

EATING DISORDERS

KEY FACTS

- Approximately 7.5–11.0 percent of adolescent females and 2.0–4.5 percent of adolescent males report that in the previous year they used diet aids or laxatives or induced vomiting to lose weight or avoid gaining weight (Kann et al., 2000).
- Thirty-seven percent of elementary school children have tried to lose weight (Steiner and Lock., 1998).
- Eating disorders are more commonly seen in females, although males are also affected. Estimates of the male-female prevalence ratio range from 1:6 to 1:10 (American Psychiatric Association, 2000b).
- Approximately 5 percent of individuals with anorexia nervosa die from the disorder, with half of the deaths occurring as a result of suicide (American Psychiatric Association, 2000b; Steiner and Lock, 1998).

Eating problems and disorders fall along a continuum, ranging from unhealthy eating and concern with body size/shape to life-threatening disorders such as anorexia nervosa and bulimia nervosa.



DESCRIPTION OF SYMPTOMS

Anorexia Nervosa

(Diagnostic code: 307.1)

Adapted from DSM-PC and DSM-IV-TR. Selected additional information from DSM-IV-TR is available in the appendix. Refer to DSM-PC or DSM-IV/DSM-IV-TR for full psychiatric criteria and further description.

Infancy and Early Childhood

Usually not relevant during these developmental stages.

Middle Childhood and Adolescence

- Refusal to maintain body weight at or above 85 percent of that expected for age and height
- Intense fear of gaining weight

- Distorted perception of own weight or body shape, undue influence of body weight/shape on self-esteem, or denial of seriousness of weight loss
- Absence of at least three consecutive menstrual cycles (in postmenarcheal females)

There are two types of anorexia nervosa. Individuals with the restricting type do not regularly engage in binge-eating or purging behaviors. (Binge-eating refers to episodes of eating a larger-than-normal amount of food, and feeling a lack of control over eating.) Those with the binge-eating/purging type regularly engage in these behaviors.

Bulimia Nervosa

(Diagnostic code: 307.51)

Adapted from DSM-PC and DSM-IV-TR. Selected additional information from DSM-IV-TR is available in the appendix. Refer to DSM-PC or DSM-IV/DSM-IV-TR for full psychiatric criteria and further description.

Infancy and Early Childhood

Usually not relevant during these developmental stages.

Middle Childhood and Adolescence

- Recurrent episodes of binge-eating (episodes of eating a larger-than-normal amount of food, and feeling a lack of control over eating)

- Compensatory behavior to prevent weight gain (e.g., restricting, excessive exercising, vomiting, or using laxatives, diuretics, diet pills, or enemas)
- Occurrence of binge-eating and compensatory behaviors at least two times per week for at least 3 months
- Undue influence of body shape and weight on self-evaluation

There are two types of bulimia nervosa. Individuals with the purging type regularly engage in purging behavior (vomiting or use of laxatives, diuretics, or enemas). Those with the nonpurging type use other compensatory behaviors, such as fasting or excessive exercising, but have not regularly engaged in purging behaviors.

Description of Symptoms (continued)

Eating Disorder Not Otherwise Specified

(Diagnostic code: 307.50)

Adapted from DSM-PC and DSM-IV-TR. Selected additional information from DSM-PC is available in the appendix. Refer to DSM-PC or DSM-IV/DSM-IV-TR for full psychiatric criteria and further description.

Eating disorder not otherwise specified is applied to disorders of eating that do not meet the full criteria for a specific eating disorder. For example, eating disorder not otherwise specified might be diagnosed when

- Criteria for anorexia nervosa are met except that menstrual cycles are regular (for postmenarcheal females), or weight is at or above 85 percent of that expected for age and height
- Purging behaviors occur in the absence of binge-eating or anorexia nervosa
- Binge-eating and purging occur fewer than two times per week or for less than 3 months
- Recurrent binge-eating occurs without regular use of compensatory mechanisms

COMMONLY ASSOCIATED DISORDERS

According to Steiner and Lock (1998), Yager (1996), and American Psychiatric Association (2000b), the following disorders or psychosocial problems are associated with eating disorders in children and adolescents:

Mood Disorders

Major Depression

Between 30 and 50 percent of patients with anorexia nervosa and between 50 and 70 percent of patients with bulimia nervosa have major depression.

