

# Calorie Balance



The Chicago Partnership for Health Promotion is funded by the USDA Food Stamp Program to encourage Chicago families to make healthier food choices, learn to prepare and consume healthier foods every day and be more physically active. The University of Illinois at Chicago Neighborhoods Initiative is the Land Grant Administrative Hub for CPHP. The USDA, UIC and CPHP are equal opportunity providers and employers. For more information about partnership or CPHP programs in your community, contact CPHP at 312-355-3659. [www.cphp.uic.edu](http://www.cphp.uic.edu)

## Biological, Behavioral, and Environmental Factors Associated with Overweight and Obesity

### No quick answer to the question, "what leads to overweight and obesity?"

The obesity epidemic we keep hearing about did not occur overnight. Obesity and overweight are chronic and treatable conditions. Many factors play a role in obesity. This makes it a complex health issue to address. Behavior, environment, and genetic factors all contribute to an individual being overweight or obese.

### Overweight and Obesity: An Overview

- Overweight and obesity result from an energy imbalance. This involves eating too many calories and not getting enough physical activity.
- Body weight is the result of genes, metabolism, behavior, environment, culture, and socioeconomic status.
- Behavior and environment play a large role causing people to be overweight and obese. These are the greatest areas for prevention and treatment actions.

Overweight and obesity result from energy imbalance over a long period of time. The cause of energy imbalance for each individual may be due to a combination of several factors. Individual behaviors, environmental factors, and genetics all contribute to the complexity of the obesity epidemic.

**Energy imbalance** - When the calories eaten exceed the calories used.



*Energy Balance is like a scale. When calories consumed are greater than calories used weight gain results.*

#### **Weight Gain:**

Calories Consumed > Calories Used

#### **Weight Loss:**

Calories Consumed < Calories Used

#### **No Weight Change:**

Calories Consumed = Calories Used



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Genetics and the environment may increase the risk of personal weight gain. However, the food and exercise choices a person makes in contribute to overweight and obesity. Behavior can increase a person's risk for gaining weight.

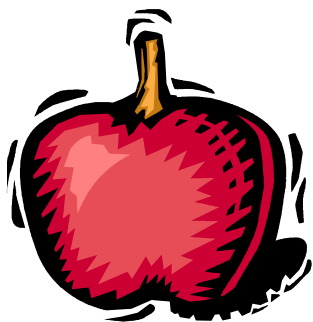
Looking back at the energy balance scale, weight gain is a result of extra calorie consumption, decreasing calories used (physical activity) or both. Personal choices concerning calorie consumption and physical activity can lead to energy imbalance.

## Calorie Consumption

In America, a changing environment has broadened food options and eating habits. Grocery stores stock their shelves with a greater selection of products. Pre-packaged foods, fast food restaurants, and soft drinks are also more accessible. While such foods are fast and convenient they also tend to be high in fat, sugar, and calories. Choosing many foods from these areas may contribute to an excessive calorie intake. Some foods are marketed as healthy, low fat, or fat-free, but may contain more calories than the fat containing food they are designed to replace. It is important to read food labels for nutritional information and to eat in moderation.

Portion size has also increased. People may be eating more during a meal or snack because of larger portion sizes. This results in increased calorie consumption. If the body does not burn off the extra calories consumed from larger portions, fast food, or soft drinks, weight gain can occur.

Choosing a variety of healthy foods in the correct portion sizes is helpful for achieving and maintaining a healthy weight. The Dietary Guidelines for Americans is a good resource to help people guide their dietary habits.



## Calories Used

Our bodies need calories for daily functions such as breathing, digestion, and daily activities. Weight gain occurs when calories consumed exceed this need. Physical activity plays a key role in energy balance because it uses up calories consumed.

**Physical activity** is any exercise or movement produced with the muscles that results in spending energy with a range of activities such as

- **Occupational work**  
Carpentry, construction work, waiting tables, farming
- **Household chores**  
Washing floors or windows, gardening or yard work
- **Leisure time activities**  
Walking, skating, biking, swimming, playing Frisbee, dancing Structured sports or exercise Softball, tennis, football, aerobics

Regular physical activity is good for overall health. Physical activity decreases the risk diseases such as colon cancer, diabetes, and high blood pressure. It also helps to control weight, contributes to healthy bones, muscles, and joints; reduces falls among the elderly; and helps to relieve the pain of arthritis. Physical activity does not have to be strenuous to be beneficial. Moderate physical activity, such as 30 minutes of brisk walking five or more times a week, also has health benefits.

