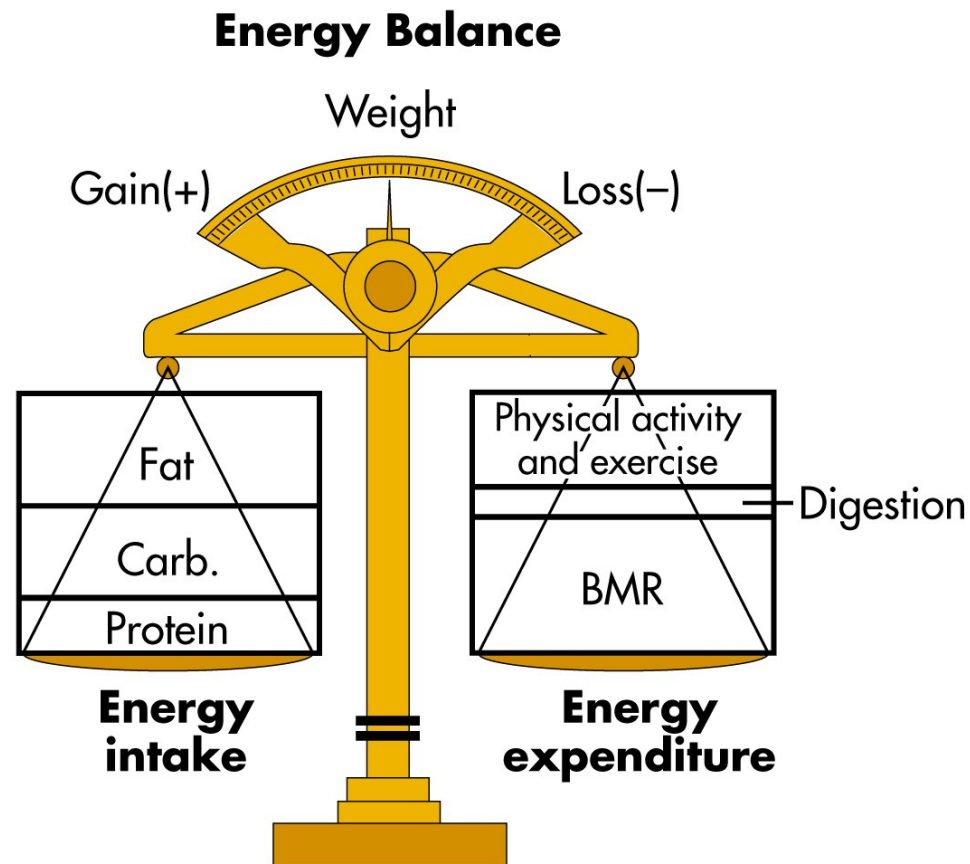


Hunger and Weight Regulation



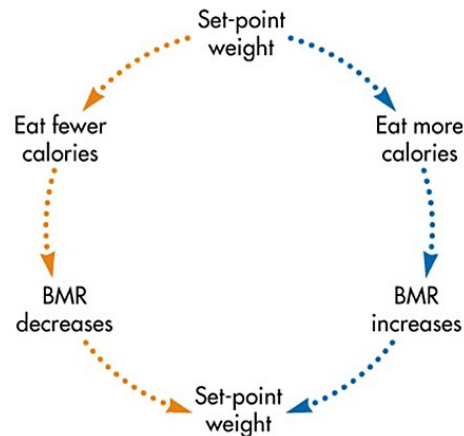
There are biological, psychological, and environmental factors that regulate our eating behavior.

Set-Point Theory / Settling Point Theory

Many researchers believe that there is a set point—a biologically determined “standard” around which body weight is regulated.

For example,

- As you eat fewer calories, your Basal Metabolic Rate (BMR) decreases
- As you eat more calories, your Basal Metabolic Rate (BMR) increases



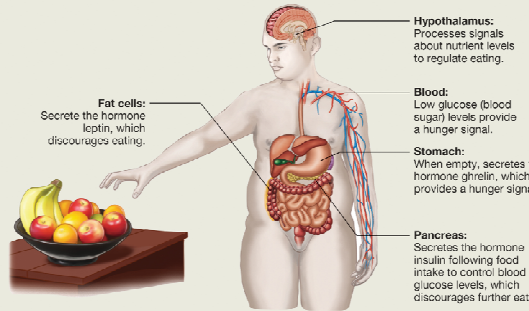



When rats are

- overfed, (metabolism increases)
- then put on diets, (metabolism slows—slower weight loss)
- then overfed again, (metabolism increases—faster weight gain)

they gain weight faster and lose it more slowly the second time around (page 333).