Bipolar Disorder

Twelve percent of patients with bulimia nervosa have bipolar disorder.

Anxiety Disorders

Up to 60 percent of patients with anorexia nervosa and 40–60 percent of those with bulimia nervosa have an anxiety disorder.

Obsessive Compulsive Disorder

Up to 25 percent of patients with anorexia nervosa have obsessive compulsive disorder.

Sexual Abuse History

Twenty to 50 percent of patients with eating disorders have a history of sexual abuse. A history of sexual abuse is more common among those with bulimia nervosa than among those with anorexia nervosa.

Substance Abuse

Substance abuse is more prevalent among patients with bulimia nervosa and purging type anorexia nervosa than among those with non-purging type anorexia nervosa and the general population.

INTERVENTIONS

Eating disorders are chronic illnesses that present long-term challenges. Studies indicate that approximately 44 percent of patients with anorexia nervosa and 60 percent of patients with bulimia nervosa will have good long-term outcomes; 28 percent and 29 percent, respectively, will have intermediate long-term outcomes; and 24 percent and 10 percent, respectively, will have poor long-term outcomes, with mortality rates of 5 percent and 1 percent, respectively (American Psychiatric Association, 2000b; Fichter and Quadflieg, 1997). A poorer prognosis is associated with late onset of the disorder, longer duration of symptoms, premorbid obesity, lower minimum weight, family dysfunction, co-occurring psychiatric diagnoses, and vomiting and laxative use.

Treatment of children and adolescents with eating disorders optimally takes place with the support of an interdisciplinary team, including a primary care health professional, a dietitian, a dentist, and mental health professionals. Because of the complexity and chronicity of eating disorders, clear behavioral expectations and communication among members of the team are essential. (See *Bright Futures Case Studies for Primary Care Clinicians: Anorexia Nervosa: Stephanie's Long Walk* [Grace, 2001] at www.pedicases.org.)

Child or Adolescent

1. Primary care health professionals can help prevent eating disorders in children and adolescents. The following are some suggestions for how health professionals can do this:
 - Promote self-esteem in children and adolescents throughout their development.
 - Educate children, adolescents, and families about healthy eating behaviors throughout the child's or adolescent's development. Identify parents with excessive concern about or rigid control of their children's or adolescent's eating and physical activity behaviors.
 - Be aware that early-maturing girls are likely to diet earlier than their peers and may be more dissatisfied with their appearance and have a poorer body image.
 - Discuss with children and adolescents safe ways to maintain a healthy body weight.
 - Educate and reassure girls and adolescent females about the natural process of fat gain during puberty. (Females' body-fat percentage normally increases from approximately 8 percent before puberty to approximately 22 percent by the end of puberty.)
 - Emphasize that a healthy body weight is based on genetically determined build and shape rather than on a culturally defined weight.
 - Assess girls' self-image as they approach puberty. Girls who feel most negative about their bodies at puberty may be at highest risk for the development of eating-disordered behaviors.
 - For overweight children and adolescents, avoid critical statements, but offer support for gradual weight loss via healthy eating, physical activity, and social support.
2. Because eating disorders are prevalent in middle childhood and adolescence, it is important to screen for them. For information on screening for eating disorders, see Table 13. Eating Disorders: Assessment, Warning Signs, and Screening Questions.

