Executive Summary

The Practical Guide
Identification, Evaluation, and Treatment of Overweight and Obesity in Adults

National Institutes of Health
National Heart, Lung, and Blood Institute
North American Association for the Study of Obesity

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Successful treatment ... 
A lifelong effort.

Treatment of an overweight or obese person incorporates a two-step process: assessment and management. Assessment includes determination of the degree of obesity and overall health status. Management involves not only weight loss and maintenance of body weight but also measures to control other risk factors. Obesity is a chronic disease; patient and practitioner must understand that successful treatment requires a lifelong effort. Convincing evidence supports the benefit of weight loss for reducing blood pressure, lowering blood glucose, and improving dyslipidemias.

Assessment

Body Mass Index
Assessment of a patient should include the evaluation of body mass index (BMI), waist circumference, and overall medical risk. To estimate BMI, multiply the individual’s weight (in pounds) by 703, then divide by the height (in inches) squared. This approximates BMI in kilograms per meter squared (kg/m²). There is evidence to support the use of BMI in risk assessment since it provides a more accurate measure of total body fat compared with the assessment of body weight alone. Neither bioelectric impedance nor height-weight tables provide an advantage over BMI in the clinical management of all adult patients, regardless of gender. Clinical judgment must be employed when evaluating very muscular patients because BMI may overestimate the degree of fatness in these patients. The recommended classifications for BMI, adopted by the Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults and endorsed by leading organizations of health professionals, are shown in Table 1.

<table>
<thead>
<tr>
<th>Classifications for BMI</th>
<th>BMI</th>
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</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.5 kg/m²</td>
</tr>
<tr>
<td>Normal weight</td>
<td>18.5–24.9 kg/m²</td>
</tr>
<tr>
<td>Overweight</td>
<td>25–29.9 kg/m²</td>
</tr>
<tr>
<td>Obesity (Class 1)</td>
<td>30–34.9 kg/m²</td>
</tr>
<tr>
<td>Obesity (Class 2)</td>
<td>35–39.9 kg/m²</td>
</tr>
<tr>
<td>Extreme obesity (Class 3)</td>
<td>≥40 kg/m²</td>
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Waist Circumference
Excess abdominal fat is an important, independent risk factor for disease. The evaluation of waist circumference to assess the risks associated with obesity or overweight is supported by research. The measurement of waist-to-hip ratio provides no advantage over waist circumference alone. Waist circumference measurement is particularly useful in patients who are categorized as normal or overweight. It is not necessary to measure waist circumference in individuals with BMIs ≥ 35 kg/m² since it adds little to the predictive power of the disease risk classification of BMI. Men who have waist circumferences greater than 40 inches, and women who have waist circumferences greater than 35 inches, are at higher risk of diabetes, dyslipidemia, hypertension, and cardiovascular disease because of excess abdominal fat. Individuals with waist circumferences greater than these values should be considered one risk category above that defined by their BMI. The relationship between BMI and waist circumference for defining risk is shown in Table 2 on page 10.

Risk Factors or Comorbidities
Overall risk must take into account the potential presence of other risk factors. Some diseases or risk factors associated with obesity place patients at a high absolute risk for
Weight loss therapy is recommended for patients with a BMI > 30 and for patients with a BMI between 25 and 29.9 OR a high-risk waist circumference, and two or more risk factors.

Management

Weight Loss
Individuals at lesser risk should be counseled about effective lifestyle changes to prevent any further weight gain. Goals of therapy are to reduce body weight and maintain a lower body weight for the long term; the prevention of further weight gain is the minimum goal. An initial weight loss of 10 percent of body weight achieved over 6 months is a recommended target. The rate of weight loss should be 1 to 2 pounds each week. Greater rates of weight loss do not achieve better long-term results. After the first 6 months of weight loss therapy, the priority should be weight maintenance achieved through combined changes in diet, physical activity, and behavior. Further weight loss can be considered after a period of weight maintenance.