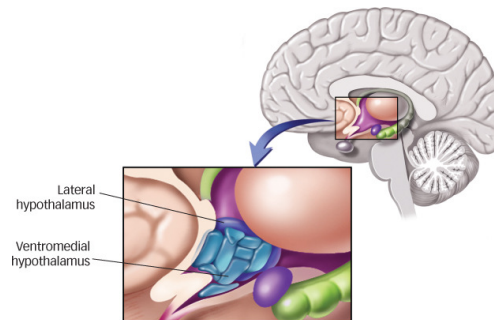
Motivation to Eat

There are biological factors, psychological, and environmental factors that influence our eating behavior.

Biological Mechanisms	Learning Mechanisms (psychological and environmental)
<p>LEARNING TIP Biological Mechanisms That Motivate Eating</p> <p>Various biological systems work together to control eating. Detectors in the body monitor levels of vital nutrients. These signals from the body are processed in the hypothalamus and encourage you to eat as needed.</p>  <p>Hypothalamus: Processes signals about nutrient levels to regulate eating.</p> <p>Blood: Low glucose (blood sugar) levels provide a hunger signal.</p> <p>Stomach: When empty, secretes the hormone ghrelin, which provides a hunger signal.</p> <p>Pancreas: Secretes the hormone insulin following food intake to control blood glucose levels, which discourages further eating.</p> <p>Fat cells: Secrete the hormone leptin, which discourages eating.</p> <p><small>Copyright © 2022 W. W. Norton & Co., Inc.</small></p>	 <p>FIGURE 9.9</p> <p><small>Amiko/Alamy Stock Photo; Blarney, Susanna/Getty Images; Copyright © 2022 W. W. Norton & Co., Inc.</small></p>  <p>FIGURE 9.11</p> <p><small>Shutterstock.com; Copyright © 2022 W. W. Norton & Co., Inc.</small></p>  <p>FIGURE 9.12</p> <p><small>Shutterstock.com; Copyright © 2022 W. W. Norton & Co., Inc.</small></p>
<p>Signals from the body</p> <ul style="list-style-type: none"> • Glucose levels • Ghrelin • Leptin <p>The Brain</p> <ul style="list-style-type: none"> • Ventromedial hypothalamus • Lateral hypothalamus 	<ul style="list-style-type: none"> • Classical Conditioning • Familiarity • Cultural Influences • Flavor

Biological Factors

- Glucose levels: low levels associated with hunger.
- The hormone ghrelin (sort of sounds like growling): the presence of ghrelin increases the motivation to eat.
- The hormone leptin: leptin is released by fat cells. When a lot of leptin is in the bloodstream, the desire to eat slows.
- Damage to the ventromedial hypothalamus increases the eating behavior in rats. They will gorge themselves on “the good food” and continue eating beyond what most normally would eat.
- Damage to the lateral hypothalamus decreases the desire to eat (and other behaviors).



- Sleep deprivation increases eating behavior.

Motivation to Eat is Also Influenced by Learning

- Classical Conditioning: We are conditioned to be hungry at certain times of the day when we habitually eat. Many people eat around noon and around 6:00 pm.

US	UR	NS	CS	CR
Food	Hunger	Noon	Noon	hunger

- Familiarity: We tend to eat food that we are familiar with and eat new foods in familiar settings.
- Cultural Influences: Our culture influences our food preferences.
- Flavor: Foods that are sweet and having a variety of foods flavors increases food consumption.



FIGURE 9.9

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Blondy, Susanna/Getty Images
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FIGURE 9.11



FIGURE 9.12

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Other Psychological Aspects of Eating

Often people eat when they aren't hungry. Factors other than biology are at work that affect eating behavior. Attitudes, habits, and psychological needs regulate food intake.

- Socializing children to “finish the food on your plate” increases the likelihood that we will eat the remaining food on our plate, even if we feel full.
- While watching TV, we habitually eat and can lead us to eat even when we don't feel hungry.
- Modeling: We observe others about what to eat, and how much to eat.
- Fast food commercials try to associate eating their food with fun or family (see classical conditioning).

People have a Need to Belong

People are motivated to form groups and affiliate with others and considered adaptive.