Table 13. Eating Disorders: Assessment, Warning Signs, and Screening Questions

Assessment	Warning Signs	Screening Questions
Body image and weight history	<p>Distorted body image</p> <p>Extreme dissatisfaction with body shape or size</p> <p>Profound fear of gaining weight or becoming fat</p> <p>Unexplained weight change or fluctuations greater than 10 pounds</p>	<ul style="list-style-type: none"> ■ How do you feel about the way you look? ■ Has there been any change in your weight? ■ Are you trying to change your weight? Tell me about the ways you try to control your weight.
Eating and related behaviors	<p>Very low caloric intake; avoidance of fatty foods</p> <p>Poor appetite</p> <p>Difficulty eating in front of others</p> <p>Chronic dieting despite not being overweight</p> <p>Binge-eating episodes</p> <p>Self-induced vomiting, use of syrup of ipecac; laxative or diuretic use</p>	<ul style="list-style-type: none"> ■ What did you eat yesterday? ■ Do you ever binge? ■ Have you ever induced vomiting (e.g., by using syrup of ipecac)? ■ Have you ever used laxatives, diuretics, or diet pills to lose weight?
Meal pattern	<p>Fasting or frequent meal skipping to lose weight</p> <p>Erratic meal pattern with wide variations in caloric intake</p>	
Physical activity	<p>Preoccupation with weight because of participation in physical activity with weight or size requirement (e.g., gymnastics, wrestling, ballet)</p> <p>Overtraining or compulsive attitude about physical activity</p>	<ul style="list-style-type: none"> ■ How much do you participate in physical activity in a typical week?

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Table 13. Eating Disorders: Assessment, Warning Signs, and Screening Questions (continued)

Assessment	Warning Signs	Screening Questions
Health history	<p>Secondary amenorrhea or irregular menses</p> <p>Cold intolerance</p> <p>Fainting episodes or frequent lightheadedness</p> <p>Constipation or diarrhea unexplained by other causes</p> <p>Feeling bloated/nausea/abdominal pain</p>	<ul style="list-style-type: none"> ■ (For postmenarcheal females) How often do you get your period? ■ (For postmenarcheal females) Has there been any change in your periods?
Psychosocial assessment	<p>Depression</p> <p>Anxiety/obsessive compulsive traits</p> <p>Constant thoughts about food or weight</p> <p>Pressure from others to be a certain shape or size</p> <p>History of physical or sexual abuse or other traumatizing life event</p>	<ul style="list-style-type: none"> ■ Do you think your feelings about your body are affecting your mood? ■ How much do you worry about eating or your weight?
Physical examination	<p>BMI < 5th percentile</p> <p>Bradycardia or irregular heart rate, decreased blood pressure after arising suddenly</p> <p>Hypothermia</p> <p>Loss of muscle mass</p> <p>Lanugo</p> <p>Tooth enamel demineralization</p> <p>Peripheral neuropathy</p> <p>Peripheral edema</p>	

Sources: Adams and Shafer, 1988; American Medical Association, 1996, as cited in Story et al., 2000; Perkins et al., 1997; Powers, 1996. Screening questions adapted, with permission, from Powers, 1996.