Prevention of Weight Gain
In some patients, weight loss or a reduction in body fat is not achievable. A goal for these patients should be the prevention of further weight gain. Prevention of weight gain is also an appropriate goal for people with a BMI of 25 to 29.9 who are not otherwise at high risk.

Therapies

A combination of diet modification, increased physical activity, and behavior therapy can be effective.

Dietary Therapy
Caloric intake should be reduced by 500 to 1,000 calories per day (kcal/day) from the current level. Most overweight and obese people should adopt long-term nutritional adjustments to reduce caloric intake. Dietary therapy includes instructions for modifying diets to achieve this goal. Moderate caloric reduction is the goal for the majority of cases; however, diets with greater caloric deficits are used during active weight loss. The diet should be low in calories, but it should not be too low (less than 800 kcal/day). Diets
lower than 800 kcal/day have been found to be no more effective than low-calorie diets in producing weight loss. They should not be used routinely, especially not by providers untrained in their use. In general, diets containing 1,000 to 1,200 kcal/day should be selected for most women; a diet between 1,200 kcal/day and 1,600 kcal/day should be chosen for men and may be appropriate for women who weigh 165 pounds or more, or who exercise.

Long-term changes in food choices are more likely to be successful when the patient’s preferences are taken into account and when the patient is educated about food composition, labeling, preparation, and portion size. Although dietary fat is a rich source of calories, reducing dietary fat without reducing calories will not produce weight loss. Frequent contact with practitioners during the period of diet adjustment is likely to improve compliance.

**Physical Activity**

*Physical activity has direct and indirect benefits.*

Increased physical activity is important in efforts to lose weight because it increases energy expenditure and plays an integral role in weight maintenance. Physical activity also reduces the risk of heart disease more than that achieved by weight loss alone. In addition, increased physical activity may help reduce body fat and prevent the decrease in muscle mass often found during weight loss. For the obese patient, activity should generally be increased slowly, with care taken to avoid injury. A wide variety of activities and/or household chores, including walking, dancing, gardening, and team or individual sports, may help satisfy this goal. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity on most, and preferably all, days of the week.

**Behavior Therapy**

*Including behavioral therapy helps with compliance.*

Behavior therapy is a useful adjunct to planned adjustments in food intake and physical activity. Specific behavioral strategies include the following: self-monitoring, stress management, stimulus control, problem-solving, contingency management, cognitive restructuring, and social support. Behavioral therapies may be employed to promote adoption of diet and activity adjustments; these will be useful for a combined approach to therapy. Strong evidence supports the recommendation that weight loss and weight maintenance programs should employ a combination of low-calorie diets, increased physical activity, and behavior therapy.

**Pharmacotherapy**

*Pharmacotherapy may be helpful for eligible high-risk patients.*

Pharmacotherapy, approved by the FDA for long-term treatment, can be a helpful adjunct for the treatment of obesity in some patients. These drugs should be used only in the context of a treatment program that includes the elements described previously—diet, physical activity changes, and behavior therapy. If lifestyle changes do not promote weight loss after 6 months, drugs
Effective Therapies

A combination of diet modification, increased physical activity, and behavior therapy can be effective.

should be considered. Pharmacotherapy is currently limited to those patients who have a BMI ⩾ 30, or those who have a BMI ⩾ 27 if concomitant obesity-related risk factors or diseases exist. However, not all patients respond to a given drug. If a patient has not lost 4.4 pounds (2 kg) after 4 weeks, it is not likely that this patient will benefit from the drug. Currently, sibutramine and orlistat are approved by the FDA for long-term use in weight loss. Sibutramine is an appetite suppressant that is proposed to work via norepinephrine and serotonergic mechanisms in the brain. Orlistat inhibits fat absorption from the intestine. Both of these drugs have side effects. Sibutramine may increase blood pressure and induce tachycardia; orlistat may reduce the absorption of fat-soluble vitamins and nutrients. The decision to add a drug to an obesity treatment program should be made after consideration of all potential risks and benefits and only after all behavioral options have been exhausted.

