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Screening for and Management of Obesity in Adults: U.S. Preventive Services Task Force Recommendation Statement

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Description: Update of the 2003 U.S. Preventive Services Task Force (USPSTF) recommendation statement on screening for obesity and overweight in adults.

Methods: The USPSTF reviewed new evidence on the benefits and harms of screening and primary care–feasible or referable nonsurgical weight-loss interventions.

Recommendation: The USPSTF recommends screening all adults for obesity. Clinicians should offer or refer patients with a body mass index of 30 kg/m^2 or higher to intensive, multicomponent behavioral interventions (B recommendation).

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* For a list of the members of the USPSTF, see the **Appendix** (available at www.annals.org).

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The U.S. Preventive Services Task Force (USPSTF) makes recommendations about the effectiveness of specific clinical preventive services for patients without 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.

Summary of Recommendation and Evidence

The USPSTF recommends screening all adults for obesity. Clinicians should offer or refer patients with a body mass index (BMI) of 30 kg/m^2 or higher to intensive, multicomponent behavioral interventions. This is a B recommendation.

See the **Figure** for a summary of the recommendation and suggestions for clinical practice.

Table 1 describes the USPSTF grades, and **Table 2** describes the USPSTF classification of levels of certainty about net benefit.

Rationale

Importance

The prevalence of obesity in the United States is high, exceeding 30% in adult men and women. Obesity is associated with such health problems as an increased risk for coronary heart disease, type 2 diabetes mellitus, various types of cancer, gallstones, and disability. These comorbid medical conditions are associated with higher use of health care services and costs among obese patients.

Obesity is also associated with an increased risk for death, particularly in adults younger than 65 years. The leading causes of death in obese adults include ischemic heart disease, diabetes, respiratory diseases, and cancer (for example, liver, kidney, breast, endometrial, prostate, and colon). Weight loss in obese individuals is associated with a lower incidence of health problems and death.

Detection

Body mass index is calculated from the measured weight and height of an individual. Recent evidence suggests that waist circumference may be an acceptable alternative to BMI measurement in some patient subpopulations. Screening tests were not a specific focus of this review.

Benefits of Detection and Early Intervention

The USPSTF found adequate evidence that intensive, multicomponent behavioral interventions for obese adults can lead to an average weight loss of 4 to 7 kg (8.8 to 15.4 lb). These interventions also improve glucose tolerance and other physiologic risk factors for cardiovascular disease.

See also:

Print
Summary for Patients I-32

Web-Only
CME quiz (preview on page I-15)

Figure. **Screening for and management of obesity in adults: clinical summary of U. S. Preventive Services Task Force recommendation.**

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U.S. Preventive Services TASK FORCE
www.USPreventiveServicesTaskForce.org

SCREENING FOR AND MANAGEMENT OF OBESITY IN ADULTS

CLINICAL SUMMARY OF U.S. PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

Population	Adults aged 18 years or older
Recommendation	Screen for obesity. Patients with a body mass index (BMI) of 30 kg/m² or higher should be offered or referred to intensive, multicomponent behavioral interventions. Grade: B

Screening Tests	Body mass index is calculated from the measured weight and height of an individual. Recent evidence suggests that waist circumference may be an acceptable alternative to BMI measurement in some patient subpopulations.
Timing of Screening	No evidence was found about appropriate intervals for screening.
Interventions	Intensive, multicomponent behavioral interventions for obese adults include the following components: Behavioral management activities, such as setting weight-loss goals Improving diet or nutrition and increasing physical activity Addressing barriers to change Self-monitoring Strategizing how to maintain lifestyle changes
Balance of Harms and Benefits	Adequate evidence indicates that intensive, multicomponent behavioral interventions for obese adults can lead to weight loss, as well as improved glucose tolerance and other physiologic risk factors for cardiovascular disease. Inadequate evidence was found about the effectiveness of these interventions on long-term health outcomes (for example, mortality, cardiovascular disease, and hospitalizations). Adequate evidence indicates that the harms of screening and behavioral interventions for obesity are small. Possible harms of behavioral weight-loss interventions include decreased bone mineral density and increased fracture risk, serious injuries resulting from increased physical activity, and increased risk for eating disorders.
Other Relevant USPSTF Recommendations	Recommendations on screening for obesity in children and adolescents can be found at www.uspreventiveservicestaskforce.org.

