Screening for Eating Disorders in Adolescents and Adults
US Preventive Services Task Force Recommendation Statement

US Preventive Services Task Force

**IMPORTANCE** Eating disorders (eg, binge eating disorder, bulimia nervosa, and anorexia nervosa) are a group of psychiatric conditions defined as a disturbance in eating or eating-related behaviors that impair physical or psychosocial functioning. According to large US cohort studies, estimated lifetime prevalences for anorexia nervosa, bulimia nervosa, and binge eating disorder in adult women are 1.42%, 0.46%, and 1.25%, respectively, and are lower in adult men (anorexia nervosa, 0.12%; bulimia nervosa, 0.08%; binge eating disorder, 0.42%). Eating disorder prevalence ranges from 0.3% to 2.3% in adolescent females and 0.3% to 1.3% in adolescent males. Eating disorders are associated with short-term and long-term adverse health outcomes, including physical, psychological, and social problems.

**OBJECTIVE** The US Preventive Services Task Force (USPSTF) commissioned a systematic review to evaluate the benefits and harms of screening for eating disorders in adolescents and adults with a normal or high body mass index. Evidence limited to populations who are underweight or have other physical signs or symptoms of eating disorders was not considered. The USPSTF has not previously made a recommendation on this topic.

**POPULATION** Adolescents and adults (10 years or older) who have no signs or symptoms of eating disorders (eg, rapid weight loss, weight gain, or pronounced deviation from growth trajectory; pubertal delay; bradycardia; oligomenorrhea; and amenorrhea).

**EVIDENCE ASSESSMENT** The USPSTF concludes that the evidence is insufficient to assess the balance of benefits and harms of screening for eating disorders in adolescents and adults. The evidence is limited and the balance of benefits and harms cannot be determined.

**RECOMMENDATION** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for eating disorders in adolescents and adults. (I statement)


**SUMMARY OF RECOMMENDATION**

| Asymptomatic adolescents and adults | The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for eating disorders in adolescents and adults. | I |

See the Summary of Recommendation figure.

**Importance**
Eating disorders (eg, binge eating disorder, bulimia nervosa, and anorexia nervosa) are a group of psychiatric conditions defined as a disturbance in eating or eating-related behaviors that impair physical or psychosocial functioning. The prevalence of eating disorders in the US has not been well studied; thus, current rates may underestimate the true burden of disease. According to large US cohort studies, estimated lifetime prevalences for anorexia nervosa, bulimia nervosa, and binge eating disorder in adult women are 1.42%, 0.46%, and 1.25%, respectively, and are lower in adult men (anorexia nervosa, 0.12%; bulimia nervosa, 0.08%; binge eating disorder, 0.42%). Eating disorder prevalence ranges from 0.3% to 2.3% in adolescent females and 0.3% to 1.3% in adolescent males. Eating disorders are associated with short-term and long-term adverse health outcomes, including physical, psychological, and social problems.
Definitions of Eating Disorders
Common eating disorders and their key diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition)² include the following.

- Anorexia nervosa: Restriction of energy intake relative to requirements, leading to significantly low weight for age, sex, and developmental trajectory; intense fear of gaining weight or becoming fat; disturbance in the way body weight or shape is experienced.

- Bulimia nervosa: Recurrent episodes of binge eating characterized by eating a larger amount of food than the amount that most persons would eat and a sense of lack of control over eating during the episode; recurrent inappropriate compensatory behaviors to prevent weight gain (eg, self-induced vomiting and laxative misuse); undue influence of body shape and weight on self-evaluation.

- Binge eating disorder: Recurrent episodes of binge eating and marked distress about binge eating episodes.

- Other specific feeding and eating disorder: Eating or feeding disturbance (eg, atypical anorexia nervosa, bulimia nervosa, or binge eating disorder of low frequency or limited duration; purging disorder; and night eating syndrome) that causes clinically significant distress or impairment but does not meet the full criteria for the disorders in this diagnostic class; in the published literature, persons meeting criteria for this disorder are often categorized as having a “subthreshold” diagnosis for another eating disorder based on endorsement of key behaviors (eg, binge eating) that fall short of the required frequency and duration thresholds.

