

# Obesity



## Introduction

*Unwanted weight gain leading to overweight, and obesity has become a significant driver of the global rise in chronic, non-communicable diseases and is itself now considered a chronic disease.*

*Because of the psychological and social stigmata that accompany developing overweight and obesity, those affected by these conditions are also vulnerable to discrimination in their personal and work lives, low self-esteem, and depression (1).*

*These medical and psychological sequelae of obesity contribute to a major share of health-care expenditures and generate additional economic costs through loss of worker productivity, increased disability, and premature loss of life (2-4).*

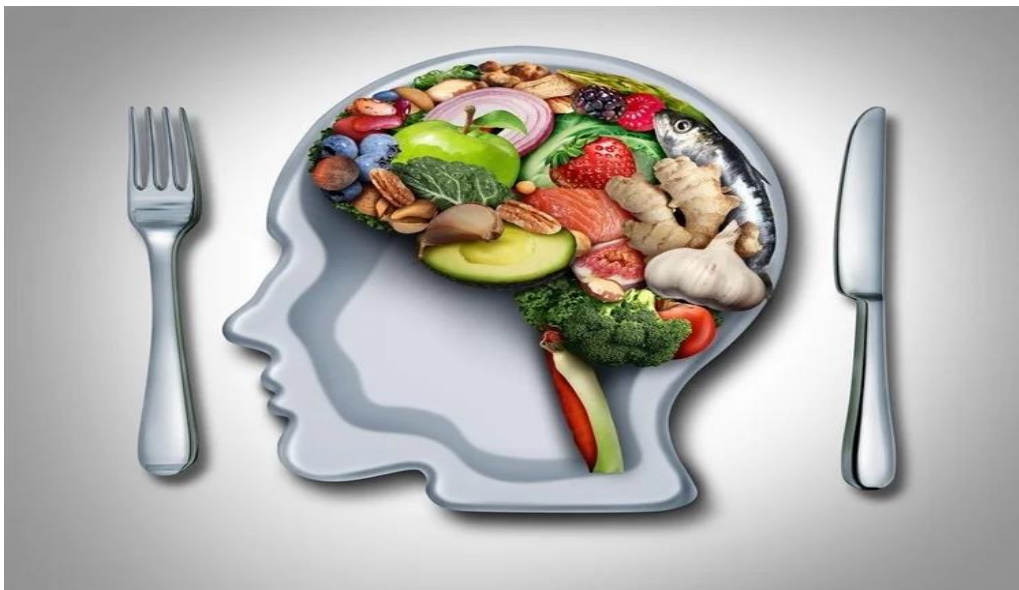
*Expression of overweight and obesity results from an interaction between an individual's genetic predisposition to weight gain and environmental influences.*

## **Definition**

*The term "nutritional obesity" is not a widely used medical term.*

*Obesity itself is a medical condition defined as excessive body fat that can impair health. It is typically diagnosed using Body Mass Index (BMI), a measurement that considers weight relative to height.*

**Nutritional:** *Relating to food and the process of taking in food for nourishment.*



**Obesity:** *A chronic disease characterized by excessive amounts of body fat.*

**Overweight and obesity** *occur when excess fat accumulation (globally, regionally, and in organs as ectopic lipids) increases risk for adverse health outcomes.*

*Like other chronic diseases, this definition does not require manifestation of an obesity-related complication, simply that the risk for one is increased.*

*This allows for implementation of weight management strategies targeting treatment and prevention of these related conditions.*

## **Risk factors.**

*There are many risk factors for obesity, which can be broadly categorized into lifestyle factors, genetics, and medical conditions.*

### **Lifestyle factors:**

- **Diet:** *Unhealthy eating habits are a major contributor to obesity. This includes consuming more calories than you burn, sugary drinks, processed foods, and excessive amounts of unhealthy fats.*



- **Physical inactivity:** *Lack of physical activity is another major risk factor for obesity. Regular exercise helps you burn calories and maintain a healthy weight.*



- **Sleep:** Not getting enough sleep can disrupt hormones that regulate appetite, leading to weight gain.
- **Stress:** Chronic stress can also lead to weight gain by increasing cortisol levels, a hormone that promotes fat storage.



