

Chapter 19

Food Safety & Storage

Think Food Safety

Directions: Read the following selection. Then answer the questions under *Thinking Critically*, and complete the activities as directed by your teacher.

Americans typically enjoy the safest, most wholesome and abundant food supply in the world. However, headlines such as “Tainted Lettuce Cited in Mass Illness” or “Number of Salmonella Cases on Upswing” regularly catch our attention.

The Centers of Disease Control and Prevention estimate that foodborne diseases cause 76 million illnesses each year in the United States. Safety precautions, such as washing hands thoroughly before eating, refrigerating leftovers soon after preparation, wiping off counters with hot, sudsy water, and avoiding the use of such damaged foods as cracked eggs, can help prevent these diseases from spreading. Below are listed further guidelines for demonstrating food safety and proper food handling.

Prevention follows simple guidelines for temperature usage and safe food handling.

- ◆ Keep hot food hot and cold food cold.
- ◆ Wash your hands thoroughly before eating or preparing meals and during meal preparation.
- ◆ Rinse off all perishable produce.
- ◆ Use spoons, tongs, and plastic gloves when necessary to handle or prepare food.
- ◆ Wash your hands thoroughly after sneezing or coughing. Make certain all open cuts are covered well with a clean bandage.
- ◆ Wash dishes in hot, soapy water and allow them to air-dry.
- ◆ Serve food immediately after it is prepared. Do not give bacteria time to grow. Store leftovers within an hour of preparation and serving.
- ◆ Follow the temperature guidelines for foods prepared ahead of the serving time.

Call for Help

Food-related problems may have serious health consequences if they are never reported. Problems with meat, poultry, and egg products should be reported via the *Meat and Poultry Hotline* of the U.S. Department of Agriculture (USDA).

Nonmeat problems should be reported to the Food and Drug Administration (FDA). The FDA maintains local offices in areas all over the country. Consult your telephone directory under the heading, U.S. Government, Health and Human Services, to find the nearest FDA office. The FDA also maintains a special *Seafood Hotline*.

If you become sick after eating in a restaurant, contact your local health department. You’ll find a listing in the telephone directory.

Before placing a call to any hotline or health agency, have certain information ready. This will save you and the agency valuable time. In addition to your name, address, and phone number, be prepared to identify the following:

- ◆ The brand name, product name, and manufacturer of the suspected food product.
- ◆ The size and package type.
- ◆ The can or package codes (other than UPC bar codes) and the dates.
- ◆ The establishment number (EST), usually found in the circle or shield near the phrase, *USDA passed and inspected*.
- ◆ The name and location of the store and the date you purchased the product.

If you choose not to make a formal complaint to the USDA, alert the store or the product’s manufacturer to the problem. If you do plan to register a formal complaint, you will need the original container or packaging, the foreign object (the metal washer, for example), and any uneaten portion of the food.

If you or someone you know becomes ill after eating a food that you suspect was contaminated, see a physician immediately. Information concerning the visit, including the time, date, and name of the attending health professional, should also be reported to the USDA.

(Continued on next page)

Thinking Critically

1. How do you take responsibility for food safety in your home? Give a specific example.

2. What food-safety practices may be unfamiliar to many families? What can be done to help families learn about food-safety practices?

3. You plan to make a vegetable stew. The following ingredients need to be cut up, chopped, or sliced: stew meat, carrots, potatoes, celery, onions, and garlic. Describe at least four guidelines you can follow in order to prevent cross-contamination from occurring.

4. Why do you think restaurants are required to have you use a clean plate each time you go through a buffet line?

For Further Study

- ◆ Investigate the process of *electronic pasteurization*. How is it the same or different from irradiation? Write a brief summary and submit it to your teacher.
- ◆ Conduct research about recent outbreaks of E. coli in various places around the world. What sources cause the outbreaks? How might these outbreaks be prevented? Summarize your findings in a report to your class.
- ◆ Create a Power Point® presentation that outlines information on key points in Chapter 20. Make a presentation to the Parent-Teacher Organization (PTO), the school faculty, or other adult group. Take time to reflect on what you learned from this experience.
- ◆ Interview the school foodservice director. To what industry standards must the school comply in regard to the foodservice operation? Examples may include holding temperatures, refrigerator and freezer temperatures, sanitizers used when dish washing and cleaning the kitchen, or steps to prevent cross-contamination. Summarize your interview in a brief report to the class.