Assessment of Risk
Risk factors for eating disorders include various biological, psychological, social, and environmental factors, such as trauma, childhood adversity, perfectionism, rigidity, or social pressure related to appearance.³,⁴,⁵ Various populations are at increased risk for eating disorders, such as athletes, females, and younger adults (aged 18 to 29 years).⁶,⁷,⁸ Eating disorders also vary by race and ethnicity and sexual orientation and gender identity. White populations have higher rates of anorexia nervosa; bulimia nervosa is more prevalent among Asian, Black, and Hispanic/Latino persons than White persons.⁹,¹⁰ Transgender adolescents and young adults have higher rates of self-reported eating disorder diagnoses than cisgender heterosexual females.¹¹ There is an increased incidence of eating disorders among persons with comorbid psychiatric conditions, including depression, obsessive-compulsive disorder, substance use disorders, and anxiety disorders.¹² Genetic heritability may also contribute to the risk of developing anorexia nervosa or bulimia nervosa.¹³,¹⁴,¹⁶

Screening Tests
Assessment of weight, height, and body mass index (BMI) is considered the standard of care in primary care settings, and changes in growth or weight may lead to detection of some eating disorders. For persons without obvious physical symptoms or signs of eating disorders, screening questionnaires are available that could be used in primary care settings, including the Eating Disorder Screen for Primary Care (EDS-PC), Screen for Disordered Eating, and the

Table. Summary of USPSTF Rationale

<table>
<thead>
<tr>
<th>Rationale</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection</td>
<td>• There is adequate evidence on the accuracy of the SCOFF questionnaire for screening for eating disorders in adult females; evidence is inadequate for adolescents, males, and other specific populations. • There is inadequate evidence about the accuracy of other screening tests in adults and adolescents.</td>
</tr>
<tr>
<td>Benefits of early detection and intervention and treatment (based on direct or indirect evidence)</td>
<td>• There is no direct evidence that screening for eating disorders in adolescents and adults improves health outcomes. • There is inadequate evidence on the effectiveness of interventions for improving health outcomes in screen-detected adolescents and adults with eating disorders.</td>
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<tr>
<td>Harms of early detection and intervention and treatment</td>
<td>• There is inadequate direct evidence on the harms of screening for eating disorders in adolescents and adults. • Overall, there is adequate evidence to bound the harms of screening for and treatment of eating disorders in adolescents and adults as no greater than small, based on noninvasive screening, the nature of therapy interventions, and the low likelihood of serious harms from pharmacotherapy.</td>
</tr>
<tr>
<td>USPSTF assessment</td>
<td>The benefits and harms of screening for eating disorders in adolescents and adults are uncertain, and the balance of benefits and harms cannot be determined.</td>
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SCOFF questionnaire. (Some experts do not consider SCOFF an acronym since questions are based on specific terminology from each of the signaling questions [eg, “Have you recently lost more than One stone in a 3 month period?”].) 1,13

**Treatment or Interventions**

Persons suspected of having an eating disorder are typically referred to specialists for diagnostic evaluations and treatment.1 Treatment for eating disorders in symptomatic persons generally involves an interdisciplinary approach encompassing psychological/behavioral, medical, and nutritional components. Treatment may vary based on the severity of the disorder. Psychological approaches used include cognitive behavioral therapy, interpersonal psychotherapy, and dialectical behavior therapy. Two medications have US Food and Drug Administration approval for treatment of an eating disorder: lisdexamfetamine for binge eating disorder treatment and fluoxetine for bulimia nervosa treatment. Other psychotropic medications are used to treat eating disorder symptoms as well as comorbid psychiatric conditions (eg, depression and anxiety) but are not always indicated. Medical management focuses on addressing physical and medical complications of eating disorders (eg, cardiac instability, musculoskeletal injury, and endocrine function).1,16,17

**Suggestions for Practice Regarding the I Statement**

**Potential Preventable Burden**

Eating disorders can lead to physical complications affecting many organ systems; complications differ by diagnosis. Complications from anorexia nervosa are attributed to weight loss and malnutrition (eg, low bone density/fractures, symptomatic bradycardia/hypotension, and gastroparesis).1,18 Binge eating disorder is associated with higher rates of obesity and related metabolic disorders.
than other eating disorders.1,19 Bulimia nervosa is associated with complications due to purging, such as cardiovascular problems (eg, arrhythmias and cardiac failure), electrolyte disturbances, pancreatitis, gastric erosions or perforations, dental erosion, and kidney injury.18 Eating disorders have also been associated with disturbances in cognitive and emotional functioning and psychiatric conditions (ie, mood, anxiety, and substance abuse disorders).12,20 Persons with eating disorders have higher mortality rates than the general population, particularly those with anorexia nervosa.21

