feels sad or empty, is tearful). Note: In children and adolescents, this can be an irritable mood</td>
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<tr>
<td>2. Markedly diminished interest or pleasure in all or almost all activities most of the day, nearly every day</td>
</tr>
<tr>
<td>3. Significant weight loss when not dieting, significant weight gain or changes in appetite</td>
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<tr>
<td>4. Insomnia or hypersomnia nearly every day</td>
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<tr>
<td>5. Psychomotor agitation or retardation nearly every day</td>
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<tr>
<td>6. Fatigue or loss of energy nearly every day</td>
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<tr>
<td>7. Feelings of worthlessness, or excessive or inappropriate guilt nearly every day</td>
</tr>
<tr>
<td>8. Diminished ability to think or concentrate, or indecisiveness nearly every day</td>
</tr>
<tr>
<td>9. Recurrent thoughts of death or suicide</td>
</tr>
<tr>
<td>Summarized from DSM-IV criteria</td>
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</table>
energy. Encouragement and support are necessary to help depressed clients become active enough to experience the energy boost that accompanies regular physical activity.

Since persons who are suffering from depression already feel overwhelmed, it is important that their work with you not be perceived as an additional burden or something at which they can fail. Set simple, easily attainable goals that may be reached gradually to increase feelings of achievement. Remember that exercise facilitates recovery from depression by improving mood. In that respect, any type of exercise (i.e., aerobic, strength or lifestyle) that the person is able to perform consistently is likely to be beneficial in improving mood and self-esteem.

Strive for the mental and physical health benefits offered by physical activity rather than improvements in fitness. Since sunshine also has been associated with improvements in mood in some depressed persons (e.g., those with seasonal affective disorder), it may be helpful to encourage clients to exercise outdoors whenever possible. As the depression lifts, more rigorous training programs that focus on enhanced cardiovascular conditioning and overall physical fitness may be developed.

Your client’s exercise program adherence is greatly influenced by their level of depression. Lack of adherence between training sessions most likely reflects the psychological and motivational effects of this disorder. This is your cue to increase the frequency of your contact, if possible, and provide more specific (and perhaps more limited) short-term goals between training appointments. As the depression improves, so will your client’s ability to follow through with less supervision and support. The link between exercise and mood makes documenting adherence and reporting it to the primary clinician on a regular basis (i.e., every two months) an important marker of recovery from depression.

Table 26.3
Common Antidepressant Medications

<table>
<thead>
<tr>
<th>Drug Classification</th>
<th>Brand name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tricyclic Antidepressants (TCAs)</td>
<td></td>
</tr>
<tr>
<td>imipramine*</td>
<td>Tofranil</td>
</tr>
<tr>
<td>amitriptyline*</td>
<td>Elavil</td>
</tr>
<tr>
<td>desipramine*</td>
<td>Norpramin</td>
</tr>
<tr>
<td>nortriptyline*</td>
<td>Pamelor</td>
</tr>
<tr>
<td>Monoamine Oxidase Inhibitors (MAOIs)</td>
<td></td>
</tr>
<tr>
<td>tranylcypromine*</td>
<td>Parnate</td>
</tr>
<tr>
<td>phenelzine*</td>
<td>Nardil</td>
</tr>
<tr>
<td>Selective Serotonin Reuptake Inhibitors (SSRIs)</td>
<td></td>
</tr>
<tr>
<td>fluoxetine*</td>
<td>Prozac</td>
</tr>
<tr>
<td>sertraline*</td>
<td>Zoloft</td>
</tr>
<tr>
<td>paroxetine*</td>
<td>Paxil</td>
</tr>
<tr>
<td>Other Antidepressants (Atypical)</td>
<td></td>
</tr>
<tr>
<td>fluvoxamine*</td>
<td>Luvox</td>
</tr>
<tr>
<td>venlafaxine</td>
<td>Effexor</td>
</tr>
<tr>
<td>bupropion</td>
<td>Wellbutrin</td>
</tr>
<tr>
<td>nefazodone</td>
<td>Serzone</td>
</tr>
</tbody>
</table>