### **Genetics:**

- **Genetics play a significant role in obesity. Some people are more predisposed to weight gain due to their genes.**

### **Medical conditions:**

- *Certain medical conditions can also contribute to obesity, such as Polycystic ovary syndrome (PCOS), Cushing's syndrome, and hypothyroidism.*



- **medications:** *Some medications, such as antidepressants and steroids, can also cause weight gain as a side effect.*

### **Other factors:**

- **Socioeconomic status:** *People with lower socioeconomic status are more likely to be obese. This may be due to factors such as limited access to healthy foods and safe places for physical activity.*
- **Environmental factors:** *The environment you live in can also influence your weight. Easy access to fast food and a lack of safe parks or sidewalks for exercise can contribute to obesity.*

## **Complication of obesity**

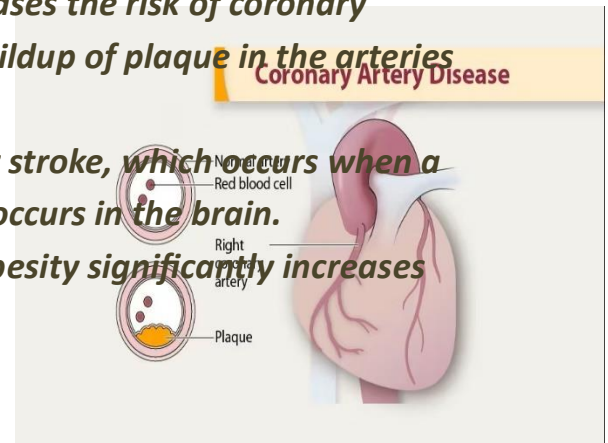
- **Metabolic disorders:**
  1. **Type 2 diabetes:** *Obesity is a major risk factor for type 2 diabetes, a chronic condition where the body either becomes resistant to insulin or doesn't produce enough insulin. Insulin is a hormone that regulates blood sugar levels.*



2. **Insulin resistance:** This is a condition where cells in your body don't respond properly to insulin, leading to high blood sugar levels.
3. **Metabolic syndrome:** This is a cluster of conditions that includes high blood pressure, high blood sugar, unhealthy cholesterol levels, and excess abdominal fat.

- **Cardiovascular complications:**

1. **Coronary heart disease:** Obesity increases the risk of coronary heart disease, which is caused by a buildup of plaque in the arteries that supply blood to the heart.
2. **Stroke:** Obesity is a major risk factor for stroke, which occurs when a blood clot blocks an artery or bleeding occurs in the brain.
3. **High blood pressure (hypertension):** Obesity significantly increases the risk of high blood pressure.

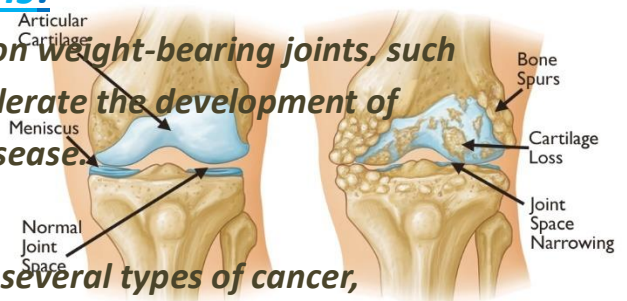


- **Respiratory complications:**

**Sleep apnea:** This is a serious sleep disorder where breathing repeatedly stops and starts during sleep.

- **Musculoskeletal complications:**

**Osteoarthritis:** Obesity puts extra stress on weight-bearing joints, such as the knees and hips, which can accelerate the development of osteoarthritis, a degenerative joint disease.