For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, please go to www.uspreventiveservicestaskforce.org.

The USPSTF found inadequate direct evidence about the effectiveness of these interventions on long-term health outcomes (for example, death, cardiovascular disease, and hospitalizations).

Harms of Detection and Early Intervention

Adequate evidence indicates that the harms of screening and providing behavioral interventions for obesity are no greater than small.

USPSTF Assessment

The USPSTF concludes with moderate certainty that screening for obesity in adults has a moderate net benefit. There is also benefit to offering or referring obese adults to intensive behavioral interventions to improve weight status and other risk factors for important health outcomes.

CLINICAL CONSIDERATIONS

Patient Population Under Consideration

This recommendation applies to adults aged 18 years or older. The USPSTF uses the following terms to define categories of increased BMI: overweight is defined as a BMI of 25 to 29.9 kg/m^2, and obesity is defined as a BMI of 30 kg/m^2 or higher.

Interventions

The USPSTF found that the most effective interventions were comprehensive and of high intensity (12 to 26 sessions in a year). Although the USPSTF could not determine the effectiveness of other specific intervention components, most of the higher-intensity behavioral interventions included multiple behavioral management activities, such as group sessions, individual sessions, setting weight-loss goals, improving diet or nutrition, physical activity

Table 1. **What the USPSTF Grades Mean and Suggestions for Practice**

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	*Note: The following statement is undergoing revision.* The USPSTF recommends selectively offering (or providing) this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer/provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of the USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

sessions, addressing barriers to change, active use of self-monitoring, and strategizing on how to maintain lifestyle changes.

Weight-loss outcomes improved when interventions involved more sessions (12 to 26 sessions in the first year). Behavioral intervention participants lost an average of 6% of their baseline weight (4 to 7 kg [8.8 to 15.4 lb]) in the first year with 12 to 26 treatment sessions compared with little or no weight loss in the control group participants. A weight loss of 5% is considered clinically important by the U.S. Food and Drug Administration (FDA).

For obese patients with elevated plasma glucose levels, behavioral interventions decreased the incidence of diabetes diagnosis by about 50% over 2 to 3 years (number needed to treat, 7). Behavioral interventions also demonstrated some improvement in intermediate health outcomes, such as blood pressure, waist circumference, and glucose tolerance.

Interventions that combine pharmacologic agents (orlistat or metformin) with behavioral interventions resulted in weight loss and improvement in physiologic outcomes. Orlistat led to an average weight loss of about 2.6 kg (5.7 lb), a 1.9-cm decrease in waist circumference, and a decrease in fasting glucose level. However, there are concerns about the potential harms of orlistat because of recent FDA reports of rare severe liver disease and a lack of long-term safety data (1). Metformin led to a 1.5-cm greater decrease in waist circumference; however, use for obesity is not approved by the FDA and is thus considered off-label. In addition, data on maintenance of improvement after discontinuation of medications were insufficient. As a result, the USPSTF is unable to recommend medication use.

Results of trials were not stratified by BMI category, making it difficult to ascertain the certainty of benefit in overweight (BMI of 25 to 29.9 kg/m^2) groups. Although some studies included overweight participants, the mean BMI across trials was in the obese range (≥30 kg/m^2). Therefore, the USPSTF was unable to examine differential effects of interventions on both overweight and obese patients. However, the recommended interventions may also lead to weight loss in some overweight patients. Less is known about the long-term health outcomes of overweight than of obesity.

Screening Intervals

No evidence was found about appropriate intervals for screening.