Potential Harms
Potential harms of screening questionnaires include false-positive screening results that lead to unnecessary referrals (and associated time and financial costs), treatment, labeling, anxiety, and stigma. Pharmacologic interventions may result in adverse events such as dry mouth, headache, and insomnia (lisdexamfetamine); paresthesia and taste perversion (topiramate); or insomnia, nausea, and tremor (selective serotonin reuptake inhibitors [SSRIs]). Psychological interventions are likely to have minimal harms.1

Current Practice
Assessing weight, height, and BMI is standard care in primary care settings, and changes in growth or weight may result in the detection of some eating disorders. Patients without observable physical symptoms may go unrecognized as having an eating disorder, or symptoms may be attributed to other conditions.1 Various guidelines mention screening in the context of monitoring for potential signs and symptoms of eating disorders or to promote awareness of eating disorder symptoms in populations who may be at risk (eg, adolescents and young female athletes). No recent estimates of screening rates have been found in the literature.1

Other Related USPSTF Recommendations
The USPSTF recommends screening for depression in adults, including pregnant and postpartum persons (B recommendation).22 The USPSTF also recommends screening for depression in adolescents aged 12 to 18 years (B recommendation) and found insufficient evidence to recommend for or against screening in children 11 years or younger (I statement).23 The USPSTF recommends counseling interventions for pregnant and postpartum persons who are at increased risk of perinatal depression (B recommendation).24

The USPSTF recommends offering or referring adults with a BMI of 30 or greater (calculated as weight in kilograms divided by height in meters squared) to intensive, multicomponent behavioral interventions to improve important health outcomes.25 The USPSTF also recommends that clinicians screen children and adolescents 6 years or older for obesity and offer or refer them to comprehensive, intensive behavioral interventions to promote improvements in weight status.26

Supporting Evidence
Scope of Review
The USPSTF commissioned a systematic review1,27 to evaluate the benefits and harms of screening for eating disorders in adolescents and adults with a normal or high BMI. Evidence limited to populations who are underweight or have other physical signs or symptoms of eating disorders was not considered. The USPSTF has not previously made a recommendation on this topic.

Accuracy of Screening Tests and Risk Assessment
Seventeen studies (10 of good quality) evaluated the accuracy of various screening questionnaires for detecting any eating disorder or specific eating disorders. Sample sizes ranged from 51 to 1541 participants (median, 341).1,27 Most studies assessed the SCOFF (11 studies); 2 studies assessed the EDS-PC, and other questionnaires were assessed by 1 study each.1 Accuracy was compared with either a diagnostic clinical interview or a range of longer self-reported diagnostic questionnaires. Only 2 studies evaluated adolescents, and there was limited reporting on other populations of interest (eg, populations of different races and ethnicities and sexual gender identities).1

For detecting any eating disorder among adults, the SCOFF (cut point ≥2) had a pooled sensitivity of 84% (95% CI, 74% to 90%) and a pooled specificity of 80% (95% CI, 65% to 89%) (10 trials; n = 3684). At a higher cut point (≥3), the pooled sensitivity was lower (69% [95% CI, 56% to 80%]) and specificity was higher (80% [95% CI, 65% to 89%]) (7 trials; n = 2749). Two studies assessed the EDS-PC among adults using a cut point of 2 or greater; sensitivity was similar (97% and 100%) and specificity varied (40% and 71%).1 The Adolescent Binge Eating Questionnaire had a sensitivity of 100% and specificity of 27% in a population of adolescents (aged 11 to 18 years) recruited from a pediatric obesity clinic. A single study evaluated the SCOFF in a sample of adolescent females and males and found a sensitivity of 73% and a specificity of 78%.1

