Chapter 14

Hunger at Home and Abroad
Objectives for Chapter 14

- Define hunger, food security, and food insecurity.
- Summarize the extent of food insecurity in the United States and worldwide.
- List and describe three causes of food insecurity and poverty in the United States.
- List and describe three causes of food insecurity and poverty worldwide.
- List three populations at highest risk for experiencing food insecurity.
- Describe the consequences of food insecurity.
- Describe the two steps you can take to help eradicate food insecurity.
What Is Food Insecurity and Why Does It Exist?

- The USDA describes an American household as **food secure** if it has access at all times to enough food for an active, healthy life for all household members.

- **Food insecurity** is a situation in which members of a household are uncertain whether they will have the resources they need to get adequate amounts of nutritious food.
### Table 14.1

#### Ranges of Food Security

<table>
<thead>
<tr>
<th>Level of Food Security</th>
<th>Description of Conditions in the Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>High food security</td>
<td>No reported indications of food-access problems or limitations</td>
</tr>
<tr>
<td>Marginal food security</td>
<td>One or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.</td>
</tr>
<tr>
<td>Low food security</td>
<td>Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.</td>
</tr>
<tr>
<td>Very low food security</td>
<td>Reports of multiple indications of disrupted eating patterns and reduced food intake</td>
</tr>
</tbody>
</table>

Prevalence of Food Insecurity in the United States

Figure 14.1

[Map showing food insecurity levels across the United States]
Spectrum of Food Security

Food security  Food insecurity  Malnutrition  Hunger  Starvation  Death

Figure 14.2
What Is Food Insecurity and Why Does It Exist?

- Food insecurity in the U.S. is a major problem
  - In 2008, 14.6 percent of American households (49.1 million people) were food insecure at least sometime during the year
  - That is an increase of 3.5 percent from 2007 and is the highest rate since 1995, the year the first food security survey was conducted
- Though these numbers might be surprising, they are lower than in many other countries because the United States is a developed country
Developed, Developing, and Under-developed Countries Around the World

Figure 14.3

Examples of developed countries
United States
Canada
Japan
Australia
New Zealand
Most Western European nations

Examples of developing countries
China
India
Mexico
Brazil
Mongolia
Saudi Arabia

Examples of underdeveloped countries
Ethiopia
Sudan
Angola
Haiti
Sierra Leone
Yemen
What Is Food Insecurity and Why Does It Exist?

- Worldwide, the Food and Agriculture Organization of the UN estimates that, in 2009, 1.2 billion people (1/7 of the world’s population) were hungry.
- In underdeveloped countries, such as those in central Africa, more than 50 percent of the population is undernourished.
- As of 2008, the World Bank has estimated that 982 million poor people in developing countries live on $1.25 a day or less.
What Is Food Insecurity and Why Does It Exist?

- In **developed** countries, food insecurity typically results from factors affecting **individuals**, such as poverty or poor health.

- In **developing and underdeveloped** countries, **regional problems** such as discrimination, armed conflict, natural disaster, and population overgrowth can be as significant as individual hardships.
What Is Food Insecurity and Why Does It Exist?

- In the United States, food insecurity is often caused by poverty
  - In the United States, a family of four is considered impoverished if its annual income is at or below $22,050
  - In 2008, about 13.2 percent of the U.S. population lived at or below the poverty level
  - Those at greatest risk of experiencing poverty and food insecurity are households headed by a single woman, those with children, those with members in a minority group, and those located in the inner city.
US Poverty Rates by Age: 1959 to 2012

Figure 5.
Poverty Rates by Age: 1959 to 2012

Note: The data points are placed at the midpoints of the respective years. For information on recessions, see Appendix A. Data for people aged 18 to 64 and 65 and older are not available from 1960 to 1965.

Number and Proportion of Undernourished People

Figure 14.4

*Including Taiwan Province of China

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What Is Food Insecurity and Why Does It Exist?

- Steady employment does not guarantee that an individual or family won’t experience food insecurity.

- In 2003, about 7.4 million individuals were classified among the **working poor**, which are households in which, once the monthly expenses are paid, there is often too little money available to feed everyone adequately.