*May also be used to treat symptoms of anxiety or anxiety disorders

Table 26.4
Typical Activity Guidelines — Depression

- Moderate-intensity lifestyle activity that is done consistently is as effective as vigorous aerobic activity in elevating mood and feelings of well-being.
- The best exercise for a client with depression is the one they are most comfortable with. For many individuals, a structured walking program is the optimal way to begin. Even small amounts of activity (i.e., a 10-minute walk) can improve mood.
- Feeling unmotivated, tired, and having little energy are common symptoms of depression. Develop a plan with your clients who are depressed to deal with days when they don’t feel like exercising. Help clients remember that they rarely regret having exercised, once they got started.
- Identify short-term (i.e., daily and weekly) goals and be liberal with praise when they are achieved. Stay in close contact. Between workout sessions, have clients call or e-mail you with updates on adhering to their exercise program.
- Encourage clients to exercise outdoors in the sunshine whenever possible.
Anxiety Disorders

What Are Anxiety Disorders?
Anxiety disorders are prevalent among both adults and children. While mild to modest anxiety enhances performance (for example, during athletic competition), higher levels of anxiety can detract from performance and become problematic. Chronic anxiety that is severe enough to interfere significantly with a person's ability to function is termed an anxiety disorder. The four types of anxiety disorders that will be reviewed in this chapter are: generalized anxiety disorder, panic disorder/agoraphobia, obsessive/compulsive disorder, and social phobia.

Generalized Anxiety Disorder (GAD)
Approximately 3 percent to 8 percent of the population experiences GAD (DSM-IV). GAD is characterized by excessive anxiety and worry about a number of events or situations on most days, for at least six months. (Relax, the anxiety you feel about taking the upcoming ACE Clinical Exercise Specialist exam is not indicative of GAD.) Individuals with GAD feel unable to control a tendency to worry and experience other symptoms such as restlessness, lack of energy, muscle soreness (from tension), irritability, and insomnia. Worries often focus on life circumstances such as jobs, children, finances, health, or even minor matters such as being late for appointments. Likewise, the intensity of the worrying is disproportional to the actual likelihood or the consequences of the feared event. As with depression, all areas of an individual's life are affected, including work performance and interaction in social settings and with family. Table 26.5 lists the symptoms of GAD.

People who are experiencing GAD may not always identify their worrying as excessive (many individuals say they have felt this way as long as they can remember). However, they may speak of other common anxiety symptoms, such as having a lump in their throat, sweating, having cold and/or clammy hands, feeling nauseated, and having a dry mouth or pounding heart. These individuals often jump excessively when startled. Symptoms of depression also may be present. Persons with GAD are likely to appear very anxious, pacing nervously while talking with you or sitting on the edge of the chair, unable to relax. Their expectations of themselves (and others) often are unrealistically high, and they may describe themselves as perfectionists.

Anxiety disorders are thought to result from a sensitive nervous system combined with a cognitive style (i.e., thinking too much), as well as potential alternations in neurotransmitter levels. Women are affected more often than men. Medications such as nonsedating antihistamines, thyroid replacement therapy, and even antidepressants can make people feel very anxious. As with depression, you should refer for evaluation any client whom you suspect may be clinically anxious. Clinicians who are qualified to assess and treat anxiety include psychiatrists and other physicians, psychologists, and clinical social workers.

Panic Disorder/Agoraphobia
Panic disorder is characterized by recurrent panic attacks — an acute episode of intense anxiety and apprehension, accompanied by feelings of doom and overwhelming terror. During a panic attack, many individuals feel unable to breathe or as if they are being smothered, and experience heart palpitations and/or chest pain. When people first experience panic attacks, they may feel as though they are having a heart attack or are going crazy, and may lose control.

