

Chapter 13

13.1 Food Insecurity

Food insecurity – unreliable access to a sufficient supply of nourishing food

- About 17.4 million U.S. households (roughly 14%) experienced food insecurity in 2011
- About 6.8 million households experienced very low food security—eating patterns were disrupted and food intake was reduced
- Those at higher risk are households with lower incomes

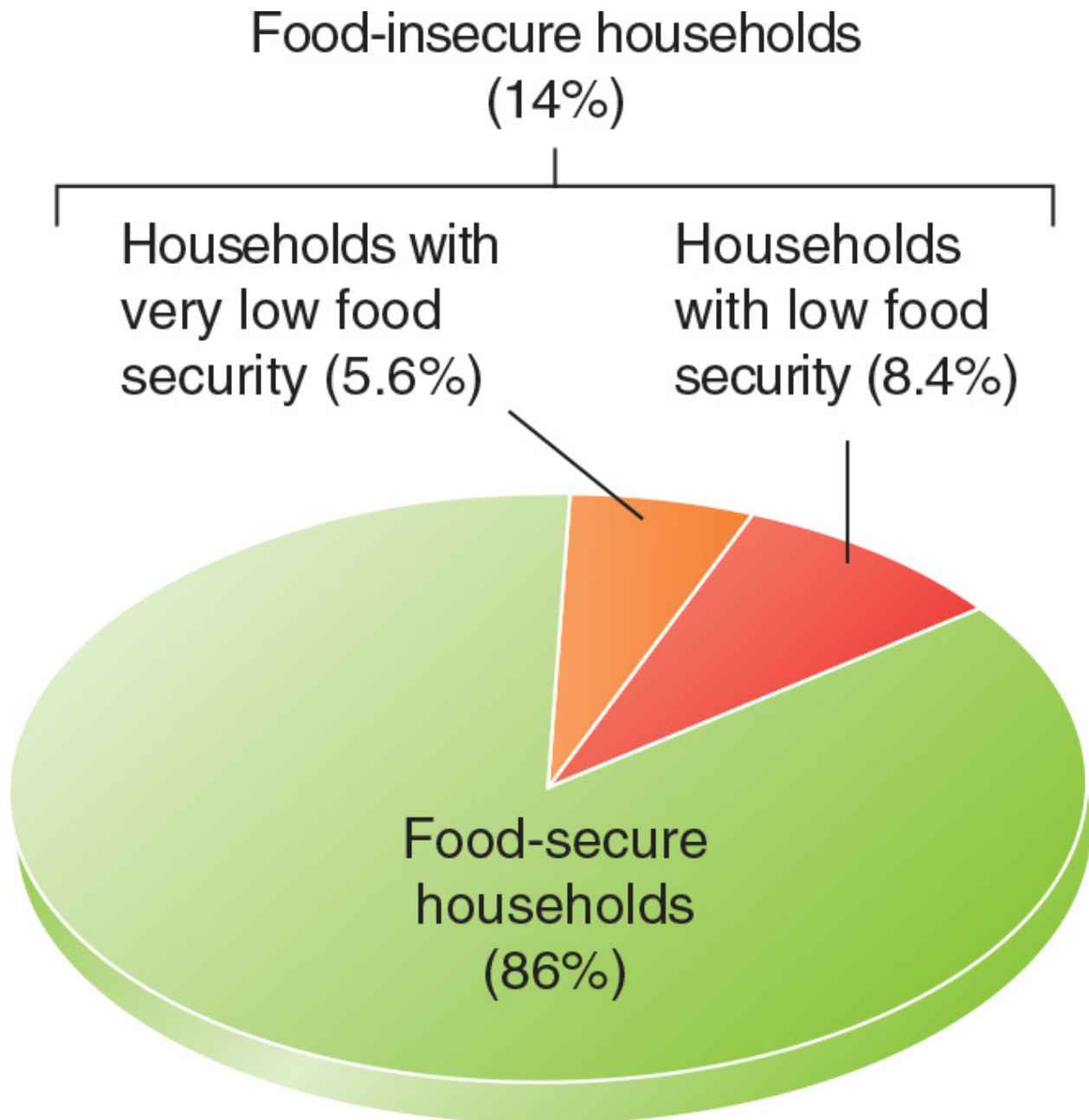


Figure 13.1: Food Insecurity

13.2 Food Access

- **Famine** is a severe food shortage affecting a large percentage of the population in a limited geographical area
 - 20–43 million people died in the great famine in China from 1958 to 1961
- **Overpopulation** can occur when resources are insufficient to support the number of people living there