Table 2. **USPSTF Levels of Certainty Regarding Net Benefit**

Level of Certainty*	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as: the number, size, or quality of individual studies; inconsistency of findings across individual studies; limited generalizability of findings to routine primary care practice; and lack of coherence in the chain of evidence. As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: the limited number or size of studies; important flaws in study design or methods; inconsistency of findings across individual studies; gaps in the chain of evidence; findings that are not generalizable to routine primary care practice; and a lack of information on important health outcomes. More information may allow an estimation of effects on health outcomes.

* The USPSTF defines *certainty* as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general primary care population. The USPSTF assigns a certainty level on the basis of the nature of the overall evidence available to assess the net benefit of a preventive service.

Other Considerations

Implementation

Although intensive interventions may be impractical within many primary care settings, patients may be referred from primary care to community-based programs for these interventions.

Research Needs and Gaps

Further research is needed to examine the direct effects of screening for obesity on long-term weight and health outcomes. More specific areas for further research include determining whether weight-loss interventions lead to long-term weight loss and improvements in health outcomes. Studies are needed that reassess the best methods for screening in adults (for example, waist circumference or waist–hip ratio), address weight management in elderly adults and other subpopulations, and examine the cost-effectiveness of behavioral and pharmacologic interventions. Comparative effectiveness trials could provide more evidence about the components of an effective intervention.

Discussion

Burden of Disease

Since 1976 to 1980, the prevalence of obesity and overweight in the United States has increased by 134% and 48%, respectively (2). In 2007 to 2008, 40% of men and 28% of women in the United States were overweight and 32% of men and 36% of women were obese. The prevalence of obesity exceeds 30% in most age- and sex-specific groups, with approximately 1 in 20 Americans having a BMI greater than 40 kg/m^2 (3).

Depending on age and race, obesity has been shown to be associated with a 6- to 20-year decrease in life expectancy. The leading causes of death in obese adults include ischemic heart disease, diabetes, certain types of cancer (for example, liver, kidney, breast, endometrial, prostate, and colon), and respiratory diseases (4).

Scope of Review

To update its 2003 recommendation on screening for obesity and overweight in adults (5), the USPSTF reviewed the current state of the evidence and identified new evidence that addresses previously identified gaps. The USPSTF reviewed new evidence on the benefits and harms of screening and primary care–feasible or referable weight-loss interventions (6).The focus of this update was on nonsurgical interventions.

Accuracy of Screening Tests

In 2003, the USPSTF found adequate evidence that BMI is an acceptable measure for identifying adults with excess weight (5). Therefore, the USPSTF did not systematically address clinical screening tests for obesity and overweight in its review.

Effectiveness of Detection and Intervention

No new trials were identified that compared screening for obesity in adults with no screening. A total of 58 trials of weight-loss interventions were identified. Of these, 38 trials (13 495 participants) involved behavioral interventions, 18 trials (11 256 participants) involved orlistat plus behavioral interventions, and 3 trials (2652 participants) involved metformin plus behavioral interventions (4). In comparison with studies reviewed for the 2003 recommendation, there were 33 new trials of behavioral interventions, 16 new trials involving orlistat plus behavioral interventions, and 3 new trials involving metformin plus behavioral interventions (4).

Behavioral Interventions

Behavioral intervention trials were generally of high quality, with 24% rated as good quality. Behavioral trial participants had mean BMIs ranging from 25 to 39 kg/m^2, with an average baseline BMI of 31.9 kg/m^2 across all trials. Fifty-five percent of behavioral trials had participants with clinical or subclinical cardiovascular risk factors, such as impaired glucose intolerance (1).

Most of the trials showed that behavioral interventions had a statistically significant effect on weight loss at 12 to 18 months (6). Control group participants lost minimal or no weight, whereas intervention group participants lost 1.5 to 5 kg (3.3 to 11.0 lb), or 4% of baseline weight. Interventions with a greater number of sessions showed more weight loss. Patients who participated in 12 to 26 intervention sessions in the first year generally lost 4 to 7 kg (8.8 to 15.4 lb) (6% of baseline weight) compared with 1.5 to 4 kg (3.3 to 8.8 lb) (2.8% of baseline weight) in those who participated in fewer than 12 sessions (6).