When some individuals experience panic attacks in public places (especially when alone), they begin to fear being in situations or places they cannot readily escape from if an attack occurs. Agoraphobia is the widespread avoid-
nance of places or situations in which panic attacks have previously occurred, or may potentially occur. A primary characteristic of agoraphobia is a fear of having panic symptoms, and agoraphobics often avoid restaurants, theaters, stores or traveling far from home.

Individuals who suffer from panic disorder and/or agoraphobia often are highly attuned to sensations in their body, and they label these sensations in negative ways. For example, any increase in heart rate (even when exercise-induced) may be perceived as the onset of a panic attack.

**Obsessive/Compulsive Disorder (OCD)**

OCD is characterized by recurrent intrusive obsessions (i.e., thoughts, ideas or images) and/or compulsions (i.e., irresistible urges to behave in a certain manner) that significantly interfere with a person's life. Often, the individual is aware that the obsessions and/or compulsions are unreasonable and may perceive them as silly or irrational. Regardless, they are unable to control them. The most common obsessions include fear of contamination, such as exposure to germs by shaking hands or touching doorknobs; having relentless doubts (e.g., wondering whether one has completed a task properly, such as turning off the stove or unplugging an iron); and the need to have things in a particular order (e.g., everything in the cupboard arranged in alphabetical order). Often, the individual feels compelled to neutralize the obsessions with ritualistic or repetitive behaviors. Examples of compulsions include hand washing (to undo contamination), continual checking to verify task completion, or mental tasks such as repeating a phrase or counting. While individuals derive little pleasure from such compulsive activities and may wish to resist them, they generally feel unable to stop.

Obsessions also may revolve around perfectionist impulses to obtain an ideal body shape or level of fitness. Compulsion may include the irresistible impulse to exercise excessively to attain these goals. (Obsession and compulsion to eat in prescribed manners to achieve similar results are discussed later in the chapter.) Thus, persons with OCD may seek out a clinical exercise specialist to help them optimize their programs. Their preoccupation with rigid exercise schedules, muscle definition or weight loss will appear excessive and all-consuming.

**Social Phobia (or Social Anxiety Disorder)**

Phobias result when individuals feel clinically anxious in response to certain objects or situations they fear. Phobias most often are handled by avoiding the feared object or situation. Social phobia is characterized by anxiety to social situations, especially those involving some type of performance in front of others. Many individuals avoid health clubs altogether or attend only when they are confident that few people will be present to view them exercising. Another common manifestation of social phobia is overwhelming embarrassment when disrobing in locker rooms. Persons with social phobia will be particularly sensitive to any feedback you may provide.

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**Typical Activity Guidelines — Anxiety Disorders**

- Before beginning any exercise program, be certain clients understand the normal body sensations associated with exertion (i.e., increasing heart rate, mild shortness of breath, sweating).
- Work very closely in the beginning to ensure that heart rate is elevated slowly. The primary goal initially is to increase comfort with exercise and help clients recognize that they can both increase and decrease exercise-related sensations.
- Vigorous aerobic exercise produces optimal decreases in anxiety in both the short- and long-term. Moderate-intensity lifestyle activity also appears to decrease high anxiety levels over time.
- Keep the program and exercise sessions predictable and structured. Provide as much advance notice as possible of changes in the program, training schedule, or substitute trainers.
- Schedule indoor training sessions during...
How Are Anxiety Disorders Treated?

Treatment for anxiety disorders typically involves cognitive-behavioral therapy, which has proven to be highly effective. The individual in cognitive-behavioral therapy learns two primary techniques: 1) To decrease their level of physiological arousal through techniques such as relaxation or breathing exercises, and 2) To talk to themselves in supportive, comforting ways rather than continuing an internal conversation that makes them more anxious. (An example of supportive self-talk is having people remind themselves that it is only a panic attack, that they are not really having a heart attack and that they will be fine as soon as they calm down.)