3. Assess the following areas in further detail for children and adolescents who present with concerning findings on initial screening:
 - Psychosocial history
 - Screen for associated depression, anxiety disorders, substance abuse, or history of abuse. Ask about suicidal ideation (suicidal thoughts).
 - Interview the child or adolescent and the parents about circumstances surrounding the onset of eating behaviors and weight changes. Ask about any family stressors or conflicts.
 - Inquire about any school difficulties or legal problems.
 - Review of symptoms
 - Ask about symptoms associated with eating-disordered behavior.
 - Cardiac: fainting, dizziness, palpitations.
 - Gastrointestinal: sore throat, heartburn, regurgitation, dysphagia (sensation of food getting stuck while swallowing), abdominal pain, bloating, constipation.
 - Genitourinary: polyuria (passage of large amounts of urine that may be manifested by frequent urination).
 - Endocrine: amenorrhea, cold intolerance, fatigue, hair loss. Amenorrhea may occur before weight loss in up to one-fourth of postmenarcheal females with anorexia nervosa. Amenorrhea for up to 1 year in an adolescent is associated with osteopenia (decrease in bone mass). Menstrual function is also impaired in 20–40 percent of female patients with bulimia.
 - Musculoskeletal: bone pain with movement (stress fractures).
 - Physical findings
 - Vital signs: hypothermia, bradycardia (slow heart rate), hypotension
 - Head/neck: tender/swollen parotid glands, dental caries, tooth enamel erosion
 - Musculoskeletal: muscle wasting
 - Skin: lanugo hair, dry skin, calluses on knuckles (Russell’s sign), acrocyanosis of digits (blue fingers and toes due to constriction of blood vessels)
 - Medical evaluation
 - Evaluate medical causes of weight loss or menstrual abnormalities as indicated (e.g., thyroid disease, malignancy, hypothalamic lesions, inflammatory bowel disease, celiac disease, diabetes mellitus, HIV, Addison’s disease, other chronic illness).
 - Perform initial screening tests as indicated (e.g., complete blood count [CBC] and differential, sedimentation rate, urinalysis with specific gravity, electrolytes, glucose, calcium, magnesium, phosphorus, blood urea nitrogen (BUN), creatinine, thyroid functions, electrocardiogram (ECG)).
4. For children and adolescents for whom outpatient treatment is indicated, consider the following:
 - An interdisciplinary team approach is critical for treating children or adolescents who have been identified as having eating-disordered behaviors. Goals for treatment include
 - Stabilizing and treating medical complications

- Restoring and maintaining a normal weight
- Reducing co-occurring psychiatric symptoms
- Addressing irrational thoughts about food and body image
- Enlisting family support for treatment
- The outpatient treatment team ideally has expertise in treating children and adolescents with eating disorders and includes the following members:
 - A primary care health professional
 - May serve as coordinator with dietitian and mental health professionals.
 - May coordinate the team's consultation with the child's or adolescent's dentist.
 - Monitors the child's or adolescent's weight, postural vital signs, and laboratory test results as indicated.
 - Monitors the child's or adolescent's long-term growth and development, and treats medical complications of eating disorders.
 - Educates the child or adolescent about potential health consequences of eating disorders. (Potential consequences of anorexia nervosa include growth retardation, pubertal delay, osteoporosis, endocrine dysfunction [pituitary, hypothalamic, thyroid abnormalities], cardiac arrhythmias, and congestive heart failure. Potential consequences of bulimia nervosa include serious electrolyte imbalances such as hypokalemia, cardiac arrhythmias, dental erosion, esophageal tears, and aspiration pneumonia.)
 - Educates the child or adolescent about the effects of poor nutrition on well-being: low energy (usually seen with intake of less than 500 calories per day), irritability, sleep disturbances, and poor concentration.
 - A dietitian
 - Develops an eating plan for safe weight restoration and/or changing eating behaviors.
 - Works with the child or adolescent and family to facilitate acceptance of the eating plan and prevention of dieting and food restriction that may trigger binge-eating.
 - Educates the child or adolescent and family about nutritional needs and consequences of starvation, binge-eating, and purging.
 - Mental health professionals (may include a child and adolescent psychiatrist, clinical psychologist, social worker, and/or other mental health professionals)
 - May serve as coordinators with dietitian and primary care health professional.
 - May coordinate the team's consultation with the child's or adolescent's dentist.
 - Perform complete mental health evaluation, including assessment for associated or co-occurring disorders.
 - Engage child or adolescent in appropriate therapy as indicated by the evaluation (e.g., cognitive-behavioral therapy, insight-oriented therapy, supportive therapy) to address underlying problematic beliefs about body image and food and to identify and address circumstances that provoke



food restriction or binge-eating/purging. Address associated or co-occurring disorders as indicated.

- Work with the family to enlist support for treatment and to address any underlying family difficulties. (See Interventions, Family, p. 242.)
- May provide group treatment.
- Assess for medication interventions as indicated for treatment of associated mood and anxiety symptoms or for stabilization of binge-eating/purging behaviors. (For the latter, selective serotonin-reuptake inhibitors [SSRIs] may be helpful and safely tolerated.)

