

## Obesity in Adults

### Obesity is a condition of excess body fat that affects 800 million people worldwide and approximately 42% of adults in the US.

Obesity is defined as a body mass index (BMI) of 30 or higher. BMI is calculated by dividing weight (in kilograms) by height (in meters) squared. Measurement of waist circumference can provide useful information about the amount of abdominal obesity.

#### What Are the Health Effects of Obesity?

Obesity leads to a higher risk of death, heart disease, high blood pressure, diabetes, high cholesterol, gallbladder disease, metabolic dysfunction-associated steatotic liver disease, stroke, sleep apnea, osteoarthritis, depression, anxiety, and certain cancers (such as breast and colorectal cancers).

#### Behavioral Interventions, Nutrition, and Physical Activity

Intensive behavioral programs can achieve weight loss of 5% to 10% after 6 to 12 months. Nutritional approaches include decreasing calorie intake through portion control, reducing consumption of ultraprocessed foods, and increasing intake of fruits and vegetables. Moderate physical activity (at least 150-300 minutes weekly) is recommended for weight maintenance and overall health.

#### What Medications Can Be Used to Treat Obesity?

Oral medications for obesity that are approved by the US Food and Drug Administration (FDA) include phentermine, phentermine-topiramate, bupropion-naltrexone, and orlistat. These drugs lead to an average weight loss of 4% to 8% in eligible people with a BMI higher than 27. Side effects may include nausea, vomiting, constipation, and abdominal pain.

FDA-approved injection medications for obesity include liraglutide, semaglutide, and tirzepatide, which are given as a shot under the skin of the upper arm, stomach, or thigh. These medications, along with healthy lifestyle changes, result in an 8% to 21% weight loss, but they are expensive and are not currently covered by Medicare for patients with a diagnosis of obesity alone. Side effects may include nausea, vomiting, delayed emptying of the stomach, and skin irritation at the injection site.

#### What Procedures Can Be Used to Treat Obesity?

Adults with a BMI of 30 to 40 may undergo an endoscopic procedure (intra-gastric balloon, endoscopic sleeve gastrectomy) that uses a device that is passed through the mouth to the stomach. These procedures can result in 10% to 13% weight loss at 6 months. Surgery (laparoscopic gastric sleeve gastrectomy, Roux-en-Y gastric

**Obesity** is a health condition characterized by excess body fat and is caused by many factors. Obesity is associated with other health conditions including

- Heart disease
- High blood pressure
- High cholesterol
- Diabetes
- Stroke
- Gallbladder disease
- Liver disease
- Sleep apnea
- Osteoarthritis
- Certain cancers
- Depression and anxiety

**Treatment options to promote healthy weight loss include**



**Dietary changes:** Decreasing portion size, reducing consumption of processed foods, and increasing intake of fruits and vegetables

**Increased movement:** Moderate physical activity of at least 150-300 minutes weekly

**Social support:** Behavioral counseling, dietary counseling, and support groups

**Medical interventions:** Weight-loss medication and/or bariatric surgery

Weight loss can lead to health improvements, such as decreased blood pressure, improved cholesterol levels, and decreased sleep apnea.

bypass) is typically reserved for people with a BMI of 40 or higher or those with weight-related health problems and a BMI of 35 or higher. These procedures result in weight loss of 25% to 30% at 12 months. People who undergo surgery for obesity may have post-operative complications (such as internal bleeding or internal hernia) and should receive supplementation with thiamine, folate, iron, copper, calcium, zinc, and vitamins A, B<sub>12</sub>, D, E, and K to avoid micronutrient deficiency.

#### What Are the Health Benefits of Weight Loss?

Weight loss of 5% can decrease systolic and diastolic blood pressure by 2 to 3 mm Hg. A 5% to 10% reduction in weight can result in better blood glucose control in adults with type 2 diabetes and improved high-density lipoprotein cholesterol levels. Weight loss of 10% to 15% can decrease fat in the liver and improve sleep apnea. Weight loss of more than 15% is associated with lower mortality in people who undergo surgery for obesity.

#### FOR MORE INFORMATION

[Centers for Disease Control and Prevention](#)

**Authors:** Laura A. Campbell, MD; Rachana Kombathula, MD; Christopher D. Jackson, MD

**Published Online:** August 5, 2024. doi:10.1001/jama.2024.5126

**Author Affiliations:** Department of Medicine, Division of General Internal Medicine, University of Tennessee Health Science Center, Memphis.

**Conflict of Interest Disclosures:** None reported.

**Source:** Elmaleh-Sachs A, Schwartz JL, Bramante CT, et al. Obesity management in adults: a review. *JAMA*. 2023;330(20):2000-2015. doi:10.1001/jama.2023.19897

The JAMA Patient Page is a public service of JAMA. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA suggests that you consult your physician. This page may be downloaded or photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, email [reprints@jamanetwork.com](mailto:reprints@jamanetwork.com).