When individuals are so anxious that they are unable to utilize these techniques effectively, medication also may be used in combination with therapy. Of these medications, the benzodiazepines should be utilized only for relatively brief periods, as they carry the risk of dependence over time. Examples of common anti-anxiety medications are shown in Table 26.7. Several antidepressant medications also have mild anti-anxiety properties. Side effects related to anti-anxiety medications usually are mild and usually disappear over time. However, when the medications are discontinued, particularly if withdrawal is abrupt, symptoms such as anxiety, nausea, insomnia and sadness may appear. Beta blockers occasionally are used to treat anxiety disorders as well. These drugs suppress heart rate and must be considered when designing an exercise program.

Adapting Physical Activity Programs

Many clinicians who treat anxiety also recommend that their patients begin exercising if they are sedentary, or continue to exercise if they are active. Specific adaptations to exercise may be helpful for highly anxious clients. For example, carefully choose the type of exercise and calculate the rate of progression, which is likely to be much slower than the progression you use with other clients. Individuals with panic disorder who usually interpret physiological arousal as a danger signal (e.g., an impending heart attack) may experience a great deal of psychological discomfort in purposefully bringing on these sensations. Thus, a primary initial goal may be to help your client learn to tolerate low levels of arousal and to recognize that arousal can be decreased and increased voluntarily.

It is important to follow some basic principles that minimize the onset of anxiety as a result of exercise.

- Ensure that clients know what to expect regarding physiological arousal that occurs with exercise (e.g., increased heart rate, some shortness of breath).
- Keep exercise sessions highly structured and predictable.
- Inform clients in advance of any planned changes, including vacations and/or when a substitute may train for you. (Try to allow a minimum of three weeks’ notice.)

Carefully monitor your client’s anxiety levels when changing their exercise program. Develop an ongoing dialogue that encourages clients to talk about any exercise-related concerns, such as fears about achieving an elevated heart rate. Never ridicule or diminish concerns; instead, discuss factual knowledge about the issue in a supportive and positive fashion. Acknowledge that some apprehension about physical activity is normal for many people when they begin to exercise.

The Role of Exercise in Treating Anxiety Disorders

As with depression, exercise, in addition to therapy and/or medication, may play a central role in treating anxiety disorders. In the short term (i.e., immediately after exercising), exercise decreases anxiety and induces a more relaxed state. Aerobic exercise may be particularly effective. Several studies show that baseline levels of anxiety are lower in individuals who exercise regularly compared to sedentary adults. Thus, exercise appears to be a potent stress reducer, further enhancing its benefits in anxious persons.

### Table 26.7 Common Anti-anxiety Medications

<table>
<thead>
<tr>
<th>Drug Classification</th>
<th>Brand name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzodiazepines</td>
<td></td>
</tr>
<tr>
<td>diazepam</td>
<td>Valium</td>
</tr>
<tr>
<td>alprazolam</td>
<td>Xanax</td>
</tr>
<tr>
<td>lorazepam</td>
<td>Ativan</td>
</tr>
<tr>
<td>clonazepam</td>
<td>Klonopin</td>
</tr>
<tr>
<td>buspirone</td>
<td>Buspar</td>
</tr>
<tr>
<td>Beta Blockers</td>
<td></td>
</tr>
<tr>
<td>atenolol</td>
<td>Tenorlin</td>
</tr>
<tr>
<td>propranolol</td>
<td>Inderal</td>
</tr>
</tbody>
</table>

For antidepressants that may be used to treat anxiety, see Table 26.3.
Because high levels of anxiety are physically exhausting, individuals with anxiety disorders often feel very tired, especially toward the end of the day. Therefore, morning may be the most productive time for exercise sessions. Anxious clients need encouragement and support to stick with an exercise program long enough to experience the stress reduction and energy boost that accompany regular physical activity.