- **Cancers:**

Obesity is linked to an increased risk of several types of cancer, including **breast cancer, colon cancer, and endometrial cancer.**

- **Mental health complications:**

- **Reproductive complications:**

# Management of obesity

Effective management of obesity involves a multi-pronged approach, focusing on lifestyle changes, potentially incorporating medications, and in some cases, surgery.

We summarize evidence for the effectiveness of population-level interventions to improve diet and physical activity for preventing obesity in six domains: nutritional and agricultural policies, food labeling, food advertising, mass media campaigns, school and workplace interventions, and urban planning. Strategies to improve diet are also reviewed in chapter 6 (Afshin and others 2017) and reinforced here given the importance of dietary modification for preventing obesity.

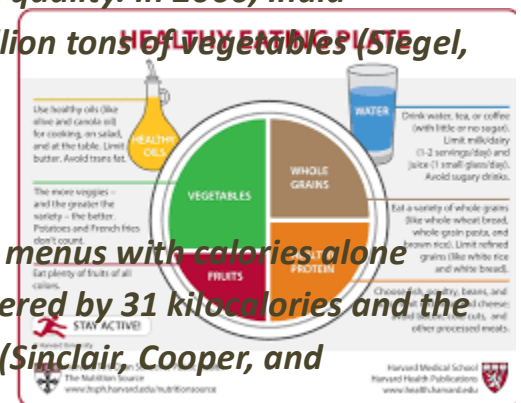
- Lifestyle Changes:

Diet: This is the cornerstone of obesity management. A healthcare professional can help create a personalized plan that promotes healthy eating habits. This often involves reducing calorie intake, consuming more fruits, vegetables, and whole grains, limiting processed foods, sugary drinks, and unhealthy fats.

Removing subsidies on animal-based foods, unhealthy oils, and sugar in exchange for subsidies on fruits, vegetables, legumes, nuts, and whole grains could be an effective strategy for improving diet quality. In 2000, India produced 26.6 million tons of fruits and 96.5 million tons of vegetables (Stegel, Narayan, and Kinra 2008).

Another small meta-analysis found that labeling menus with calories alone significantly reduced the amount of calories ordered by 31 kilocalories and the amount of calories consumed by 13 kilocalories (Sinclair, Cooper, and Mansfield 2014)

In 2010, the WHO released a set of recommendations on the marketing of foods and nonalcoholic beverages high in fat, sugar, and salt to children in an effort to encourage healthy dietary choices and promote the maintenance of healthy weight (WHO 2010)



**Physical Activity:** Regular exercise is crucial for weight loss and maintaining a healthy weight. Aim for at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous-intensity aerobic activity per week. Strength training exercises are also recommended to build muscle mass, which can boost metabolism.



**Behavior Modification:** Developing healthy habits around eating and exercise is essential for long-term success. This might involve strategies like mindful eating, portion control, stress management techniques, and getting enough sleep.

- **Medications:**

Anti-obesity medications may be prescribed by a doctor in certain cases, particularly for individuals with a BMI exceeding 30 or those with obesity-related health conditions. These medications work in various ways, such as suppressing appetite, reducing fat absorption, or increasing feelings of fullness.

- **Surgery:**

Bariatric surgery is an option for some people with severe obesity (BMI exceeding 40) or those with a BMI exceeding 35 with serious weight-related health problems. These procedures can significantly reduce the size of the stomach or alter the digestive system to limit food intake and absorption.

The most common types of bariatric surgical procedures include sleeve gastrectomy and gastric bypass along with adjustable gastric banding, which is technically a medical device. Evidence from trials in HICs has shown that these strategies are clinically



*effective for moderately to severely obese patients compared with nonsurgical interventions (Picot and others 2009).*

- **Additional Support:**

*Joining a weight loss support group or working with a registered dietitian can provide valuable guidance and motivation.*

## **Steps to start losing weight.**

*Here are some initial steps you can take to start losing weight in a healthy and sustainable way:*