Chapter 19

Preserving Food at Home

Botulism and Home Canning

Directions: Read the following selection. Then answer the questions under *Thinking Critically*, and complete the activities as directed by your teacher.

Preserving food, whether by canning, freezing, or dehydrating, is satisfying as well as economical. It is a means of having a plentiful supply of food available all year. It is also a means of having family favorites, special chutneys, jams, and preserves and seasonal fruits and vegetables available for soups or desserts. Many people enjoy processing food to give as gifts to friends.

If not handled properly, however, any preserve or family favorite can be the source of foodborne illness. This is especially true of home-canned foods. When people are not knowledgeable or experienced with home canning procedures, food poisoning can occur.

Bacteria Is the Enemy

The culprits are bacterium called clostridium botulinum (klay-STRIH-dee uhm bah-chuh-LYE-nuhm). These bacteria thrive only in low-acid, low-oxygen environments—a jar of home-canned corn, for example—where they can produce a deadly toxin. In fact, improperly home-canned items—those processed at temperatures too low to kill the bacteria—are the source of most botulism outbreaks.

After multiplying in the body for a few days, the toxin attacks and gradually paralyzes the body's nervous system. Symptoms appear about twelve to thirty-six hours after consumption, although reactions may occur earlier or later. Early signs include nausea, droopy eyelids, and double vision. This progresses to difficulty speaking, swallowing, and breathing. Untreated, botulism can damage nerves permanently. Recovery is slow, difficult, and often incomplete. About one in seven botulism victims dies.

Battling Botulism

Fortunately, the bacteria often give signs of their activity in canned food. They can crack jars, loosen covers, and dent cans. Containers may spurt liquid when opened, and the food itself may look odd and smell foul.



Do not taste any food that may be tainted. Place the food in its original container in a heavy garbage bag. Mark the bag “POISON” and dispose of it where it is inaccessible to animals and people. You might boil the food for thirty minutes before disposal as further insurance. Immediately scrub any utensils or surfaces that may have contacted the food or its container, including openers, counters, shelves, and clothing. Throw out the cloths or sponges used to clean up and *thoroughly* scrub your hands.

If someone falls ill after eating the food, first seek medical help. Save any remaining food. Wrap it completely in heavy plastic, and put it in a sturdy, tightly closed container. Mark the container “DANGER,” and place it on ice away from animals and children where it won't be mistaken for edible food. Medical and health authorities can then analyze the item to identify and treat the illness.

Botulism from commercially prepared food is very rare. If, however, you think you have purchased tainted food from a restaurant, supermarket, or any food seller, call the local health department. Be prepared with the name and address of the event or business where the food was purchased or eaten. If the food is a commercial product, have the container, wrapper, or label on hand for identification. Most foods have a code identifying the plant where it was produced, which can help in tracing the source of contamination.

(Continued on next page)

Thinking Critically

1. What effect do some methods of canning have on the flavor and nutritive value of fruits or vegetables?

2. How would you adjust a homemade vegetable soup recipe for freezing?

3. Do you agree or disagree with this statement: “Without canned, frozen, or other processed foods, I would eat differently than I do now.” Explain your reasoning.

For Further Study

- ◆ Complete the following RAFTS strategy. (R=role; A=audience; F=format; T=topic; S=strong verbs.) As a food editor for your local extension service (role), you publish a “Frequently Asked Questions” column in the monthly newsletter (format). You provide answers and advice to consumers (audience) on food processing (topic). Choose two of the following dilemmas and write your responses to the consumers. Submit your responses to your teacher.
 - ◆ Can I reduce the amount of sugar in my jelly recipe? What would be the result in taste, texture, and appearance?
 - ◆ What went wrong? The grape jelly I made is too stiff.
 - ◆ Why do some of my canning jars fail to seal? Can I process them again?
 - ◆ What went wrong? The pears that I canned float in the jar.
- ◆ Strawberry Fields Forever! 20 pounds of fresh-picked strawberries! What will you do with them? Research ways that fresh, frozen, and preserved strawberries can be used, and demonstrate that you know how to use all three methods. (Hint: 12 pounds or 8 quarts = 13 pints of strawberries or 1 quart = 1½ pounds.)
- ◆ Analyze and study the research of Louis Pasteur. What impact did his research have on food preservation? Write a brief report summarizing your findings and submit it to your teacher.
- ◆ Develop a PowerPoint® presentation (10–15 slides) that shows how to can peaches. Include a slide citing your resources. Share your presentation with the class. If possible, demonstrate how to can peaches following your PowerPoint® presentation.