- People living in poverty often try to shop for value, opting for cheap food rather than nutritious food.
Employment Status of Food-Insecure Households

- No one in labor force or disabled or retired: 9%
- All retired: 6%
- One or more adults employed full time: 33%
- One or more adults employed part time, and none full time: 13%
- One or more adults unemployed and none employed: 10%

Figure 14.5
<table>
<thead>
<tr>
<th>Lunch Item</th>
<th>Total Calories</th>
<th>Total Fat (grams)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fast-Food Burger Meal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fast-food burger:</td>
<td>540</td>
<td>29</td>
<td>$4.05</td>
</tr>
<tr>
<td>2 beef patties on a sesame seed bun with lettuce, cheese, “special sauce,” pickles, and onions</td>
<td>380</td>
<td>19</td>
<td>$1.72</td>
</tr>
<tr>
<td>Medium order of french fries</td>
<td>380</td>
<td>19</td>
<td>$1.72</td>
</tr>
<tr>
<td><strong>Cost of a fast-food burger meal</strong></td>
<td><strong>920</strong></td>
<td><strong>48</strong></td>
<td><strong>$5.77</strong></td>
</tr>
<tr>
<td><strong>Homemade Packed Lunch</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homemade turkey sandwich:</td>
<td>350</td>
<td>5</td>
<td>$1.46</td>
</tr>
<tr>
<td>3 ounces oven-roasted turkey on 2 pieces of whole-wheat bread with 1 slice tomato, 1 leaf lettuce, and 1 tsp mustard</td>
<td>30</td>
<td>0</td>
<td>$.40</td>
</tr>
<tr>
<td>Baby carrots, 3 oz</td>
<td>30</td>
<td>0</td>
<td>$.40</td>
</tr>
<tr>
<td>Granola bar, 1 Oat &amp; Honey</td>
<td>100</td>
<td>3</td>
<td>$0.60</td>
</tr>
<tr>
<td><strong>Cost of a homemade packed lunch</strong></td>
<td><strong>480</strong></td>
<td><strong>8</strong></td>
<td><strong>$2.46</strong></td>
</tr>
</tbody>
</table>

What Is Food Insecurity and Why Does It Exist?

Health problems contribute to food insecurity among Americans

- Health issues can set the stage for food insecurity
  - Chronic illness
  - Disability
  - Substance abuse
  - Mental illness (including depression)
What Is Food Insecurity and Why Does It Exist?

- Global food insecurity is caused by regional issues
  - Discrimination
  - Political sanctions and armed conflicts
  - Crop failure, natural disasters, and wasteful agricultural practices
  - Population overgrowth
Who Is at Increased Risk for Undernutrition?

The following populations are at increased risk for undernutrition:

- Pregnant and lactating women
- Infants
- Children
- The critically ill
- Older adults
Downward Spiral of Poverty and Hunger

1. Lack of food
2. Fatigue, apathy, no ambition
3. Compromised health and disease
4. Weight loss
5. Anemia
6. Decreased growth
7. Loss of muscle mass
8. Malabsorption in GI tract

Figure 14.6
What Are the Effects of Chronic Malnutrition?

Impaired growth and development

- **Stunting** is primarily manifested in early childhood and includes malnutrition during fetal development; once it occurs, it is usually permanent.

Impaired immunity and disease

- **Wasting** is a condition caused by extremely low energy intake from too little food; sometimes referred to as acute malnutrition.
What Are the Effects of Chronic Malnutrition?

Increased rates of infant and child mortality

- Approximately 12 million children younger than 5 die each year in developing countries from preventable causes such as diarrhea, measles, and malaria; malnutrition is linked to more than half these childhood deaths
<table>
<thead>
<tr>
<th>Disease/Condition</th>
<th>Cause</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>Pathogenic infections</td>
<td>Severe dehydration</td>
</tr>
<tr>
<td>Acute respiratory infection</td>
<td>Virus or bacteria</td>
<td>Pneumonia, bronchitis, colds, fast breathing, coughing, and fever</td>
</tr>
<tr>
<td>Malaria</td>
<td>Parasite (transmitted by a mosquito)</td>
<td>Fever, weakness, sweating, shivering, shaking, nausea, liver failure, infected red blood cells, kidney failure or bleeding in the kidneys</td>
</tr>
<tr>
<td>Measles</td>
<td>Respiratory illness caused by a highly contagious virus, from airborne droplets (coughing/sneezing)</td>
<td>Pneumonia, brain inflammation, infection, diarrhea, and seizures</td>
</tr>
<tr>
<td>Vitamin or Mineral</td>
<td>Effects</td>
<td>Incidence</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>Eye disease; blindness</td>
<td>Vitamin A deficiency is the leading cause of preventable blindness in children in developing countries.</td>
</tr>
<tr>
<td>Iron</td>
<td>Iron-deficiency anemia</td>
<td>Extremely common worldwide. Anemia is most common among 7- to 12-month-old infants; toddlers and young children (&lt; 8 years of age); women of reproductive age; and anyone who has lost large amounts of blood.</td>
</tr>
<tr>
<td>Iodine</td>
<td>Goiter, cretinism</td>
<td>Up to 790 million people (13% of the world’s population) have some form of iodine deficiency, goiter, or mental impairment caused by lack of iodine.</td>
</tr>
<tr>
<td>B vitamins</td>
<td>Folic acid: macrocytic anemia</td>
<td>Folic acid deficiency is common among women of reproductive age; individuals with limited diets and reduced vegetable consumption; individuals who abuse alcohol; and obese individuals.</td>
</tr>
<tr>
<td></td>
<td>Vitamin B&lt;sub&gt;12&lt;/sub&gt;: pernicious anemia</td>
<td>B&lt;sub&gt;12&lt;/sub&gt; deficiency is common among elderly men and women (&gt;50 years of age); African-American adults; individuals who have malabsorption syndromes; and persons who practice extreme vegetarianism.</td>
</tr>
</tbody>
</table>

