Eating Disorders: Detection, Assessment, and Treatment in Primary Care
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ABSTRACT

PURPOSE: To review the epidemiology, diagnosis, and treatment of anorexia nervosa, bulimia nervosa, and binge eating disorder with a focus on early detection and practical interventions in primary care settings, as well as indications for referral to specialty care.

EPIDEMIOLOGY: Eating disorders are relatively common, with lifetime prevalence rates in women of 0.3% for anorexia nervosa, 1% to 2% for bulimia, and 3% for binge eating disorder.

REVIEW SUMMARY: Although food deprivation and excessive exercise are typically associated with anorexia nervosa and the restrict-binge-purge cycle with bulimia, combinations of these behaviors can occur in either disorder. Binge eating is characteristic of both bulimia and binge eating disorder but also can occur in the purging subtype of anorexia nervosa. This review presents useful screening tools and recommendations for intervention in primary care. Guidelines for coordination of care with mental health professionals and referral to inpatient behavioral specialty programs are reviewed. Long-term outcome studies suggest that 45% of patients with anorexia nervosa and 30% to 70% of those with bulimia have a favorable course. Although binge eating disorder has the most favorable outcome and often remits without treatment, weight loss remains a challenge in the treatment of this condition.

TYPE OF AVAILABLE EVIDENCE: Cross-sectional studies, case-control studies, cohort studies, and randomized controlled trials.

GRADE OF AVAILABLE EVIDENCE: Fair: bulimia and binge eating disorder; poor to fair: anorexia nervosa.

CONCLUSION: Primary care physicians are often the first to identify eating disorders, and are frequently involved in the management of eating disorders with mental health professionals. Greater awareness of the symptoms, complications, and treatment options for these disorders is needed, including familiarity with behavioral and psychotherapeutic interventions, management of medical complications, and adjunctive use of medications.

Once these behavioral disorders are established, secondary physiologic and psychologic effects serve to sustain them.

**Diagnostic Categories and Classification**

**Anorexia Nervosa (AN)**

AN is characterized by body weight at least 15% below normal for age and height, and is associated with intense fear of gaining weight or becoming overweight and denial of the seriousness of low body weight. Postpubertal female patients typically develop secondary hypogonadotrophic amenorrhea related to weight loss. In prepubertal girls, delayed puberty, stunting of growth and breast development, and primary amenorrhea are characteristic.

AN is further classified into 2 subtypes:

1) **Restricting type AN.** This is characterized by restricting food intake through excessive dieting or fasting, sometimes combined with excessive exercise.

2) **Binge-eating/purging type AN.** Here, individuals also engage in self-induced vomiting or the misuse of laxatives, diuretics, or enemas.

**Bulimia Nervosa (BN)**

BN is characterized by recurrent episodes of binge eating, occurring twice a week or more. Binges are defined by excessive consumption of food over a limited period of time accompanied by a sense of loss of control over eating. As with AN, there are 2 subtypes of BN:

1) **Purging type BN.** Binges are followed by inappropriate compensatory behavior to avoid weight gain, such as self-induced vomiting or misuse of laxatives, diuretics, enemas, or diet pills.

2) **Nonpurging type BN.** Characterized by the absence of purging. In this condition, binge eating is compensated for by intermittent fasting or excessive exercise alone.

Whereas the typical patient with AN is severely underweight, patients with BN are by definition of normal weight or overweight, since the diagnosis of purging type AN supersedes that of BN in underweight individuals.

**Eating Disorder Not Otherwise Specified**

A third classification, eating disorder not otherwise specified (EDNOS), is a catch-all category that includes all other psychologic eating disturbances that result in clinically significant functional impairment. The most common among these is BED, characterized by the same binge eating and sense of loss of control over eating seen in BN, but without the use of compensatory behaviors to prevent weight gain. Thus, individuals with BED tend to be overweight. Other eating disorders include partial syndrome AN or BN (eg, patients with some, but not all of the characteristics of AN or who exhibit bulimic behaviors, but with less frequency than that required for the diagnosis of BN). A variety of atypical eating disorders can also occur, such as fear of swallowing (globus hystericus), which may also result in marked weight loss and functional impairment.