If you suspect a client is socially anxious, take their fears seriously. If exercising in a facility, try to schedule sessions during off-peak times. Socially anxious persons are keenly sensitive about being watched and often fear that every observation is coupled with a resultant criticism.

Initially, be liberal with praise and careful with corrections. A good rule is to sandwich any corrective comment inside at least two positive ones.

**Eating Disorders**

Eating disorders are characterized by severe disturbances in eating and related behaviors. Three types of eating disorders have been identified: anorexia nervosa, bulimia nervosa and binge eating. An individual with anorexia nervosa reduces eating to the point that they refuse to maintain a minimally normal body weight. With bulimia nervosa, recurrent episodes of binge eating are accompanied by desperate and unhealthy attempts to compensate for the calories that were consumed. Binge eating is similar to bulimia nervosa in that large amounts of food are eaten; however, no compensatory behaviors are used and the individual typically becomes, or remains, overweight. Exercise may play a central role in both anorexia and bulimia, as the fear of fatness that is typical of anorexia or bulimia may drive individuals to exercise excessively in an attempt to burn calories and lose weight.

**Anorexia Nervosa (AN)**

Anorexia nervosa, present in about 1 percent of the population, is most prevalent in cultures in which food is abundant and thinness is highly valued. More than 90 percent of anorexic individuals in the U.S. are female and Caucasian (although these statistics are beginning to change). Anorexia is prevalent among female athletes, especially gymnasts, dancers and runners. Onset typically begins in adolescence and early adulthood. Table 26.8 summarizes the characteristics of anorexia nervosa.

The threshold of weight for anorexia nervosa is approximately 85 percent or below what is considered normal for a person’s height (Table 26.9). This is approximately equal to a body mass index of 17.5 kg/m². Low body weight is accompanied by an intense fear of becoming fat; paradoxically, as the individual loses weight, the fear of fat seems to increase. Individuals suffering from AN are dissatisfied with the size and shape of their body, and may frequently comment that they feel fat or ask others whether they look fat. Women stop menstruating when their body fat falls below the critical weight threshold.

Anorexics generally lose weight by reducing total caloric intake, frequently excluding any food from their diet that they perceive as being “bad,” or fattening. It is not uncommon for elaborate rituals to be developed around eating or the avoidance of food. While relentlessly avoiding eating, the anorexic appears preoccupied with thoughts of food and eating, often collecting recipes or reciting the nutritional content of most foods. Excessive exercise also may be used to reduce body weight. A common marker may be taking back-to-back group classes at a health club. Because family and friends are concerned with the individual’s weight, anorexics often exercise in secret and are dishonest about the amount of physical activity they perform each day. Inability to exercise often results in feelings...
of terror, anxiety and stress, as the individual fears rapid weight gain will occur. The most common long-term physical complication of anorexia nervosa is osteoporosis, which can lead to stress fractures caused by exercise. And while anorexic individuals often believe exercise will strengthen their bones, it is important to realize that the risk of exercise to the underweight individual far exceeds any possible benefits to bone density. Indeed, attaining a normal body weight is the only definitive way to halt progressive osteoporosis in anorexia nervosa.

Most individuals with AN do not voluntarily seek help, and in many cases family or friends refer anorexics for treatment. Coaches and trainers often are instrumental in helping individuals who exercise intensely to seek treatment. Clinical signs of the disorder include bradycardia, constipation, cold intolerance, hypotension, hypothermia, and either lethargy or excessive energy. About 10 percent of anorexics who receive inpatient hospitalization eventually die from starvation, suicide or electrolyte imbalance.

**Bulimia Nervosa**

Bulimia nervosa is thought to be, in part, culturally related and exacerbated by Western society’s preoccupation with thinness. Bulimia is characterized by binging on large amounts of food, followed by unhealthy behaviors to avoid weight gain and heightened attempts to further restrict food intake. (These behaviors generally must occur at least twice a week for three months before diagnosis.) The prevalence of BN ranges among women from 1 percent to 3 percent, while it is 0.1% among men. About 90 percent of individuals with this disorder are females who are of average weight or less.
are slightly overweight. Bulimia nervosa is characterized by an intensive fear of gaining weight, a strong desire to lose weight, high levels of dissatisfaction with one's body, and excessive emphasis on the importance of weight and shape as determinants of one's self-worth. A summary of characteristics of bulimia nervosa is outlined in Table 26.10.

