

Motivation and Hunger

- hunger is a complicated motivation; people don't eat only because they need food
- Many factors, both biological and environmental, influence hunger. These factors interact with one another in many ways.

Biological Factors

Researchers believe certain genetic differences among individuals play a role in hunger. The brain, the digestive system, and hormones are all involved in influencing hunger at the biological level.

Genetic Differences Among Individuals

Researchers theorize that people have a genetically influenced set point for body weight. If a person's weight rises too far above his set point, his appetite decreases, or he uses up more energy. His weight then returns to its set point. If, on the other hand, his weight falls too far below his set point, his appetite increases, or he uses less energy. Once again, he returns to his set point.

The set point is maintained not only by food intake and energy expenditure but also by the body's basal metabolic rate, another genetically influenced variable. Basal metabolic rate is the rate at which a person at complete rest uses energy.

Some researchers disagree about set points and believe that people can reset their normal weight if they add or lose pounds slowly. They also point out that people usually gain weight when they have easy access to rich foods.

The Brain

Researchers believe three areas in the hypothalamus play a key role in regulating hunger:

1. The lateral hypothalamus is involved in recognizing hunger. In rats, damage to the lateral hypothalamus results in loss of interest in eating.
2. The ventromedial nucleus of the hypothalamus is involved in recognizing satiety or fullness. In rats, damage to the ventromedial nucleus results in excessive eating and weight gain.
3. The paraventricular nucleus of the hypothalamus is also involved in hunger regulation. When the paraventricular nucleus of a rat is damaged, the rat will eat a very large quantity of food at each meal.

The Digestive System

The digestive system influences hunger in several ways. For instance, after a meal, the stomach and intestines send nerve impulses to the brain to help people recognize that they are full.

The body converts food to glucose, a simple sugar that acts as an energy source for cells. The level of glucose in the blood affects hunger. Low blood glucose increases hunger; high blood glucose decreases hunger.

Hormones

The hormone insulin also plays an important role in regulating hunger. Insulin allows cells to access glucose in the blood. When the pancreas secretes insulin, hunger increases.

Diabetes is a condition caused by a deficiency of insulin. People who have diabetes take injections of insulin. Without these injections, their cells would be unable to use the glucose in their blood.

Another hormone involved in hunger regulation is leptin. Fat cells in the body secrete leptin and release it into the blood. When the leptin level in the blood is high, hunger decreases.

Environmental Factors

Many environmental factors influence hunger, including the availability of rich foods, taste preferences, habits, memory, stress, and cultural attitudes.

Availability of rich foods: People tend to gain weight when rich foods are plentiful.

Preferences: Some taste preferences appear to be innate, such as the preference for fatty foods.

However, people acquire most taste preferences through conditioning or observational learning. People tend to prefer familiar foods. These preferences have an influence on hunger and food intake.

Habits: People learn habits, such as when and how much they eat. These habits also influence hunger and food intake.

Memory: The memory of what people last ate and when they ate it influences hunger.

Stress: The increased physiological arousal associated with stressful situations can stimulate hunger in some people. In other people, stress decreases hunger.

Cultural attitudes: Cultural attitudes about ideal body size and shape have a strong influence on what and how much people eat.

Eating Disorders

The prevalence of the eating disorders anorexia nervosa and bulimia nervosa in weight-conscious cultures shows that cultural factors can have a negative influence on hunger and body weight. Anorexia nervosa is characterized by extremely low body weight and a distorted body image. Bulimia nervosa is characterized by bouts of bingeing, followed by compensatory behaviors such as purging, fasting, or heavy exercise to rid the body of food. Both disorders can be life-threatening.