From a clinical standpoint, given the overlap of symptoms, behaviors, and characteristics amongst eating disorders, it is useful to view AN and BN, not in terms of distinct categories, types, and subtypes, but rather as a spectrum of related dieting disorders. It is not uncommon for patients to move from one to another of these diagnostic categories over time, with the most common progression being from a restricting anorexic pattern to either purging type AN or BN.

**Epidemiology**

The estimated lifetime prevalence of all clinically significant eating disorders—including partial syndrome AN and BN—among females 10 to 19 years of age is at least 5%. Partial-syndrome cases are more common than full-syndrome AN or BN, however their associated medical and psychiatric morbidity is often equally severe. Whether the incidence of AN, BN, and other eating disorders is increasing remains unclear, although evidence for a steady rise in detected cases of AN between 1975 and 1984 suggests that, at least for this diagnosis, community rates are increasing. Prevalence of AN across epidemiologic studies is 0.3% for young women, with an incidence of 8/100 000 persons per year. Prevalence of BN is higher, averaging 1% for young women, with an incidence of 12/100 000. The estimated lifetime prevalence of BED is 2% in an epidemiologic community sample, although 25% of those seeking treatment for obesity at a weight loss clinic meet criteria for the diagnosis. Epidemiologic reports suggest that the gender difference in prevalence of BED is less pronounced than it is for AN and BN. Whereas 90% of patients with AN or BN are female, as many as 40% of patients with BED are male.

Among the few studies that have examined differences in eating disorders across ethnic groups, findings suggest that AN, BN, and BED are all more common in white women than in African Americans, with AN in particular being rare in the African American population. African Americans are more likely to have eating disorders characterized by binging, such as BN and BED. Additionally, the perception of being overweight—whether true or false—seems to be a risk factor for eating disorders in white women, whereas in African Americans, actually being overweight is a risk factor for developing an eating disorder.
Table 1. Signs and Symptoms of Anorexia Nervosa (AN) and Bulimia Nervosa (BN)

<table>
<thead>
<tr>
<th>AN</th>
<th>BN or AN (purging type)</th>
</tr>
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<tbody>
<tr>
<td>• Dry skin, lanugo hair, scalp hair loss</td>
<td>• Perioral acne</td>
</tr>
<tr>
<td>• Cold intolerance, hypothermia</td>
<td>• Parotid gland enlargement</td>
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<tr>
<td>• Cyanotic hands and feet</td>
<td>• Dental caries and erosion (lingual surface of teeth)</td>
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<tr>
<td>• W eakness, fatigue (despite high physical activity)</td>
<td>• Orthostatic hypotension and dehydration</td>
</tr>
<tr>
<td>• Sinus bradycardia, orthostatic hypotension</td>
<td>• Presyncopal and syncopal symptoms</td>
</tr>
<tr>
<td>• Presyncopal and syncopal episodes</td>
<td>• Heartburn, gastroesophageal reflux</td>
</tr>
<tr>
<td>• Early satiety</td>
<td>• Muscle cramps and paresthesias (from electrolyte abnormalities)</td>
</tr>
<tr>
<td>• Bloating</td>
<td>• Diarrhea and constipation (laxative abusers)</td>
</tr>
<tr>
<td>• Constipation</td>
<td>• Cardiac arrhythmias</td>
</tr>
<tr>
<td>• Primary or secondary amenorrhea</td>
<td>• Oligomenorrhea or amenorrhea</td>
</tr>
<tr>
<td>• Peripheral neuropathy</td>
<td>• Nausea and vomiting</td>
</tr>
<tr>
<td>• Decreased bone density, fractures</td>
<td>• Muscle cramps and paresthesias</td>
</tr>
<tr>
<td>• Muscle wasting and cachexia</td>
<td>• Heartburn, gastroesophageal reflux</td>
</tr>
<tr>
<td>• Nose bleeds, bruising (thrombocytopenia)</td>
<td>• Presyncopal and syncopal symptoms</td>
</tr>
</tbody>
</table>

Table 2. Evaluation of the Patient With an Eating Disorder

A: Screening Tools

**SCOFF**\(^{16}\)

- Do you make yourself *sick* because you feel uncomfortably full?
- Do you worry you have lost control over how much you eat?
- Have you lost more than *one* stone (14 lbs) over the last 3 months?
- Do you believe yourself to be *fat* when others say you are thin?
- Would you say you are *thin* because you have had an eating disorder?