How Can We Reduce Food Insecurity?

- At the local level, individuals, families, churches, and community relief agencies seek out and assist people who have insufficient resources.
- Corporations and governments can help solve the hunger problem by providing food aid and creating economic opportunity.

- Nutrition for Niger (Plumpy'nut)
  http://youtu.be/6VSCMoRDp2c
<table>
<thead>
<tr>
<th>Program</th>
<th>Eligibility</th>
<th>Description</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental Nutrition Assistance Program (SNAP), (formerly the Food</td>
<td>Low income (for a family of four, the net monthly income cannot exceed $1,883)</td>
<td>Individuals who are eligible for food stamps are issued a debit card to purchase specified foods, such as fruit, vegetables, cereals, meats, and dairy products, at their local authorized supermarket. Items such as alcohol, tobacco products, and household items are not covered.</td>
<td>In 2009, more than 31 million people per month in the United States</td>
</tr>
<tr>
<td>Special Supplemental Nutrition Program for Women, Infants and Children (WIC)</td>
<td>At-risk low-income pregnant and lactating women, infants, and children less than 5 years old</td>
<td>The program provides nutritious, culturally appropriate food, including tortillas, brown rice, soy-based beverages, and a wide choice of fruits and vegetables, to supplement the diet. There are even some organic forms of WIC-eligible foods. The program also emphasizes nutrition education and offers referrals to health care professionals.</td>
<td>9.3 million women, infants, and children per month</td>
</tr>
<tr>
<td>National School Lunch Program</td>
<td>Children with families with incomes at or below 130% of the poverty level are eligible for free meals and those with incomes between 130% and 185% of the poverty level are eligible for reduced-price meals</td>
<td>Eligible children receive free or reduced-price lunches each year. A subsidized breakfast is sometimes also available at schools.</td>
<td>More than 30.5 million American children per year</td>
</tr>
<tr>
<td>Summer Food Service Program</td>
<td>Available to communities based on income data</td>
<td>Federal program that combines a meal or feeding program with a summer activity program for children</td>
<td>Almost 2 million children at 31,000 sites</td>
</tr>
<tr>
<td>Child and Adult Care Food Program</td>
<td>Available to communities based on income data</td>
<td>Program provides nutritious meals to low-income children and senior adults who receive day care or adult care outside the home. There are income guidelines and specific menu requirements for program participation.</td>
<td>3 million children and 90,000 adults receive meals and snacks each day as part of this program</td>
</tr>
<tr>
<td>Congregate Meals for the Elderly and Meals on Wheels</td>
<td>Age 60 or over</td>
<td>The programs provide meals at a community site or delivered to the home.</td>
<td>More than 250 million meals served at sites across the country</td>
</tr>
</tbody>
</table>
Food Stamp Challenge

- [http://www.youtube.com/watch?v=UalyrytH8tc](http://www.youtube.com/watch?v=UalyrytH8tc)
- What would you do with $50/week?
- The 3 P’s (plan, purchase, prepare)
How Can We Reduce Food Insecurity?

Better land management and proper sanitation

- Food security and land access are directly related
- Water
- Food fortification

Education is key

- One study found that societies with a more educated population enjoyed higher earning potential, improved sanitation, more small businesses and rural enterprises, lower rates of infant mortality, improved child welfare, and a higher likelihood of technological advancement
Hungry & Overweight: How children can be both hungry and overweight at the same time.