A binge is defined as eating an unusually large amount of food in a short period (e.g., less than two hours), accompanied by a feeling of loss of control. Binge foods often are sweet, high-calorie foods such as ice cream or cake, and typically are considered forbidden at any other time. Binges often are planned in advance, occur in secrecy and continue well beyond the point when the person feels full. Binging can be triggered by feeling bad, boredom, feeling overwhelmed or unable to cope, or high levels of hunger after eating very little (Figure 26.1).

Binges are followed by inappropriate compensatory behaviors. Individuals force themselves to vomit to rid themselves of the food approximately 80 percent to 90 percent of the time. Other purging-type behaviors include the abuse of diuretics (over-the-counter as well as prescription) and/or laxatives. Excessive exercise also may be used to “purge” the body of the excess calories in an attempt to prevent weight gain. According to the DSM-IV:

Exercise may be considered to be excessive when it significantly interferes with important activities, when it occurs at inappropriate times or in inappropriate settings, or when the individual continues to exercise despite injury or other medical complications. (p. 546)

Psychological symptoms of depression, anxiety and substance abuse are common among individuals who suffer from bulimia. Often, more serious personality disorders also are present, making this type of eating disorder a challenge to treat. Other clinical signs include dental erosion (from recurrent vomiting), enlargement of the salivary glands, menstrual difficulties, cardiac arrhythmia, and potentially life-threatening fluid and electrolyte imbalances.

**Binge Eating Disorder (BED)**

Of the three eating disorders, binge eating is by far the most common, though it only recently has been studied and treated in clinical settings. Both men and women suffer from binge eating disorder, and in clinical weight-management programs, about 25 percent to 30 percent of participants are thought to suffer from BED. As with bulimics, individuals with BED consume unusually large amounts of food in a short period, and feel a loss of control over their eating habits. However, with BED, there is little or no compensatory behavior. As a result, individuals with BED almost always are overweight. Binges often are triggered by negative moods, stressful situations or even eating small amounts of “forbidden” foods. As with other eating disorders, BED involves an intense fear of gaining weight, a strong desire to lose weight, high levels of body dissatisfaction, and an excessive emphasis on the importance of weight and shape. Individuals with BED also feel ashamed of their disorder and believe their eating is “out of control.” Frequently, binge eating also is referred to as compulsive overeating. Characteristics of BED are shown in Table 26.11.

**Treatment for Eating Disorders**

Eating disorders are psychological disorders manifested through food and eating. Treatment always involves psychotherapy by qualified eating disorders specialists (i.e., psychiatrists, psychologists, family therapists and social workers) who most often work within a multi-disciplinary team that may include nutritionists and

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**Table 26.10**
Characteristics of Bulimia Nervosa

1. Recurrent episodes of binge eating. An episode of binge eating is characterized by the following:
   a. Eating, in a discrete period of time (e.g., usually within a two-hour period), an amount of food that is definitely larger than most people would eat during a similar period and under similar circumstances
   b. A sense of lack of control over eating during the episode (i.e., a feeling that one cannot stop eating or control what or how much one is eating)
   c. Recurrent inappropriate compensatory behavior to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas or other medications; fasting; or excessive exercise
   d. Binge eating and inappropriate compensatory behaviors occur, on average, at least twice a week for three months
   e. Self-evaluation is heavily influenced by body shape and weight.