1. **Set realistic goals:** *Don't aim for drastic weight loss overnight. A healthy goal is to lose 1-2 pounds per week. This is more achievable and helps prevent muscle loss.*
2. **Make small changes to your diet:** *You don't need to overhaul your entire diet at once. Start by making small substitutions like:*
  - *Swapping sugary drinks for water or unsweetened tea/coffee.*
  - *Choosing whole grains like brown rice or quinoa over refined grains like white bread.*
  - *Including lean protein sources like chicken, fish, or beans in your meals.*
  - *Increasing your intake of fruits and vegetables.*
3. **Focus on portion control:** *Even healthy foods can contribute to weight gain if consumed in excess. Use smaller plates, measure out portions, and avoid going back for seconds.*
4. **Stay hydrated:** *Drinking plenty of water throughout the day can help you feel full and reduce calorie intake. Aim for 8 glasses of water daily.*

5. **Get moving:** Aim for at least 150 minutes of moderate-intensity exercise or 75 minutes of vigorous-intensity exercise per week. Start with activities you enjoy, like brisk walking, swimming, or cycling.
6. **Make sleep a priority:** Aim for 7-8 hours of quality sleep each night. When sleep-deprived, your body produces more ghrelin (hunger hormone) and less leptin (satiety hormone), making you crave unhealthy foods.
7. **Manage stress:** Chronic stress can contribute to weight gain. Explore relaxation techniques like yoga, meditation, or deep breathing to manage stress effectively.
8. **Track your progress:** Keeping a food diary or using a fitness tracker can help you stay accountable and motivated by monitoring your progress over time.
9. **Consider consulting a healthcare professional or registered dietitian:** They can provide personalized guidance, create a safe and effective weight loss plan tailored to your needs, and address any underlying health conditions.

***Remember,*** weight loss is a journey, not a destination. Be patient with yourself, celebrate your successes, and don't get discouraged by setbacks. Focus on making healthy lifestyle changes that you can maintain for the long term.

## **Types of Diet**

***There are many different diets available, each with its own approach to weight loss or health improvement. Here's a breakdown of some popular types to give you an idea:***

- **Low-carb diets:** *These diets restrict carbohydrate intake, forcing the body to burn fat for fuel. Examples include the Atkins diet and the ketogenic diet. While effective for weight loss, they can be restrictive and may not be suitable for everyone.*
- **High-protein diets:** *These diets emphasize protein intake, which can help boost metabolism and increase satiety. They may be helpful for building muscle and managing weight.*
- **Mediterranean diet:** *This diet emphasizes fruits, vegetables, whole grains, healthy fats like olive oil, and lean protein sources like fish. It's considered a heart-healthy and balanced approach to eating.*
- **DASH diet:** *Designed to lower blood pressure, this diet focuses on fruits, vegetables, whole grains, and low-fat dairy products, while limiting red meat, saturated fat, and added sugar.*
- **Intermittent fasting:** *This involves cycling between periods of eating and fasting. There are various protocols, such as the 16/8 method (fasting for 16 hours and eating within an 8-hour window).*
- **Vegan diet:** *This excludes all animal products, including meat, poultry, fish, dairy, and eggs. It can be a healthy option but requires careful planning to ensure you get all the necessary nutrients.*

- **Paleo diet:** *Based on foods that were available to our ancestors during the Paleolithic era, such as lean meats, fish, fruits, vegetables, nuts, and seeds.*
- **Gluten-free diet:** *Eliminates gluten-containing grains like wheat, barley, and rye. It is essential for people with celiac disease or gluten sensitivity.*
- **Vegetarian diet:** *Excludes meat but may include other animal products like dairy and eggs. There are different types of vegetarian diets, such as lacto-vegetarian (includes dairy) and ovo-vegetarian (includes eggs).*
- **Ketogenic diet:** *A high-fat, low-carbohydrate diet that forces the body to burn fat for energy. It is often used for weight loss and managing certain medical conditions.*

*These are just a few examples of the many types of diets that people may follow for health, ethical, cultural, or personal reasons. It's essential to consult with a healthcare provider or registered dietitian before making significant changes to your diet to ensure it meets your nutritional needs.*

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