Most Americans are sedentary. As a result, the overall amount of energy expended in our daily lives has diminished. According to the Behavioral Risk Factor Surveillance System, in 2000 more than 26% of adults reported no leisure time physical activity.

The belief that physical activity is limited to exercise or sports, may keep people from being active. Another myth is that physical activity must be vigorous to achieve health benefits. Physical activity is any bodily movement that results in an expenditure of energy. Moderate-intensity activities such as household chores, gardening, and walking can also provide health benefits. Confidence in one's ability to be active will help people make choices to adopt a physically active lifestyle.



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## Environment

People may make decisions based on their environment or community. For example, a person may choose not to walk to the store or work because of a lack of sidewalks. Communities, homes, and workplaces each shape health decisions. With fewer options for physical activity and healthy eating, it becomes more difficult for people to make good choices. *The Surgeon General's Call to action to Prevent and Decrease Overweight and Obesity 2000* identified action steps to prevent and decrease obesity and overweight. Below is a table listing the steps related to possible environmental factors.

Location	Environmental Factors	Potential Impact on Energy Balance
<b>Home</b>	<ul style="list-style-type: none"> <li>• Reduce time spent watching television and in other sedentary behaviors</li> <li>• Build physical activity into regular routines</li> </ul>	<ul style="list-style-type: none"> <li>• Increases daily and leisure time physical activity</li> <li>• Increases calories used</li> </ul>
<b>Schools</b>	<ul style="list-style-type: none"> <li>• Ensure that the school breakfast and lunch programs meet nutrition standards</li> <li>• Provide food options that are low in fat, calories, and added sugars</li> <li>• Provide all children, PK-12<sup>th</sup>, with quality daily physical education</li> </ul>	<ul style="list-style-type: none"> <li>• Decreases excessive calorie consumption</li> <li>• Increases daily physical activity</li> </ul>
<b>Work</b>	<ul style="list-style-type: none"> <li>• Create more opportunities for physical activity at work sites</li> </ul>	<ul style="list-style-type: none"> <li>• Increases daily physical activity</li> <li>• Increases calories used</li> </ul>
<b>Community</b>	<ul style="list-style-type: none"> <li>• Promote healthier choices including at least 5 servings of fruits and vegetables a day, and reasonable portion sizes</li> <li>• Encourage the food industry to provide reasonable food and beverage portion sizes</li> <li>• Encourage food outlets to increase the availability of low-calorie, nutritious food items</li> <li>• Create opportunities for physical activity in communities</li> </ul>	<ul style="list-style-type: none"> <li>• Decreases in excessive calorie consumption</li> <li>• Increases leisure time physical activity</li> </ul>



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## Genetics

### How do genes affect obesity?

Science shows that genetics plays a role in obesity. Genes can directly cause obesity in disorders such as Bardet-Biedl syndrome and Prader-Willi syndrome.

However genes do not always predict future health. Genes and behavior may both be needed for a person to be overweight. In some cases multiple genes may increase one's susceptibility for obesity and require outside factors; such as abundant food supply or little physical activity.

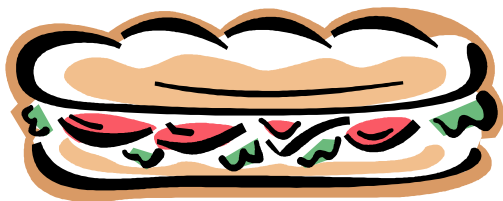
## Other Factors

### Diseases and Drugs

Some illnesses may lead to obesity or weight gain. These may include Cushing's disease, and polycystic ovary syndrome. Drugs such as steroids and some antidepressants may also cause weight gain.

Ask your doctor or nurse practitioner about illnesses, medications, or psychological factors are contributing to weight gain or making weight loss difficult.

Weight gain is caused by more calories in as food and drink than are spent in exercise and daily living. If your medications influence your appetite, make you hungry, effect your metabolism or limit your ability to be active you may need to give more energy to help yourself meet you own weight, eating, exercising and health goals.



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