2. Types: Purging or nonpurging (i.e., use of inappropriate compensatory behaviors such as fasting or excessive exercise, but does not vomit, misuse laxatives or enemas)

Source: Summary of DSM-IV diagnostic criteria
occupational therapists, among others. In severe cases, individuals are hospitalized and stabilized until they are able to continue with outpatient treatment. Since depression may accompany the eating disorder, antidepressant medications often are used as part of treatment. Medical nutrition therapy is provided to teach individuals the principles of healthy eating and normal portion sizes.

The Role of Exercise in Treating Eating Disorders

Exercise plays a complex and varied role in treating eating disorders. When excessive exercise is part of the disorder, exercise intensity and duration should be diminished during treatment. Likewise, anorexic individuals who need to gain weight should not exercise until they have achieved a healthy weight and BMI of at least 20.

If you suspect a client has an eating disorder, it is critical that you refer them to a qualified specialist for evaluation. No amount of exercise or nutritional therapy alone will sufficiently address the eating disorder. Many times, individuals with eating disorders seek out the assistance of allied health and fitness professionals to reassure themselves that they are getting “professional help” for their problem. However, such alliances prevent people with eating disorders from dealing with the issue directly and getting the help they need. Therefore, it is not wise to work with these individuals unless a therapist clears them for participation in an exercise program.

How do you approach the topic of an eating disorder with a client? This is never easy, as individuals often feel ashamed of their behaviors and typically go many years before seeking assistance. Nonetheless, it is important that you provide a clear, personal and compassionate message of concern. For example:

“I’m Mary, and as a clinical exercise specialist my role is to provide you with feedback about your current nutrition and exercise practices. I have to be honest with you, I’m concerned about… [state concerns, using the client’s words whenever possible]. It’s important to have someone with more expertise in this area evaluate you, and I’d like to refer you to Dr. X. (And if this is the case you might add...) I’ve worked with Dr. X in the past and other clients have found her to be helpful.”

### Table 26.11

**Characteristics of Binge Eating Disorder**

1. Recurrent episodes of binge eating. An episode of binge eating is characterized by the following:
   a. Eating, in a discrete period of time (e.g., usually within any two-hour period), an amount of food that is larger than most people would eat during a similar period and under similar circumstances
   b. A sense of lack of control over eating during the episode (i.e., a feeling that one cannot stop eating or control what or how much one is eating)
   c. Binge episodes are associated with three (or more) of the following:
      • Eating much more rapidly than normal
      • Eating until feeling uncomfortably full
      • Eating large amounts of food when not feeling physically hungry
      • Eating alone to avoid embarrassment over how much one is eating
      • Feeling disgusted with oneself, depressed or very guilty after overeating
   d. Marked distress regarding binge eating
   e. Binges occur at least two days a week for six months, on average
   f. There is no use of inappropriate compensatory behaviors

Source: Summary of DSM-IV diagnostic criteria
Locate the eating disorders programs offered in your area and provide your client with phone numbers and addresses whenever possible. A good place to look for eating disorders programs is the psychiatry departments at medical schools and/or large hospitals.

**Case Study 1**

Clarence is a 45-year-old African-American stockbroker who is 6 feet tall and weighs 290 pounds. He suffers from severe sleep apnea (episodes of complete, brief cessation of breathing during sleep) and was referred to you by a sleep disorders center. He tells you that a sleep study revealed he experiences more than 60 episodes of apnea an hour each night. Though his physicians have recommended the use of a CPAP (continuous positive air pressure) machine, he also has been told that losing weight will reduce or eliminate his problems entirely. He wants to begin exercising, as part of an overall lifestyle change.

Together, you develop an appropriate exercise program using the American College of Sports Medicine guidelines for sedentary overweight adults. The plan is to have Clarence work with you twice a week, and exercise on his own two additional times during the week. He tells you he knows what to do in terms of eating to lose weight. During the first week, Clarence misses his second session with you. When you call, he tells you that he simply forgot about the appointment. In the second week, he cancels the second appointment because he feels too tired. When you meet the next time, he confides that he hasn’t been doing any exercise outside of your work together.

