Pharmacologic and Surgical Interventions*

**Pharmacotherapy**

Medication for weight loss generally is recommended only after lifestyle modification has failed to result in the desired weight loss, and only for patients with a body mass index (BMI) (calculated as weight in kilograms divided by height in meters squared) of 30 or more or a BMI of 27–29.9 with comorbid conditions. Medication should be offered with comprehensive lifestyle modification counseling. The American College of Physicians recommends that the use of weight loss medication be preceded by a full discussion of the drug’s adverse effects, lack of long-term efficacy data, and the need for continued use to sustain the benefits (1).

Orlistat is a drug approved by the U.S. Food and Drug Administration (FDA) for weight loss and available for long-term (more than 1 year) use. Orlistat is a pancreatic lipase inhibitor that reduces fat absorption from the intestines by approximately 30%. Prescription orlistat is sold as 120-mg capsules and one capsule should be taken orally before each meal. Overall weight losses with orlistat are modest (2.9 kg more than lifestyle changes alone), but no systemic adverse effects exist. Also, orlistat use appears to have beneficial effects on glucose and cholesterol levels.

Orlistat also is available as an over-the-counter formulation of 60-mg capsules. Its use may result in significantly more weight loss compared with placebo (4.2% versus 2.6% of body weight) and greater reduction in cholesterol and blood pressure (2).

The adverse effects are related to malabsorption of fat and include diarrhea and stool leakage. Adverse effects can be reduced by prescribing psyllium to help bind the unabsorbed fat. A multivitamin is recommended to prevent deficiency of fat-soluble vitamins. In 2009 and 2010, the FDA required an addition to the label of prescription and over-the-counter orlistat regarding rare cases of severe liver injury in individuals who took the drug.

A number of other drugs are approved by the FDA for short-term use (up to 12 weeks), including phentermine, diethylpropion, phendimetrazine, and benzphetamine. These medications act as sympathomimetics and, thus, reduce appetite. Adverse effects include increased heart rate, blood pressure, insomnia, dry mouth, constipation, and nervousness. As with all medications, patients’ responses to drugs vary but, on average, actions of these drugs result in 3 kg weight loss more than those of placebo (3).

Recently, a number of weight loss drugs have been approved by the FDA and are now available on the market (by prescription only). Lorcaserin hydrochloride, approved in June 2012, targets a specific area in the brain that regulates the serotonin receptor 2C. A combination of phentermine

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and topiramate was approved in July 2012, and a combination of bupropion and naltrexone was approved in September of 2014. Liraglutide, a long-acting glucagon-like polypeptide analog, is an option for overweight or obese patients with type 2 diabetes. These drugs are indicated for long-term weight loss management in overweight adults (BMI greater than 27) with at least one medical comorbidity, including type II diabetes, hypertension, or sleep apnea, and obese adults (BMI greater than 30). Weight loss drugs are not indicated for use in pregnant women, and little data exist about use in the prepregnancy period.

Other over-the-counter weight loss agents have been marketed in the United States. However, they were found to have significant and severe adverse effects, including life-threatening cardiac arrhythmias. Many of these over-the-counter weight loss agents have been removed from the market. The use of over-the-counter or herbal supplements for weight loss is not recommended.

### Weight Loss Surgery

Traditional methods of weight loss, including diet and exercise, behavioral modification, and use of pharmacologic agents, are first-line interventions. However, they are associated with fairly poor results and high rates of relapse (4). Bariatric surgery is highly successful for long-term weight loss and for resolution of medical comorbidities associated with obesity. Bariatric surgery should be considered when traditional methods of weight loss fail to yield desired results.

In 1991, the National Institutes of Health developed a consensus statement that endorsed obesity surgery as a safe and an effective means of long-term weight control (5). This statement provided specific criteria to assist with patient selection. Candidates for obesity surgery must be severely obese, designated as class III obesity (a BMI of 40 or more). For most patients, this is at least 45.5 kg (100 lb) over ideal body weight. Less obese patients, with a BMI between 35 and 40, also may be candidates if they have an obesity-associated comorbidity, such as obstructive sleep apnea, diabetes, or coronary artery disease. Patients must be willing to attend a medically supervised weight reduction program and have realistic expectations about long-term outcomes achievable with surgery. Adolescents and adults older than 65 years may benefit from obesity surgery as well, but few long-term outcome data are available on these subgroups. Adolescents may be considered for obesity surgery if they have attained skeletal maturity (usually age 13 years for girls and 15 years for boys) and have enrolled in a multidisciplinary weight management center.

To be eligible for bariatric surgery, patients must document 6 months of attempted weight loss in a medically supervised dietary program. This can be a structured or group-based weight loss program or simply attempted weight loss under the supervision of the primary care physician.

As noted earlier, patients with obesity-related comorbidities are eligible for weight loss surgery if their BMI is 35 or greater. Because most obese patients have some identifiable comorbidity, such as hypertension, osteoarthritis, or obstructive sleep apnea, most patients with a BMI of 35 or greater will be candidates for surgery.
References


Resources

Physician Resources

- Obesity Action Coalition
  - Physician-Supervised Weight Loss (Overweight, Obesity, and Severe Obesity)
  - Bariatric Surgery (Severe Obesity)
- UpToDate: Obesity in adults: Drug therapy
- American Society of Bariatric Physicians (ASBP) ASBP Obesity Algorithm: Adult Adiposity Evaluation and Treatment 2013

Patient Resources

- WebMD: Weight Loss and Obesity
  - Prescription Weight Loss Drugs
  - Choosing a Type of Weight Loss Surgery
  - Is Weight Loss Surgery Right for You?
- American Society of Bariatric Physicians (ASBP) ASBP Obesity Algorithm: Adult Adiposity Evaluation and Treatment 2013

Other Resources

- ACOG Committee Opinion No. 600: Ethical Issues in the Care of the Obese Woman
- American Family Physicians: Obesity
- Obesity Action Coalition: Brochures/Guides/Fact Sheets
- National Lipids Association
- Treat Obesity Seriously
- The Obesity Society
Pharmacologic and Surgical Interventions

- CDC National Diabetes Prevention Program
- CDC National Diabetes Prevention Program - Registry of Recognized Organizations
- CDC NIDDK Publications Catalog

Printable Tools for Practice

- Obesity Assessment Algorithm
- Body Mass Index Table
- Waist Circumference Tool