* Cut off: 2 or more abnormal responses have sensitivity of 100%, specificity of 87.5%, for an eating disorder.

**ESP** (Eating Disorder Screen for Primary Care)\(^{17}\)

- Are you satisfied with your eating patterns?
- Do you ever eat in secret?
- Does your weight affect how you feel about yourself?
- Has anyone in your family ever suffered with an eating disorder?
- Do you currently suffer with or in the past have you suffered with an eating disorder?

* Cut off: 2 or more abnormal responses have sensitivity of 100%, specificity of 71%, for an eating disorder.

B: Initial Laboratory Tests

- Serum electrolytes and liver function tests
- Complete blood count
- Urinalysis and specific gravity
- Thyroid-stimulating hormone
- Baseline electrocardiogram
- Bone mineral density scan if underweight \(\approx 6\) months
- Urine pregnancy test

**Diagnosis**

Since most patients with AN or BN are unlikely to enter the primary care physician’s office admitting to disordered eating, clinical observation and assessment are particularly important to diagnosis. Signs and symptoms of AN and BN are listed in Table 1. Table 2A outlines 2 brief screening questionnaires, with similar sensitivities and specificities, designed for use in a primary care setting. A positive screen should be followed by clarifying questions. These should address desired weight (“What would you like to weigh?”); percentage of time spent preoccupied with thoughts of food, weight, or shape; typical daily intake (“What did you eat yesterday for breakfast, lunch, and dinner?”); time spent exercising; and frequency of binging, vomiting, and laxative, diuretic, and diet pill abuse in the prior month. The physical examination should include measurement of weight and height and calculation of body mass index (BMI, weight [kg]/height\(^2\) [m]). A BMI of less than 18 should raise suspicion for AN.\(^{14}\) Screening tests and an electrocardiogram should be performed in any underweight patient or in patients who purge regularly, since they are at elevated risk for electrolyte abnormalities and cardiac arrhythmia (Table 2B). Most patients with AN or BN will desire to be a weight that is below normal for their height. Other behaviors suggestive of these disorders include recent change to vegetarianism, refusal to eat meals with others, social isolation, and dressing to conceal the body.\(^{15}\) Two questions that have been shown to be very sensitive when posed by primary care physicians are “Do you ever eat in secret?” and “How satisfied are you with your eating habits?”\(^{16}\)

**Development and Maintenance of Eating Disorders**

Increased public awareness of eating disorders and/or their symptoms may partially account for the rise in reported cases of AN; however, sociocultural factors, including the commercial media’s emphasis on a thin ideal and the increased dieting and unhealthy weight loss behaviors in young women and adolescents are also likely to play a role. Reading women’s magazines and listening to the radio more than once per week have been prospectively associated with a higher likelihood of developing eating disorders in 2509 young girls.\(^{17}\) In addition, a recent survey of 15 000 high school students found that in the prior month 19% of girls had fasted 24 hours or more, 11% had taken diet pills, and more than 7% had either taken laxatives or vomited to control their weight.\(^{18}\) Dieting has been described as “necessary if not sufficient” for the development of an eating disorder. In one large Australian cohort study of middle school students, female teenagers who scored in the upper tertile on the
adolescent dieting scale were 18 times more likely to develop an eating disorder than their peers who scored in the lowest tertile over a 3-year follow-up period. Furthermore, several prospective studies have found that engaging in weight loss behaviors predicted later obesity even after controlling for baseline weight. In the Growing Up Today study of 6000 teens, frequent dieters were 4.8 times as likely as never dieters to become overweight over a 3-year follow-up period. These findings were independent of both baseline and maternal BMI.