An increased number of sessions, or increased treatment intensity, was associated with greater weight loss. Most higher-intensity interventions included self-monitoring, setting weight-loss goals, addressing barriers to change, and strategizing about maintaining long-term changes in lifestyle. However, which of these components was associated with weight loss could not be determined (6). A minimum of 12 sessions was essential to realize BMI reduction and maintenance.

Because direct data from screening trials on long-term health outcomes (for example, death, cardiovascular disease, and hospitalizations) were lacking, the USPSTF examined physiologic risk factors for cardiovascular disease. Two good-quality trials showed that diabetes incidence decreased by 30% to 50% over 2 to 3 years (number needed to treat, 7) with behavioral weight-loss interventions among overweight and obese patients with elevated plasma glucose levels (7, 8). Behavioral weight-loss interventions had a minimal effect on lipid outcomes and showed small reductions in blood pressure and waist circumference (6).

Combined Pharmacologic and Behavioral Interventions

Fifty-five percent of behavioral trials and 57% of orlistat trials examined participants with clinical or subclinical

cardiovascular risk factors. Metformin trials examined participants with diabetes risk factors (4).

Combined behavioral and pharmacologic (orlistat or metformin) interventions resulted in weight loss and improvement in physiologic outcomes. Orlistat led to an average weight loss of about 2.6 kg (5.7 lb), a 1.9-cm decrease in waist circumference, and a decrease in fasting glucose level. Metformin led to a 1.5-cm greater decrease in waist circumference; however, use for obesity is not approved by the FDA and is thus considered off-label. In addition, the USPSTF found no evidence on maintenance of improvement after discontinuation of medications (6).

Potential Harms of Detection and Intervention

Behavioral Interventions

Possible harms of behavioral weight-loss interventions include decreased bone mineral density and increased fracture risk, serious injuries resulting from increased physical activity, and an increased risk for eating disorders. Although limited data suggest that weight loss may be associated with decreased bone density at the hip, the clinical significance of the bone loss is uncertain. The trials found no evidence that weight-loss interventions are associated with serious injuries or an increased risk for eating disorders, weight cycling, or depression (6).

Combined Pharmacologic and Behavioral Interventions

There are concerns about the possible harms of orlistat because of recent FDA reports of severe liver disease and a lack of long-term safety data (9). Orlistat has recently been associated with possible kidney and pancreas damage, but no evidence was found supporting these potential harms (10). Both orlistat and metformin caused mild to moderate gastrointestinal adverse effects that resulted in medication discontinuation.

Estimate of Magnitude of Net Benefit

The USPSTF found adequate evidence that intensive, multicomponent behavioral interventions for obese adults can lead to weight loss, as well as improved glucose tolerance and other physiologic risk factors for cardiovascular disease. Inadequate evidence was found about the effectiveness of these interventions on long-term health outcomes (for example, death, cardiovascular disease, and hospitalizations). Adequate evidence indicates that the harms of screening and behavioral interventions for obesity are small. Therefore, the USPSTF concluded that the net benefit of screening is moderate.

Response to Public Comments

A draft of this recommendation statement was posted for public comment on the USPSTF Web site from 26 October to 23 November 2011. All comments received were reviewed during the creation of the final recommendation statement. Specifically, responses to these comments led to clarification of the definition of "intensive" and "multicomponent" in the Clinical Considerations and Discussion sections. The Implementation section was expanded to reflect referral to community-based programs. The Recommendations of Others section was expanded to include recommendations from other professional associations. The Clinical Considerations section was expanded to clarify why "overweight" was not included in the recommendation statement. The Scope of the Review section was refined to clarify the scope of the update. Some respondents asked about costs. The USPSTF does not consider costs in its appraisal of the effectiveness of a service.