Benefits of Early Detection and Treatment
The USPSTF found no studies that directly assessed the benefits of screening for eating disorders. Forty-four to good-quality randomized clinical trials (n = 3969) assessed interventions for adult populations with recently detected or previously untreated eating disorders. No trials were found that enrolled participants who were screen-detected in primary care. Study participants were either referred or recruited to treatment. Many studies enrolled participants via advertisements for interventions for binge eating and obesity.1 Trials evaluated heterogeneous interventions. The majority of the trials enrolled mostly female participants and populations with binge eating disorder or bulimia nervosa only. One trial was limited to adolescents; another trial enrolled adults and adolescents. Two trials (n = 116 954) enrolled a majority of males. No eligible trials focused on populations with anorexia nervosa.1 One trial (n = 40) enrolled Latina individuals only; 2 trials (n = 156) enrolled a study population that was 54% to 55% racial and ethnic groups; all others enrolled a majority of White study participants. There was limited evidence on specific populations of interest (eg, by age, sex, race and ethnicity, sexual orientation, gender identity, and mental health comorbidity).1

Twenty-four trials (n = 1644) assessed psychological interventions. Among adults with binge eating disorder, guided self-help improved eating disorder symptom severity more than inactive control (pooled standardized mean difference [SMD], −0.96 [95% CI, −1.26 to −0.67]) (5 trials; n = 391). Unguided self-help (6 trials; n = 368) also favored intervention; however, the difference between groups was not statistically significant (SMD, −0.18 [95% CI, −0.38 to 0.03]). Self-help interventions reduced depression
symptoms more than inactive control, including guided self-help (pooled SMD, −0.73 [95% CI, −1.04 to −0.43]) (4 trials; n = 324) and unguided self-help (pooled SMD, 0.37 [95% CI, −0.68 to −0.05]) (3 trials; n = 156). Few trials of self-help interventions assessed other outcomes. Group therapy for binge eating disorder (7 trials; n = 253) was associated with larger reductions in depression scores from baseline than inactive control (pooled SMD, −0.48 [95% CI, −0.69 to 0.27]). Few trials of group therapy measured other outcomes of eating disorder symptoms, and results were inconsistent. Results were inconsistent in the 2 trials that assessed a combination of fluoxetine and self-help for bulimia nervosa or fluoxetine with individual cognitive behavioral therapy for binge eating disorder. Four trials (n = 319) of various types of individual therapy were assessed; however, the trials measured heterogeneous outcomes with inconsistent results.1

Eighteen trials (n = 2433) assessed the benefit of pharmacotherapy compared with placebo. Most trials evaluated outcomes over a duration of 6 to 12 weeks; 3 trials assessed outcomes over 16 weeks.1 Four trials of lisdexamfetamine for the treatment of binge eating disorder (n = 900) measured change in eating disorder symptom severity using the Yale-Brown Obsessive Compulsive Scale modified for binge eating (YBOCS-BE) and found larger reductions in changes from baseline scores associated with lisdexamfetamine (50 to 60 mg/d) than placebo (pooled mean difference, −5.75 [95% CI, −8.32 to −3.17]). Two trials (n = 465) compared topiramate with placebo for the treatment of binge eating disorder and found statistically significant larger reductions in YBOCS-BE scores from baseline among the topiramate group than the placebo group, from −6.40 (P < .001) to −2.55 (P = .004). Five trials (n = 208) evaluated various SSRIs in studies with binge eating disorder and reported inconsistent results on heterogeneous outcome measures specific to eating disorder symptoms. Selective serotonin reuptake inhibitors were associated with a larger reduction in depression symptom scores than placebo (pooled SMD, −0.6 [95% CI, −0.90 to 0.33]) (5 studies; n = 208). Three trials (n = 528) assessed fluoxetine for populations with bulimia nervosa and found inconsistent results for improvement in eating disorder symptom severity and depression.1,2,27 Two trials measured eating disorder symptom severity (the EDE-Q [Eating Disorder Examination–Questionnaire] and YBOCS-BE) and found a reduction in symptom scores favoring SSRIs.