5. For children and adolescents for whom hospital-based treatment is indicated, consider the following:

- The decision to hospitalize should include consideration of (1) any rapid or persistent decline in the child's or adolescent's oral intake, (2) a decline in the child's or adoles-

cent's weight despite intensive outpatient treatment, (3) the presence of stressors that may interfere with the child's or adolescent's ability to eat, (4) prior knowledge of the weight at which medical instability is likely to occur, and (5) any co-psychiatric problems (e.g., major depressive disorder, substance use disorder) that merit hospitalization (American Psychiatric Association, 2000b). The prognosis for recovery is improved if an indicated hospitalization occurs before the onset of medical instability as manifested by abnormal vital signs.

- Immediate admission to a medical service or joint medical/psychiatric service specializing in eating disorders is indicated for unstable medical conditions such as
 - Heart rate less than 50
 - Postural hypotension
 - Cardiac instability
 - Loss of greater than 25 percent of ideal body weight
 - Serum potassium less than 3 milliequivalents per liter with abnormal ECG
 - Metabolic alkalosis
 - Severe dehydration
 - Uncontrollable binge-eating and purging
 - Acute food refusal
- Immediate admission to psychiatric service or joint psychiatric/medical service specializing in eating disorders is indicated for
 - Suicidal ideation
 - Psychiatric symptoms resulting in inability to eat

- Failure to adhere to outpatient treatment plan and predetermined goals
- Day hospitalization may be effective as an intermediate level of treatment and as a transition from hospital to home.