It should be noted, however, that sociocultural emphasis on a thin ideal and pressure to diet are not sufficient explanations for the onset of AN or BN, since they fail to explain why only a small minority of individuals with body dissatisfaction and dieting behavior progress to a clinical eating disorder. Additional individual risk factors must characterize this vulnerable population and are best thought of as falling into 3 categories: predisposing factors, precipitating factors, and maintaining factors.

**Predisposing Factors**

Eating disorders tend to run in families, suggesting a genetic vulnerability. For AN, heritability has been estimated to be as high as 70%, whereas it is more moderate for binge eating, on the order of 49%. A mutation in the melanocortin-4 receptor gene thought to be involved in appetite regulation was recently associated with binge eating in obese individuals. Susceptibility genes for AN may code for personality traits that increase vulnerability to developing and maintaining severely restrictive eating behaviors. Research has shown that individuals with AN are frequently perfectionistic, introverted, overachievers who are self-doubting and sensitive to criticism.

Individuals with AN tend to be able to delay gratification and work toward distant goals, and have the perseverance to withhold meals once they begin dieting. In other respects these same personality traits are adaptive and help explain why affected individuals are often very successful in other realms, such as academics and athletics. A recent comprehensive 2-step, case-controlled study of all elite Norwegian athletes included a questionnaire followed by structured clinical interview of all individuals whose scores on a self-report instrument placed them in the at-risk category. The study revealed a 20% prevalence of eating disorders among elite female athletes vs 9% in an age-matched random sample of the general population. Rates of prevalence were highest in sports that emphasized a lean shape and body weight (e.g., gymnastics, figure skating, dance, and diving).

**Precipitating Factors**

In as many as 60% of cases of both AN and BN, a significant stressor is reported to have occurred in the year of onset of the eating disorder. Stressors can be both negative and positive (e.g., an illness or parental divorce, or an impending wedding that prompts dieting behaviors).

**Maintaining Factors**

Once an eating disorder takes hold, various factors contribute to its maintenance. Consequences of deliberate starvation including delayed gastric and intestinal transit times, obsessive preoccupation with food, ritualistic eating, and hyperactivity all serve to maintain anorexic behavior. Similarly in bulimia, engaging in the restrict-binge-purge cycle can result in physiologic changes, including delayed gastric emptying and gastroesophageal reflux, which contribute to early satiety or urges to vomit. Psychiatric comorbidity may also sustain an eating disorder. Major depression is diagnosed in approximately 60%, and anxiety and substance abuse in about 30%, of patients admitted to hospitals for eating disorders. Diabetes is a potential comorbid medical condition of importance to primary care providers; diabetic patients with eating disorders often underestimate their insulin in order to excrete more glucose and may repeatedly present to the emergency room in diabetic ketoacidosis. Any young woman with “brittle diabetes” should be screened for an occult eating disorder.

**Complications and Risks**

The majority of physiologic complications and risks associated with eating disorders result from either starvation or from purging behaviors. Thus, individuals who are both underweight and who binge and purge are at highest risk for complications. Among purging anorexic patients, mortality rates are high. Long-term studies have shown that 5% to 18% of patients ever admitted to a hospital for treatment of AN die prematurely; approximately 50% by suicide and 50% due to cardiac arrhythmia or other medical complications.

**Metabolic**

Hypokalemia and acid-base imbalances resulting from vomiting or laxative abuse are associated with potentially lethal heart arrhythmias and sudden death. Since it is unusual for a young woman to present with hypokalemia, patients with low potassium should always be questioned regarding an eating disorder.

**Cardiovascular**

Bradycardia, prolonged QTc interval, and hypotension are frequent complications of underweight. Asymptomatic heart rates in the 40s and 50s are common, however, a heart rate in the 30s or a QTc >500 msec warrants inpatient admission. Orthostatic hypotension is seen in patients who are dehydrated from vomiting or laxative or diuretic abuse, and in
those who restrict fluids to lower their weight. Care should be taken to assess fluid status and replenish volume orally or intravenously. Intravenous hydration should be done cautiously since very underweight patients or those who abuse laxatives or diuretics are at high risk of refeeding edema with the potential for congestive heart failure in extreme cases.