Clarence tells you that he is always tired, from the time he awakens in the morning until he falls asleep at night, and asks you not to take it personally when he misses appointments. On most days, he falls asleep in the recliner before dinner, and often takes brief naps during the work day when he can get away. He states that he feels unmotivated because of his overwhelming fatigue. In fact, he’s even stopped going to NFL games, even though he holds Redskins season tickets. Clarence reaffirms his commitment to change his lifestyle, and pleads for another chance to prove he can begin exercising. He is convinced his lack of motivation is completely related to the sleep apnea.

During week four, Clarence does not attend either appointment. He leaves a message for you saying he will be in next week, and you decide to hold your next meeting in your office rather than in the weight room. When you meet, you tell him you are concerned that his lack of motivation may reflect more than just fatigue and recommend that he talk with his doctor about the matter. With his permission, you contact his physician and outline your concerns about his mood and consistent inability to follow through with plans.

It takes Clarence four weeks (and several prompts from you) to see his doctor. Once he does, he is placed on antidepressant medication and begins weekly sessions with a therapist. He tells you that he still thinks his problems are related to his sleep apnea, but he’s willing to take medication and attend some counseling sessions. Together, you begin developing new exercise goals. You agree that you will train together at a moderate intensity for 30 minutes, two times a week, and that he will go for a 20-minute walk with his wife one night each week. (He consents to call you and leave word on your voice mail once he has completed the walk.) You agree that in one month, if he has been unable to lose weight, you will refer him to a dietician for assistance in developing a meal plan that promotes weight loss.

Simpler goals, more frequent contact and having his depression evaluated all appear to improve Clarence’s adherence to his exercise program. The real changes in mood, motivation and energy become apparent as Clarence loses weight and reduces both the severity and frequency of his sleep apnea episodes. Treatment of the depression proved essential in making these gains.

**Case Study 2**

Karen is a 36-year-old physical education instructor who is 5 feet 5 inches and weighs 115 pounds. Her BMI is 19. She comes to you for post-rehabilitative supervision following a rotator cuff repair. An avid swimmer, she wants assistance developing a cross-training program that will be intensive, but not place too much demand on her shoulder musculature. She tells you that not being able to swim was unbearable and she is very anxious to increase her physical activity.

During your interview, Karen confides that she is looking for an intensive aerobic program to help her lose the 5 pounds she has gained since her shoulder surgery. When you suggest a running and step-climbing routine, she tells you about repetitive injuries to her right knee that now preclude her from running or doing weight-bearing exercise. She seems anxious, worried and preoccupied with beginning a new exercise routine. She asks you to estimate her body fat on a...
regular basis. She also asks your opinions regarding the optimal protein content of her diet.

As you discuss her diet, you become increasingly uncomfortable with Karen’s decisions about what she will eat. She wants to avoid all red meat and chicken, and occasionally allows herself to have some fish or egg whites as protein sources. She has eliminated any sources of added fat from her diet. However, she tells you that she’s not overly rigid about this; on occasion, she will allow herself to splurge on fat calories and enjoy either ice cream or a large value meal at the local fast food restaurant.

You begin to suspect that Karen’s interest in food, her intense desire to be thinner and her preoccupation with exercise may reflect a pattern of disordered eating. When you begin to broach your concerns with her, she immediately makes it clear that this is not open to discussion. Though unwilling to talk initially, after several openings to discuss the subject during subsequent meetings, Karen tells you that she used have an eating disorder (bulimia nervosa), but hasn’t had problems with it for a long time.

It is important for Karen to be evaluated for the recurrence of the eating disorder by a qualified mental health specialist. Though she may initially balk at the suggestion, over time she will hopefully take your concerns seriously and seek necessary help. In the interim, it is important to not fuel her eating disorder by condoning inappropriate exercise levels or offering nutritional advice.

References & Suggested Reading