Weight Loss Surgery

Surgery is an option for patients with extreme obesity.

Weight loss surgery provides medically significant sustained weight loss for more than 5 years in most patients. Although there are risks associated with surgery, it is not yet known whether these risks are greater in the long term than those of any other form of treatment. Surgery is an option for well-informed and motivated patients who have clinically severe obesity (BMI ⩾ 40) or a BMI ⩾ 35 and serious comorbid conditions. (The term “clinically severe obesity” is preferred to the once commonly used term “morbid obesity.”) Surgical patients should be monitored for complications and lifestyle adjustments throughout their lives.

Special Situations

*Involve other health professionals when possible, especially for special situations.*

Although research regarding obesity treatment in older people is not abundant, age should not preclude therapy for obesity. In people who smoke, the risk of weight gain is often a barrier to smoking cessation. In these patients, cessation of smoking should be encouraged first, and weight loss therapy should be an additional goal.

A weight loss and maintenance program can be conducted by a practitioner without specialization in weight loss so long as that person has the requisite interest and knowledge. However, a variety of practitioners with special skills are available and may be enlisted to assist in the development of a program.

**clinically severe obesity**

(BMI ⩾ 40) or a BMI ⩾ 35 and serious comorbid conditions may warrant surgery for weight loss.

NOTE: Since the publication of this paper, sibutramine (Meridia) has been withdrawn from the market.
Ten Steps to Treating Overweight and Obesity in the Primary Care Setting

1. **Measure height and weight** so that you can estimate your patient’s BMI from the table in Appendix A.

2. **Measure waist circumference** as described on page 9.

3. **Assess comorbidities** as described on pages 11–12 in the section on “Assessment of Risk Status.”

4. **Should your patient be treated?** Take the information you have gathered above and use Figure 4, the Treatment Algorithm, on pages 16–17 to decide. Pay particular attention to Box 7 and the accompanying explanatory text. If the answer is “yes” to treatment, decide which treatment is best using Table 3 on page 25.

5. **Is the patient ready and motivated** to lose weight? Evaluation of readiness should include the following: (1) reasons and motivation for weight loss, (2) previous attempts at weight loss, (3) support expected from family and friends, (4) understanding of risks and benefits, (5) attitudes toward physical activity, (6) time availability, and (7) potential barriers to the patient’s adoption of change.

6. **Which diet should you recommend?** In general, diets containing 1,000 to 1,200 kcal/day should be selected for most women; a diet between 1,200 kcal/day and 1,600 kcal/day should be chosen for men and may be appropriate for women who weigh 165 pounds or more, or who exercise regularly. If the patient can stick with the 1,600 kcal/day diet but does not lose weight you may want to try the 1,200 kcal/day diet. If a patient on either diet is hungry, you may want to increase the calories by 100 to 200 per day. Included in Appendix D are samples of both a 1,200 and 1,600 calorie diet.

7. **Discuss a physical activity goal** with the patient using the Guide to Physical Activity (see Appendix H). Emphasize the importance of physical activity for weight maintenance and risk reduction.

8. **Review the Weekly Food and Activity Diary** (see Appendix K) with the patient. Remind the patient that record-keeping has been shown to be one of the most successful behavioral techniques for weight loss and maintenance. Write down the diet, physical activity, and behavioral goals you have agreed on at the bottom.

9. **Give the patient copies of the dietary information** (see Appendices B–G), the Guide to Physical Activity (see Appendix H), the Guide to Behavior Change (see Appendix I), and the Weekly Food and Activity Diary (see Appendix K).

10. **Enter the patient’s information** and the goals you have agreed on in the Weight and Goal Record (see Appendix J). It is important to keep track of the goals you have set and to ask the patient about them at the next visit to maximize compliance. Have the patient schedule an appointment to see you or your staff for followup in 2 to 4 weeks.