**Musculoskeletal**

Complications include osteopenia or osteoporosis and muscle wasting related to underweight. Osteoporosis occurs early in AN: within 6 months to 2 years of loss of menses. Controversy exists as to whether this osteoporosis is reversible. Drinkwater et al found that lowered bone mineral density was partially reversible with weight gain, but did not revert to normal. Data from Bachrach et al shows an increase in bone mass with weight gain, but persistent osteopenia in 8 of 15 patients. Anorexic patients who do not gain weight show no benefit from treatment with estrogen therapy.

**Gastrointestinal**

Complications related to underweight include slowing of the entire gastrointestinal (GI) tract, resulting in delayed gastric emptying and constipation. Patients who induce vomiting can also develop delayed gastric emptying and reflux esophagitis as well as bilateral parotid gland enlargement. Laxative abusers often develop dependence and, among extreme abusers, rectal prolapse and kidney failure can occur. In a study of anorexic patients, Waldholtz et al found that weight restoration was associated with a marked decrease in GI complaints. These findings confirm that refeeding, not medication, is the clinically indicated treatment for GI complaints associated with eating disorders—an important message to convey to patients.

**Endocrine**

Underweight is associated with hypogonadotrophic amenorrhea, characterized by a prepubertal hormonal profile with low gonadotrophin-releasing hormone, follicle-stimulating hormone, luteinizing hormone, and estradiol. Anorexic patients frequently have high cortisol levels, which may explain why estrogen is not protective against osteoporosis in these patients. Additionally, they may present with a sick euthyroid syndrome marked by low T4 or T3 but normal thyroid-stimulating hormone levels.

**Reproductive**

Infertility in AN is usually the result of hypogonadotrophic amenorrhea, and reverses with weight restoration and dietary fat intake. One study of 66 infertility clinic patients found that 7.6% met diagnostic criteria for AN or BN. If EDNOS were included, this number rose to 16.7%. Among those infertile women with amenorrhea or oligomenorrhea, 58% had eating disorders. Because women often fail to disclose eating disorders to their gynecologists and may appear to be of normal weight, the authors recommend that a nutritional and eating disorder history be taken in this patient population, particularly in the presence of menstrual abnormalities.

**Treatment**

When visiting a primary care physician, patients with eating disorders are likely to present with a variety of other chief complaints: amenorrhea, GI symptoms, or depression that are secondary complications of their abnormal eating habits. The clinician’s challenge is to identify the disordered eating behavior and redirect patient focus away from their feelings and preoccupations (eg, fear of weight gain or desire to lose weight) toward interrupting driven dieting and/or binging behaviors. In the case of AN and BN, successful treatment can be viewed as a process of conversion—from viewing dieting as the solution to recognizing it as the underlying problem. Even in the face of serious, potentially life-threatening complications, most patients with eating disorders exhibit ambivalence toward changing their behavior. For this reason (though it may be possible for primary care physicians to prompt change in patients with eating disorders), referral to psychiatrists or other mental health professionals who specialize in the treatment of behavioral disorders is often warranted. Referral ideally should be to a professional specialized in cognitive-behavioral therapy (CBT), the modality shown to be most effective in the treatment of both BN and BED.

Due to the frequent comorbidity between eating disorders and other psychiatric conditions, especially mood and anxiety disorders, referral to a psychiatrist for psychotropic medication should be considered. Goals of treatment include medical stabilization, normalization of eating behavior, and, in the case of underweight patients, weight restoration. Simple outpatient interventions for AN and BN are described in Table 3. For patients with BED the initial treatment goal is to normalize eating behavior, introduce a healthy exercise routine, and stabilize weight. Most specialists believe that weight management strategies and low-calorie diets should be avoided until binging behavior has remitted. Referral to a nutritionist and exercise physiologist is helpful.

Patient role induction is important in order to clarify expectations for patient behavior and to encourage patients to become active participants in the change process. This psychotherapeutic task is one that primary care physicians can begin when they first diagnose an
eating disorder. Role induction should start with a summary of the consequences of the eating disorder—physical, psychological, and social—that the provider has been able to elicit. Common examples include health problems, anxiety, depression, preoccupation with food and weight, familial disruption, social isolation, job loss, lowered self-esteem, and difficulty with intimacy. The goal is to maintain an empathic stance and to stigmatize the abnormal eating behavior, not the patient.