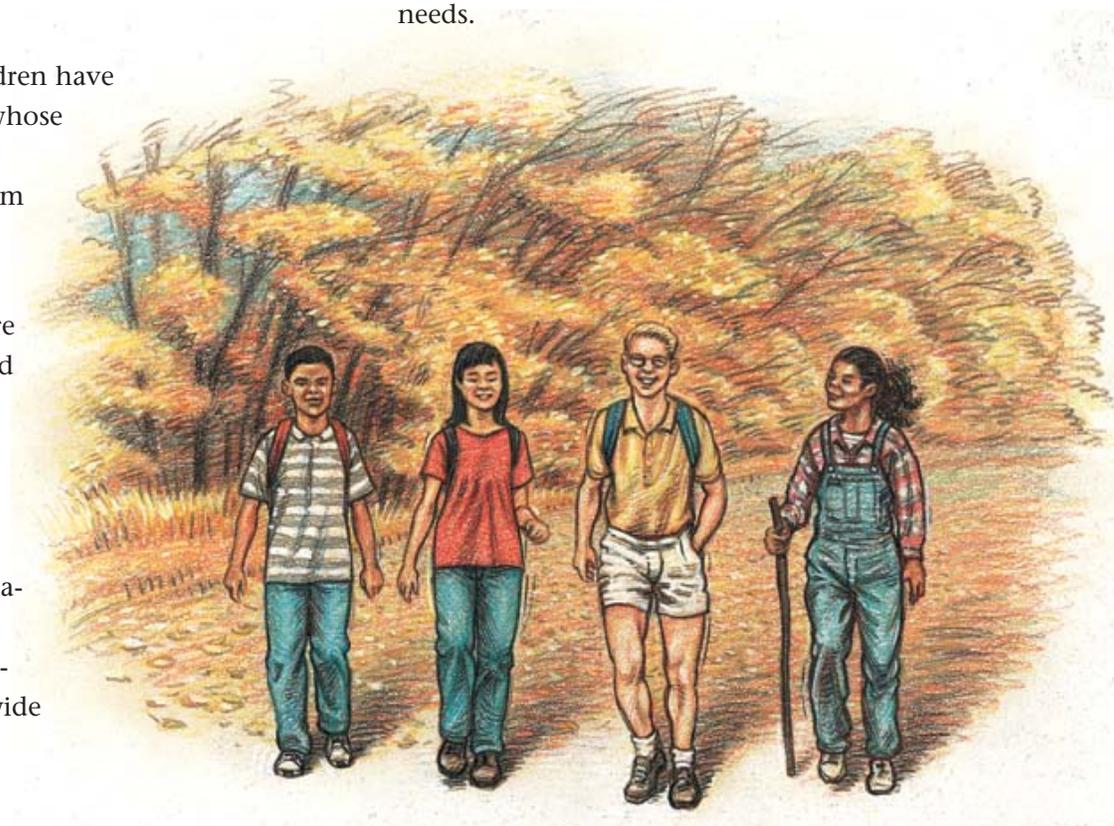
Family

1. Help families promote a positive body image and a healthy attitude toward eating for their child or adolescent.
 - Emphasize the importance of family meals. Encourage families to eat meals together as often as reasonably possible.
 - Encourage parents to
 - Avoid making critical comments about their own or others' bodies
 - Ensure that their children have positive role models whose body types differ (i.e., who do not all conform to the media ideal of thinness)
 - Focus on traits that are not appearance related
 - Discuss the reality behind media images of thin, glamorous models and actors
 - Discuss the overemphasis on thinness in our society and the importance of accepting a wide range of body types

2. For children and adolescents with eating disorders, research has shown family therapy to be effective (Steiner and Lock, 1998; Wiseman et al., 1998; Yager, 1996). Family therapy should focus on
 - Improving communication and decreasing critical comments
 - Decreasing ongoing conflicts
 - Supporting the child's or adolescent's eating and treatment plans

School

1. With appropriate permission, collaborate with school personnel to support the child or adolescent and to monitor her academic and physical needs.



2. Discuss guidelines for managing physical symptoms or behaviors with school health professionals and mental health professionals (e.g., when to contact you with concerns about vital signs; monitoring the child or adolescent after lunch to prevent purging).
3. Monitor the child's or adolescent's school performance, as poor nutrition may impair learning and concentration.

Resources for Health Professionals

- Childress AC, Brewerton TD, Hodges EL, et al. 1993. The Kids' Eating Disorder Survey (KEDS): A study of middle school students. *Journal of the American Academy of Child and Adolescent Psychiatry* 32(4):843–850.
- Kuczmarski RJ, Ogden CL, Grummer-Strawn LM, et al. 2000. CDC growth charts: United States. *Advance Data* 314:1–27. Hyattsville, MD: National Center for Health Statistics. Available at <http://www.cdc.gov/growthcharts>.
- Maloney MJ, McGuire JB, Daniels SR. 1988. Reliability testing of a children's version of the Eating Attitude Test. *Journal of the American Academy of Child and Adolescent Psychiatry* 27(5):541–543. This version of the Eating Attitude Test is for school-age children.
- Shore RA, Porter JE. 1990. Normative and reliability data for 11 to 18 year olds on the Eating Disorder Inventory. *The International Journal of Eating Disorders* 9(2):201–207. This article presents an eating disorder inventory and supporting data.

Resources for Families

Academy for Eating Disorders
6728 Old McLean Village Drive
McLean, VA 22101
Phone: (703) 556-9222
Fax: (703) 556-8729
Web site: <http://www.acadeatdis.org>

American Anorexia Bulimia Association
165 West 46th Street, Suite 1108
New York, NY 10036
Phone: (212) 575-6200
Fax: (212) 501-0342
Web site: <http://www.aabainc.org/home.html>

Anorexia Nervosa and Related Eating Disorders
P.O. Box 5102
Eugene, OR 97405
Phone: (541) 344-1144, (800) 931-2237
Web site: <http://www.anred.com>

Eating Disorders Prevention and Awareness
603 Stewart Street, Suite 803
Seattle, WA 98101
Phone: (206) 382-3587, (800) 931-2237
Fax: (206) 829-8501
Web site: <http://www.edap.org>

National Association of Anorexia Nervosa and Associated Disorders
P.O. Box 7
Highland Park, IL 60035
Phone: (847) 831-3438
Fax: (847) 433-4632
Web site: <http://www.anad.org>