- Uneven distribution of food

13.3 Chronic Hunger

- Local conditions can contribute to chronic hunger
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 - Cash crops grown to be sold rather than eaten, such as cotton or tobacco
 - Lack of infrastructure
 - Impact of disease

13.4 Climate Change Threatens Food Security

- **Global warming** is the general term used for the increase of about 1.5°F in temperature that has occurred on the Earth's surface over the past century.
 - Many scientists believe this is due to the carbon dioxide produced by human activities
 - A 2015 study attributed 75% of heat extremes and 18% of precipitation extremes to global warming

13.5 Sustainability

- **Sustainability** is the ability to satisfy basic economic, social, and security needs now and in the future without undermining the natural resource base and environmental quality on which life depends
 - Sustainable practices can help
 - * Reduce pollution of soil and water
 - * Maintain or improve food diversity
 - * Reduce the number of **food deserts**—geographic areas where people lack access to affordable, nutritious food



Figure 13.2: Food Ethics: Sustainability

- Food movement initiatives that aim to promote sustainability and food diversity include
 - Family farms
 - Community supported agriculture (CSA)
 - Farmers' markets
 - Urban agriculture
 - School gardens
 - Entrepreneurship investing in food startups
 - Corporate involvement

13.6 Industrial Agriculture

- **Green Revolution**
 - Massive program that has improved the technology and practices in agriculture
- **High yield varieties (HYVs)**

- New forms of food products (like grains) that were produced by cross-breeding plants and selecting the most desirable traits

13.7 Food Diversity

Food diversity is the variety of difference species of food crops available

- In the 1960s the federal Agricultural Adjustment Act provided financial incentives for farmers to grow singles crops that were cultivated on a massive scale called **monocultures**

13.8 Food Industry Influences America's Diet

- In 2015 lobbyists were recorded spending the following amounts to promote certain aspects of food production
 - Livestock: \$2.9 million
 - Dairy: \$7 million
 - Sugar: \$10.3 million
 - Food manufacturers: \$18.3 million
 - Beer, wine, and liquor: \$25 million

13.9 International Initiatives

- There are many international initiatives that strive to increase access to nourishing foods
 - WHO and UNICEF promote breastfeeding
 - United Nations World Food Programme
 - USAID and Peace Corps agricultural education programs

13.10 National and Local Programs

- In the United States many programs help to increase access to nourishing foods
 - SNAP
 - WIC
 - National School Lunch and Breakfast Program
 - USDA Commodity Food Program
 - CDC Healthful Corner Store

13.11 Food Ethics: Food Equity

- **Fair trade** – trading partnership promoting equity in international trading relationships and contributing to sustainable development by securing the rights of marginalized producers and workers
 - Born in response to the exploitation of farm laborers around the world
 - Depends on support from consumers purchasing Fair Trade products
- **Food equity** – sharing the world's food and other resources fairly
 - One in seven people in the world is chronically undernourished, almost all of them in developing nations
 - The major cause of undernutrition is unequal distribution of food because of poverty



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Figure 13.3: Food Ethics: Food Equity

13.12 Choose Foods That Are Healthful for You

- Buy organic or reduce synthetic pesticide use
- Purchase local produce and support local economy
- Choose whole foods or less processed foods
- Avoid empty Calorie foods and beverages
- When eating out ask for nutrition information

13.13 In Depth: Malnutrition

- Approximately 51 million children do not weigh enough for their height
- Severe acute malnutrition (SAM)
 - Condition in which energy intake is so inadequate that the child experiences a lower body weight than normal
- Approximately 161 million children experience **stunted growth** which causes them to be shorter than expected for their age.
- SAM dramatically increases a population's rate of :
 - Maternal mortality:** deaths of a woman during pregnancy, childbirth, or in the immediate postpartal period
 - Infant mortality:** deaths of infants between birth and 1 year of age
- Micronutrient deficiencies can lead to preventable diseases
 - Iron deficiency anemia (most common deficiency worldwide)
 - Prenatal iodine for fetal brain development
 - Vitamin A deficiency is the leading cause of blindness in children