Most individuals begin treatment feeling unready to cease all dieting or abnormal eating behavior. Some patients may prefer to focus on talking about underlying reasons for their eating disorders and believe they need to explore these before they can initiate change. Such an approach is essentially a rationalization and should be confronted. Patients may prefer to talk rather than change, as is often the case with addiction, yet ultimately only stopping the behavior will lead to recovery.

It is therefore helpful to normalize ambivalence toward treatment and to encourage the patient to start making changes immediately, rather than waiting until she or he feels comfortable with the idea of giving up the behavior. Confidence in the recovery process increases with mastery over behavioral change. Patients should be informed that body dissatisfaction and urges to engage in disordered eating behavior are likely to persist for several months after ceasing such behavior, but that these feelings will eventually subside.

For adolescent patients, family involvement in preparing and portioning meals is important to recovery. Parents should be charged explicitly with structuring mealtimes, diversifying their child’s food repertoire, and portioning foods. This is especially true in the case of AN and BN. Parents frequently accommodate their child’s requests by serving diet and fat-free foods. Parents may blame themselves for their child’s eating disorder and should be reassured that the etiology of these disorders is multifactorial and not the result of poor parenting. However they also should be informed that how they respond to the condition once it is established affects the likelihood of recovery.

**Therapeutic Modalities and Evidence-Based Studies**

**Cognitive Behavioral and Interpersonal Therapy**

Individual outpatient cognitive behavioral and interpersonal therapy are both effective in the treatment of BN. Group CBT and group interpersonal therapy have both been effective at interrupting BED but results are disappointing for weight loss. Self-help manuals based on CBT are effective as a primary intervention for BN and are a useful resource for primary care physicians. Although weight restoration is necessary if not sufficient for recovery from AN, there are few controlled trials of psychologic treatments for underweight acute AN and these are plagued by methodologic problems and high drop-out rates. Clinical experience supports inpatient behavioral therapy as the most effective intervention for weight restoration in adult AN, though relapse is common. A recent controlled trial demonstrated efficacy for individual CBT in relapse prevention after weight restoration.

**Family Therapy**

Data from randomized controlled trials have shown that outpatient family therapy is effective for treating younger patients (<19 years) with nonchronic AN. In older patients, family therapy has not been found to be effective.

**Medication**

In the treatment of BN, antidepressants—in particular fluoxetine—have been shown to be somewhat effective although less so than CBT. High-dose fluoxetine (60 mg/d) reduces binging and vomiting; this effect appears

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**Table 3. Simple Outpatient Interventions for Anorexia Nervosa and Bulimia**

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<tr>
<th>Intervention</th>
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<tr>
<td>Weigh patient at weekly visits</td>
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<tr>
<td>Set target weight for underweight patients (minimum BMI of 20)</td>
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<tr>
<td>Assess medical status (see Table 2B)</td>
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<tr>
<td>Involve family and social supports</td>
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<tr>
<td>Educate patient and family about normal eating behavior (3 meals, no diet foods, expand food repertoire)</td>
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<tr>
<td>Instruct on self-monitoring using a food log, and review logs weekly with patient</td>
</tr>
<tr>
<td>Identify triggers for abnormal eating and practice alternate healthy behaviors</td>
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<tr>
<td>Challenge irrational beliefs and cognitive distortions</td>
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<tr>
<td>Treat comorbid psychiatric conditions</td>
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<tr>
<td>Set specific treatment goals for the first 6 to 8 weeks (eg, weekly weight gain of 1 to 2 lbs, or reduce purging by 50%, etc)</td>
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**Table 4. When to Refer for Admission to an Inpatient Eating Disorders Program**

