

- Chapter 13

- Community Food Supply and Health

- Chapter 13

Lesson 13.1

- Key Concept

- Modern food production, processing, and marketing have both positive and negative influences on food safety.

- Government Control Agencies

- Food and Drug Administration (FDA)

- USDA Food Safety and Inspection Service (FSIS)

- National Marine Fisheries Service (NMFS)

- Environmental Protection Agency (EPA)

- Federal Trade Commission (FTC)

- Centers for Disease Control and Prevention (CDC)

- Food and Drug Administration

- Enforces food sanitation and quality control

- Controls food additives

- Regulates interstate food transport

- Maintains nutrition labeling

- Ensures public food service safety

- Provides consumer education

- Performs research

- **Food Labels**
- **Two types of label information**
 - **Food standards: lists all ingredients (“standard of identity”)**
 - **Nutrition information: describes a food’s nutritional value**
- **Current Food Label:
Nutrition Facts**
- **Food Label: Health Claims**
- **Strictly regulated by FDA**
- **To make an association between a food product and a specific disease:**
 - **FDA must approve claim**
 - **Food must meet criteria set forth for that claim**
 - **Wording on package must be approved**
- **Food Technology**
- **Agricultural and food processing industries have developed chemicals to increase and preserve food supply.**
- **Critics are concerned about how certain changes have affected food safety and the environment.**
 - **Pesticides**
 - **Food additives**
- **Agricultural Pesticides**
- **Goal is to feed a growing population**
- **Pesticides improve crop yields**

- Example: Chemicals destroy many destructive insects

- **Problems**

- Pesticide residue on food

- Gradual leaching of chemicals into ground water and wells

- **Alternative Agriculture**

- **Organic farming**

- Grow foods without synthetic pesticides, fertilizers, sewage sludge, bioengineering, or ionizing radiation

- Raise animals and produce dairy products without antibiotics or growth hormones

- **Natural pesticides may be used**

- **Alternative Agriculture, cont'd**

- **Organic farming**

- **Alternative Agriculture, cont'd**

- **Genetic modification**

- Reduces the need for toxic pesticides and herbicides

- Example: Genetically modified corn that expresses a protein that acts as an insecticide

- **Alternative Agriculture, cont'd**

- **Genetic modification**

{Insert Figure 13-5}

- **Alternative Agriculture, cont'd**

- **Irradiation**

- Kills bacteria and parasites on food after harvest
- Prevents food-borne illness
- Can increase shelf life of produce
- Foods that are irradiated:
 - Have unaltered nutritional value
 - Are not radioactive
 - Have no harmful substances introduced as a result of irradiation
 - May taste slightly different
- Food Additives
- Chemicals intentionally added to foods to prevent spoilage and extend shelf life
- Benefits include:
 - Enriched food with added nutrients
 - Uniform quality
 - Standardized functional factors (e.g., thickening)
 - Preserves foods
 - Controls acidity and alkalinity
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 - Lesson 13.2
- Key Concept
- Many organisms in contaminated food transmit disease.
- Food-Borne Disease
- 76 million people in the United States sickened with food-borne disease annually
- 325,000 U.S. hospitalizations annually

- **\$83 billion annually in medical costs and personal salary losses**
- **Buying and Storing Food**
- **Food should be of good quality.**
- **Dry or cold storage is best.**
- **Refrigerate promptly.**
- **Refrigerate at 40° F or lower.**
- **Do not cross-contaminate foods.**
- **Preparing and Serving Food**
- **Wash hands and food preparation surfaces**
- **Keep raw meat, fish, and poultry separate from other foods.**
- **Cook to proper temperatures.**
- **Refrigerate leftovers immediately.**
- **Fight BAC!**
- **Food Contamination**
- **Food-borne illness usually presents with flulike symptoms**
- **High-risk individuals: Age, physical condition**
 - **Young children**
 - **Pregnant women**
 - **Elderly**
 - **Individuals with compromised immune systems**

- **Bacterial Food Infections**
- **Salmonellosis**
 - Caused by Salmonella, which grow readily in milk, custard, egg dishes, salad dressing, sandwich fillings, seafood from polluted waters
 - Unsanitary food handling can spread bacteria
- **Bacterial Food Infections, cont'd**
- **Shigellosis**
 - Caused by Shigella, which grow easily in milk
 - Most common in young children
 - Usually confined to large intestine
- **Bacterial Food Infections, cont'd**
- **Listeriosis**
 - Caused by Listeria
 - Grows in soft cheese, poultry, seafood, raw milk, commercially broken and refrigerated raw eggs, meat products (such as pâté)
- **Bacterial Food Poisoning**
- **Staphylococcal food poisoning**
 - From Staphylococcus aureus
 - Source often is an infection on the hand of a food worker
 - Many foods are effective carriers
- **Bacterial Food Poisoning, cont'd**
- **Clostridial food poisoning**

- From *Clostridium perfringens* and *Clostridium botulinum*
- *C. perfringens* are widespread in environment
- *C. botulinum* cause botulism (serious, often fatal food poisoning)
- Viruses
- Upper respiratory infections
- Viral infectious hepatitis
- Caused by fecal contamination of water, milk, or food or by contaminated shellfish from polluted waters
- Parasites
- Roundworms
 - Example: Trichina worm found in pork
- Flatworms
 - Example: Tapeworms in beef and pork
- Environmental Food Contaminants
- Lead
 - Sources include lead paint, airborne lead particles, water from lead pipes
- Mercury
 - Sources include fish from contaminated water
- Aflatoxin
 - Produced by fungi
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- **Key Concept**
- **Poverty often prevents individuals and families from having adequate access to their surrounding community food supply.**
- **Food Needs and Costs**
- **Worldwide hunger and malnutrition**
 - **Lack of sanitation**
 - **Cultural inequality**
 - **Overpopulation**
 - **Economic and political structure**
 - **Chronic food or nutrient shortages**
- **In the United States**
 - **More than 11 million households defined as “food insecure” in 2000**
- **Multiple Causes of Malnutrition**
- **Food Assistance Programs**
- **Commodity Supplemental Food Program**
- **Food Stamp Program**
- **Special Supplemental Food Program for Women, Infants, and Children**
- **National School Lunch, Breakfast, and Special Milk Program**
- **Nutrition Services Incentive Program**
- **WIC Enrollment**
- **Food Buying and Handling**

- Plan ahead to control impulse buying.
- Buy wisely.
 - Understand packaging, labels, brands, portion yields, measures, and food values.
 - Only buy in quantity if savings will be achieved.
- Store food safely.
- Cook food well.
- Summary
- Common public concerns regarding the safety of the community food supply center on the use of pesticides and food additives.
- These substances have produced an abundant food supply but have brought dangers and require control.
- The FDA is the main government agency established to maintain control.
- Summary, cont'd
- The FDA also conducts activities related to areas such as food safety, food labeling, food standards, consumer education, and research.
- Numerous organisms can contaminate food and cause food-borne illness.
 - Bacteria
 - Viruses
 - Parasites
- Summary, cont'd
- Rigorous public health measures control sanitation and food areas and personal hygiene of workers.
- U.S. food assistance programs are available for families under economic stress.