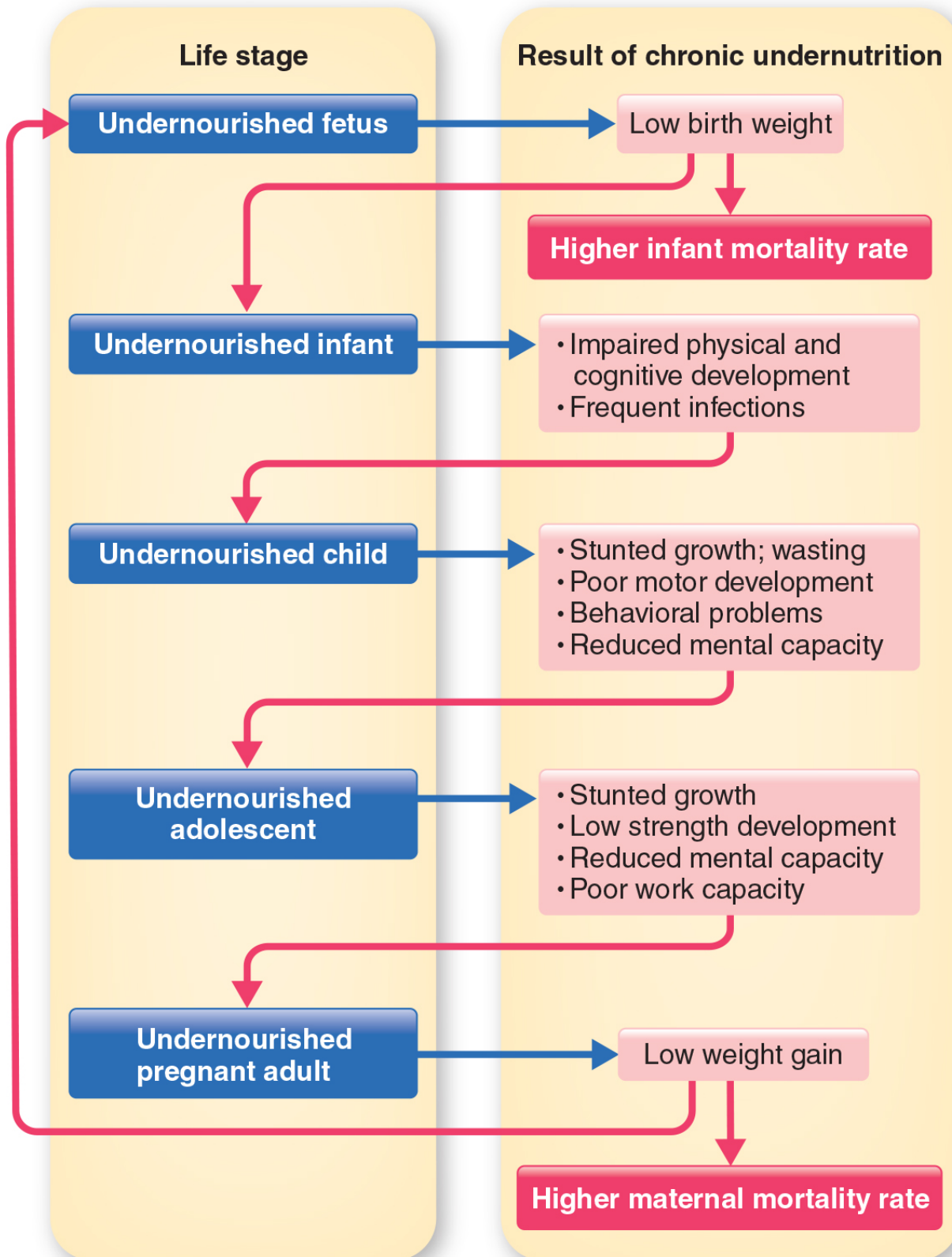


Figure 13.4: Malnutrition

- **Nutrition paradox** is characterized by the coexistence of stunting and overweight/obesity within the same region, the same household, and even the same person
 - The WHO identifies two key factors:
 - * A trend toward decreased physical activity
 - * A global shift toward increased consumption of energy dense foods
- Poverty-obesity paradox occurs when obesity is more prevalent in low-income populations
 - Some researchers have also observed a so-called **hunger-obesity paradox** in which low income people are obese while also deficient in one or more nutrients
- **Food deserts** also contribute to malnutrition and poor food access
 - Characterized as geographic areas where people lack access to fresh, healthful, and affordable food