Update of Previous USPSTF Recommendation

In 2003, the USPSTF recommended that clinicians screen all adult patients for obesity and offer intensive counseling and behavioral interventions to promote sustained weight loss in obese adults (B recommendation). The USPSTF concluded that the evidence was insufficient to recommend for or against the use of moderate- or low-intensity counseling together with behavioral interventions to promote sustained weight loss in obese adults (I statement) or the use of counseling of any intensity with behavioral interventions to promote sustained weight loss in overweight adults (I statement) (5). One change in the current recommendation is that the USPSTF found adequate evidence that intensive, multicomponent behavioral interventions for obese adults can also improve glucose tolerance and other physiologic risk factors for cardiovascular disease. Another change in the current recommendation is that it addresses only individuals with a BMI of 30 kg/m^2 or higher; it does not address the effectiveness of screening in overweight adults with a BMI of 25 to 29.9 kg/m^2. Although some studies included overweight patients, the differential effects of the interventions on overweight versus obesity could not be determined.

Recommendations of Others

The National Institutes of Health and the Canadian Task Force on Preventive Health Care recommend use of BMI and waist circumference to screen adults for obesity. Both also recommend that weight-loss and weight-maintenance therapies should include a reduced-calorie diet, increased physical activity, and behavioral therapy. They also suggest considering the use of weight-loss medications as part of a multicomponent program in patients with a BMI greater than 27 kg/m^2 and comorbid medical conditions (11, 12). The American Academy of Family Physicians has endorsed the USPSTF's recommendation on screening for obesity in adults (13). The American Congress of Obstetricians and Gynecologists recommends that the routine medical examination include an assessment of the patient's weight and BMI (14). It also recommends that clinicians consider referral for further evaluation and treatment whenever resources are insufficient to meet the patient's needs, the patient has a BMI of 40 kg/m^2 or higher, or the patient has a BMI of 35 kg/m^2 or

higher and comorbid medical conditions or has failed appropriate prior interventions (15).

From the U.S. Preventive Services Task Force, Rockville, Maryland.

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Requests for Single Reprints: Reprints are available from the USPSTF Web site (www.uspreventiveservicestaskforce.org).

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Appendix: U.S. Preventive Services Task Force

Members of the U.S. Preventive Services Task Force at the time this recommendation was finalized† are Virginia A. Moyer, MD, MPH, *Chair* (Baylor College of Medicine, Houston, Texas); Michael L. LeFevre, MD, MSPH, *Co-Vice Chair* (University of Missouri School of Medicine, Columbia, Missouri); Albert L. Siu, MD, MSPH, *Co-Vice Chair* (Mount Sinai School of Medicine, New York, and James J. Peters Veterans Affairs Medical Center, Bronx, New York); Linda Ciofu Baumann, PhD, RN (University of Wisconsin, Madison, Wisconsin); Kirsten Bibbins-Domingo, PhD, MD (University of California, San Francisco, San Francisco, California); Susan J. Curry, PhD (University of Iowa College of Public Health, Iowa City, Iowa); Mark Ebell, MD, MS (University of Georgia, Athens, Georgia); Glenn Flores, MD (University of Texas Southwestern, Dallas, Texas); Adelita Gonzales Cantu, RN, PhD (University of Texas Health Science Center, San Antonio, Texas); David C. Grossman, MD, MPH (Group Health Cooperative, Seattle, Washington); Jessica Herzstein, MD, MPH (Air Products, Allentown, Pennsylvania); Joy Melnikow, MD, MPH (University of California, Davis, Sacramento, California); Wanda K. Nicholson, MD, MPH, MBA (University of North Carolina School of Medicine, Chapel Hill, North Carolina); Douglas K. Owens, MD, MS (Veteran Affairs Palo Alto Health Care System, Palo Alto, and Stanford University, Stanford, California); Carolina Reyes, MD, MPH (Virginia Hospital Center, Arlington, Virginia); and Timothy J. Wilt, MD, MPH (University of Minnesota Department of Medicine and Minneapolis Veteran Affairs Medical Center, Minneapolis, Minnesota). Former USPSTF members who contributed to the development of this recommendation include Ned Calonge, MD, MPH, and George Isham, MD, MS.

† For a list of current Task Force members, go to www.uspreventiveservicestaskforce.org/members.htm.