How is it possible?
Rates of Food Insecurity

Who is food insecure in the US?

- 16 million children (nearly 1 in 5)

Up until 2008, numbers of food insecure Americans remained fairly stable, ranging between 34-36 million people, and in 2008 food insecurity numbers leapt to 49 million and have hovered around 50 million for the past five years.
Rates of Obesity

Food insecure

16 million kids

Overweight

23 million kids
How is overweight and obesity defined?

For children:

Overweight = BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex

Obese = BMI at or above the 95th percentile for children of the same age and sex
Rates of Obesity

- More than 1/3 of adults are obese (35.7%)
- Childhood obesity affects 17% of children
- Every state has at least a 20% prevalence of obesity
- 39 states have at least a 25% prevalence of obesity, and twelve of these states have a prevalence of at least 30%
How can food insecurity and overweight coexist?
How can food insecurity and overweight coexist?

- Just because someone is overweight or obese, it doesn’t mean that they are well nourished. For example, if someone eats calorie-dense fast food items all day, they probably aren’t getting enough fruits, vegetables, and low-fat dairy and the valuable nutrients they need. This is especially true for food insecure families.
Key drivers of food insecurity in the past decade have been

- Higher poverty
- Unemployment
- Decreased home ownership.

Families facing food insecurity may lack consistent access to healthy food, have high levels of stress, and choose inexpensive, calorie-dense foods because they don’t have access to nutrient-dense alternatives. All of these factors can lead to nutrient deficiencies and obesity.
Lack of Consistent Access

- Limited availability of healthy foods
  - High exposure to unhealthy foods
  - Home food environment: family meals, food available at home
Lack of Consistent Access

It’s not just about eating, either. Our environment also contributes to the problem. For example, fast food restaurants tend to be concentrated in low-income neighborhoods, providing quick, easy access to foods laden with calories, fat, added sugars and sodium—all of which have been associated with excess weight gain.

• Grocery stores and corner markets in low-income neighborhoods don’t often carry fruits and vegetables. If they do, they are often too expensive or of too low of quality to purchase.

• Families may not have access to proper refrigeration, making it difficult to store nutrient-dense foods, such as low-fat dairy.

• Families without cars have even a harder time accessing healthy foods. It is difficult to transport produce using public transit and is often cost-prohibitive with other means of transportation. For example, families without cars may be forced to hire taxis and services to help provide foods, but most of the time, these services are too expensive.
Family Stress

- Food
- Secure housing/utilities
- Employment
- Health care
- Finances
- Unsafe neighborhoods
- Stigma
Inexpensive, calorie-dense foods

Food insecure families may choose inexpensive, calorie-dense foods over healthier options because they lack access to nutrient-dense alternatives.
Result

lack of consistent access + family stress + inexpensive, calorie-dense foods = nutrient deficiencies and obesity
How do Food Insecurity and Obesity Affect Children?
How do Food Insecurity and Obesity Affect Children?

The types of effects

1. Health and developmental issues
2. Poor academic performance
3. Behavioral problems
   Irritability, difficulty
Effects of Food Insecurity

Health and developmental issues
Iron deficiency, asthma, learning difficulties
Effects of Food Insecurity

Poor academic performance
Lower math scores, difficulty concentrating, repeating a grade level
Effects of Food Insecurity

Behavioral problems
Irritability, difficulty getting along with others, school suspensions
What can you do to help?

1. Raise awareness
2. Get involved
Work to increase availability of healthy foods and nutrition education in food banks.

1. Educate your community and its leaders.

6. Advocate for expanded school meal programs (breakfast, supper, weekends, summer).

Encourage participation in school meal programs.

4. Enlist Registered Dietitian Nutritionists for advice on practical healthy-eating solutions.

3. Learn evidence-based solutions to decrease obesity.

5. Raise Awareness & Get Involved
Community Efforts to Reduce Food Insecurity

- Meals for kids
  - School meals
  - Summer food service programs
  - Farm to school programs
  - School and community gardens

- SNAP and WIC
- Retail collaborations
- Food banks and food pantries
Find Out What is Happening at Your Local Food Bank

Food Bank Locator: Find a food bank near you
www.feedingamerica.org/foodbank

Feeding America: Map the Meal Gap
www.feedingamerica.org/mapthegap