<table>
<thead>
<tr>
<th>Condition</th>
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<tr>
<td>Failure to meet outpatient treatment goals (eg, continued weight gain in an underweight patient or significant decrease in binge/purge behaviors in bulimia)</td>
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<tr>
<td>Body mass index of &lt;13: severely underweight patients are unlikely to respond to outpatient treatment and are frequently medically unstable</td>
</tr>
<tr>
<td>Medical instability</td>
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<tr>
<td>- Hypokalemia</td>
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<tr>
<td>- Symptomatic orthostatic hypotension</td>
</tr>
<tr>
<td>- Hypothermia with temperature &lt;97°F</td>
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<tr>
<td>Suicidal ideation or other serious psychiatric comorbidity (eg, substance dependence)</td>
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to be independent of its action as an antidepressant.\textsuperscript{51} Several other selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants also are effective, though for patients with BN and other self-injurious behaviors, tricyclics should be avoided due to the potential for lethal overdose.\textsuperscript{52} Bupropion is similarly contraindicated in patients who induce vomiting, due to an increased risk of seizures in individuals at risk for electrolyte imbalances and dehydration.\textsuperscript{52} No medication has been shown to facilitate weight gain in AN.\textsuperscript{52} The depressive symptoms that often accompany AN are usually a function of underweight and poor nutrition and improve with refeeding. Some patients however, especially those with a personal or family history of depression that preceded onset of AN, may require treatment with antidepressants for a comorbid affective condition. Research is currently under way to evaluate use of the antipsychotic olanzapine in the treatment of AN. Use of olanzapine is believed to increase appetite, but in AN, its potential therapeutic value may also derive from its anxiolytic action. Limited data are available for BED, but topiramate,\textsuperscript{53} SSRIs, and other antidepressants as well as appetite suppressants have been found to be effective in decreasing binge eating frequency although weight loss with these agents is often disappointing.\textsuperscript{5}

**Inpatient Specialty Care**

If specified treatment goals are not achieved, despite a team approach including referral to an outpatient eating disorder specialist, or if the patient becomes medically unstable, referral to a behavioral inpatient eating disorders program is recommended (Table 4). Although behavioral treatment programs differ somewhat in their approach, most use a combination of behavior therapy and cognitive approaches. One example of such inpatient programs is the Johns Hopkins Eating Disorders Program, which employs a behavioral protocol, nursing observation, and group peer pressure to block eating disordered behavior. Patients are expected to complete meals and are exposed to a wide range of foods to broaden their food repertoire. Bathroom use is supervised to prevent vomiting, and exercise is restricted. Patients progress through a hierarchy of tasks involving increasing independence over normal eating while attending daily group therapy. Group leaders focus group content on recovery and encourage supportive confrontation between patients. Given the ambivalence toward treatment that is characteristic of AN and many cases of BN, a significant proportion of hospitalized patients consent to admission only under pressure from their families, healthcare providers, or employers. Nonetheless, within 2 weeks of admission, most individuals report increased insight and motivation to change and acknowledge their need for continued treatment.\textsuperscript{54} This conversion in beliefs leads to the eventual recognition of eating behavior as the cause of one’s lowered self-esteem and functional impairment.

**Outcomes**

A review of the literature reveals that at long-term follow-up in clinical populations approximately 45% of patients recover from AN. About 30% experience episodic disturbances, and approximately 20% to 25% show a chronic or deteriorating course.\textsuperscript{55} Estimates of recovery rates for patients with BN span a broader range: 30% to 70% of patients treated in outpatients settings recover. The picture is more guarded for hospitalized patients, with recovery rates of 13% to 40%. One reason for this might be that inpatients have more severe impairment or higher comorbidity rates than patients treated in outpatient settings.\textsuperscript{56} Long-term outcome studies of BED are lacking, although a community study by Fairburn et al suggests that the disorder has a high rate of spontaneous remission.\textsuperscript{57}

**Conclusion**

Eating disorders are relatively common, especially among female adolescents and young women. Early recognition followed by appropriate interventions by mental health professionals can help prevent progression to chronic illness. Although not all patients with disordered eating patterns meet the diagnostic criteria for AN or BN, patients with partial syndromes may still be at significant risk for medical complications and patients with BED are at risk for complications associated with increasing obesity. As a familiar and trusted health provider, the primary care physician is in a unique position to recognize problem behaviors, encourage behavioral change, coordinate care with appropriate mental health professionals, and offer continuing support to the patient and her family.

**References**