The body of evidence has several limitations. Most studies of screening test accuracy assessed the SCOFF in adult females, but few studies evaluated screening tools in males, adolescents, or other populations (eg, populations of different races and ethnicities and sexual gender identities).1 Intervention trials did not identify study participants from primary care clinics. Trials mostly recruited participants using advertisements or referrals, and some advertised studies focused on binge eating and obesity. As a result, intervention studies have limited generalizability to populations who would be detected by routine screening in primary care settings. In addition, most treatment trials only included females with binge eating disorder or bulimia nervosa; none focused on populations with other eating disorders. Treatment trials assessed outcomes over a short duration (6 to 16 weeks), and there was limited evidence of effectiveness in specific populations of interest. Although treatment may improve some outcomes in symptomatic persons and those who are motivated to respond to trial advertisements, it is unclear whether screening and treatment of screen-detected persons can improve health outcomes in asymptomatic patients.

Harms of Screening and Treatment
The USPSTF found no studies that directly evaluated the harms of screening. None of the trials of psychological interventions reported on harms. Nine trials of pharmacotherapy (n = 2006) reported on adverse events of 4 medications: lisdexamfetamine (4 trials), topiramate (2 trials), fluoxetine (2 trials), and escitalopram (1 trial). Trials were of short duration (6 to 16 weeks). Lisdexamfetamine was associated with higher rates of dry mouth, headache, and insomnia than placebo. Topiramate was associated with higher rates of parasthesia, taste perversion, and difficulty with concentration or confusion than placebo. Selective serotonin reuptake inhibitors were associated with insomnia, nausea, and tremor.1

Response to Public Comment
A draft version of this recommendation statement was posted for public comment on the USPSTF website from October 19, 2021, to November 15, 2021. Several comments asked for clarification of the patient population under consideration. In response, the USPSTF added language to the Practice Considerations section regarding the asymptomatic patient population. Comments asked for additional details on the benefits of treatment. As a result, the USPSTF added additional text to the Supporting Evidence section.

Research Needs and Gaps
There are several critical evidence gaps in understanding the potential net benefit of screening for eating disorders. More studies are needed that address the following areas.

• Screening and early treatment trials that focus on health outcomes and that enroll screen-detected populations from general primary care settings
• Studies on the potential harms of screening such as labeling and false-positive results
• Trials addressing the benefits and harms of screening and treatment in adolescents, men, and across sexual orientation/gender identity and racial and ethnic populations
• Accuracy studies enrolling asymptomatic adults and adolescents from primary care settings that use consistent definitions and reference standards to define eating disorder conditions

Recommendations of Others
Several organizations recommend screening in the context of monitoring changes in weight and other vital signs or signs and symptoms to determine whether a patient might have an eating disorder. The American Academy of Pediatrics recommends that pediatricians include screening for eating disorders in their annual health supervision or sports examinations through longitudinal weight and height monitoring as well as looking for signs of disordered eating. All preteens and adolescents should be screened about eating patterns and body image issues.27 The Academy for Eating Disorders recommends that all high-risk patients should be
monitored for symptoms of eating disorders. The American Academy of Child and Adolescent Psychiatry recommends that mental health professionals screen all preteen and adolescent patients for eating disorders through height and weight assessments and screen questions about eating patterns and body image and refer for further evaluation, if needed. The American College of Obstetricians and Gynecologists recommends that clinicians be able to identify signs of disordered eating and screen at-risk patients.

**REFERENCES**


11. Diemer EW, Grant JD, Munn-Chernoff MA, Patterson DA, Duncan AE. Gender identity, sexual orientation, and eating-related pathology in a national sample of college students. J Adolesc Health. 2015;57(2):144-149. doi:10.1016/j.jadohealth.2015.03.003


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**Additional Information:** The US Preventive Services Task Force (USPSTF) makes recommendations about the effectiveness of specific preventive care services for patients without obvious related signs or symptoms. It bases its recommendations on the evidence of both the benefits and harms of the service and an assessment of the balance. The USPSTF does not consider the costs of providing a service in this assessment. The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision-making to the specific patient or situation. Similarly, the USPSTF notes that policy and coverage decisions involve considerations in addition to the evidence of clinical benefits and harms. Published by JAMA—Journal of the American Medical Association under arrangement with the Agency for Healthcare Research and Quality (AHRQ). ©2022 AMA and United States Government, as represented by the Secretary of the Department of Health and Human Services (HHS), by assignment from the members of the United States Preventive Services Task Force (USPSTF). All rights reserved.

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