K-STATE Research and Extension

N.A.C. Nutrition & Activity for Communities

The Food Safety Zone

Discussion

1. Ask participants what they think food safety means.

- Food safety means knowing how to properly store, prepare, and cook food safely for consumption. Food safety is even more important for children and teens whose immune systems are still developing. Germs can make them sick more easily than adults.

2. Discuss why food safety is important:

- Food safety is important because it reduces the risk of a foodborne illness or food poisoning. Foodborne illness is the result of eating contaminated food that causes a person to become sick and experience symptoms such as nausea, vomiting, fever, upset stomach, etc.
- Food safety increases food quality.
- Some germs that cause food-borne illness include:
  - bacteria (leading cause),
  - viruses,
  - parasites, and
  - fungi.
- You can't see, smell, or taste harmful bacteria that may cause illnesses such as salmonella on raw chicken or *E. coli* in ground beef.

3. You spread germs through:

- poor hand washing,
- sneezing and coughing on your hands,
- not taking care of a wound, and
- not following food safety procedures.

4. Hand-washing procedures:

- Wet your hands with warm running water.
- Apply soap.
- Rub hands together for at least 20 seconds.
- Clean under fingernails and between fingers.
- Rinse hands thoroughly under running water.
- Dry hands with disposable towel.

5. It is important to wash your hands:

- before eating,
- before setting the table,
- when touching clean dishes,
- when cooking,
- after using the restroom,
- after coughing or blowing your nose,
- after touching your hair,
- after playing with pets, and
- before or after you use the computer.

Just because your hands do not look dirty doesn't mean they are clean.

Learner Objectives

Participants will be able to:

- define food safety;
- discuss steps to prevent food-borne illnesses;
- identify when hands should be washed; and
- identify actions to ensure food safety in the home.

Materials

- Bowl of water
- Pepper
- Bar of soap
- Large area to run

6. The Soap Experiment:
In a bowl, sprinkle black pepper and tell students the pepper is like the germs on their hands.
Have students take turns dipping the bar of soap into the water to watch the pepper disperse.
Explain to the students that the soap acts the same way with the germs on their hands, and that is why it's important to use soap every time they wash.

7. During food preparation remember the four steps to food safety:
Clean — Wash hands and surfaces often.
Separate — Don't cross-contaminate.
Cook — Cook to proper temperatures.
Chill — Refrigerate promptly.

Basic Food Safety Recommendations

Storing
- Always refrigerate perishable food within 2 hours (1 hour if the temperature is over 90 degrees).
- The refrigerator temperature should be 40° F to slow the growth of bacteria.
- Freezer temperature should be at 0° F or below to stop the growth of bacteria.
- Cook or freeze fresh poultry, fish, ground meats, and variety meats within 2 days; other beef, veal, lamb, or pork within 3 to 5 days.
- Perishable food such as meat and poultry should be wrapped securely to maintain quality and to prevent meat juices from getting onto other food.

Cleaning
- Wash your hands before and after handling food.
- Use warm water and soap for 20 seconds and a single use towel to dry.
- Don't cross-contaminate. Keep raw meat, poultry, fish, and their juices away from other food. After cutting raw meats, wash cutting board, utensils, and countertops with hot, soapy water.

Preparation and Cooking
- Thaw meats in the refrigerator, in cold water, or in the microwave for immediate use. Do not thaw at room temperature.
- Bacteria grow at room temperature.
- The only way to know food is fully cooked is by taking its temperature with a thermometer, not merely by color change.
- Cook meat to a safe internal temperature.
- Beef, veal, and lamb steaks, roasts, and chops may be cooked to 145° F.
- All pork cuts, 160° F.
- Ground beef, veal, and lamb to 160° F.
- All poultry should reach a safe minimum internal temperature of 165° F.

Serving
- Temperature danger zone: 40° to 140° F
- Bacteria grow fast in the temperature danger zone.
- Avoid keeping food within the danger zone.
- Hot food should be held at 140° F or warmer.
- Cold food should be held at 40° F or colder.
- Perishable food should not be left out more than 2 hours at room temperature (1 hour when the temperature is above 90° F).

Leftovers
- Discard any food left out at room temperature for more than 2 hours (1 hour if the temperature was above 90° F).
- Place food into shallow containers and immediately place in the refrigerator or freezer for rapid cooling.
- Use cooked leftovers within 4 days.

Germ Busters!

Have two students be germs. Their job is to try and tag as many people as they can. Once a player has been tagged by a germ, they become a germ and must tag other players. The game ends once everyone is a germ. This shows the students how fast germs can spread if they do not wash their hands.

Play the game a second time. This time have one person be soap and another person be water. Together soap and water can wash away the germs and the person is clean again. Both soap and water must tag the player for them to become clean again. The original germs cannot be washed clean and must still try and tag the clean players. The game ends when the leader calls time after 3 minutes. When you have soap and water not everyone is turned to a germ. This is to remind students of the importance of washing their hands often so germs are not spread.

Worksheet

1. Why do we practice food safety?

2. What are the four steps to handling and preparing food safely?

3. Your refrigerator and freezer should be set at what temperature?

4. Food should not be left at room temperature for more than:

5. Chicken be cooked to what internal temperature?

6. What is the only way to be sure foods are cooked long enough to kill harmful bacteria?

7. How many seconds do you need to wash your hands with soap and warm water?

8. What is one thing you can do today make sure you are eating or preparing safe foods?

Kansas School Wellness Policy Model Guideline — Nutrition Education			
Requirements achieved in this lesson:	**Implementing**	**Transitioning**	**Modeling**
	All students in grades K-12 will have the opportunity to participate in culturally relevant activities, as appropriate, and a variety of learning experiences that support development of healthful eating habits that are based on the most recent Dietary Guidelines for Americans and evidence-based information.	District administrators inform teachers and other school personnel about opportunities to participate in professional development on nutrition and on teaching nutrition.	The wellness committee, teachers and other school personnel participate in nutrition education-related professional development at least once a year.
Topics	Proper hand washing Basic food safety		

Kansas School Wellness Policy Model Guideline — Physical Activity			
Physical Activity Throughout the Day			
Requirements achieved in this lesson:	**Implementing**	**Transitioning**	**Modeling**
	Elementary school students have at least 15 minutes a day of supervised recess (not including time spent getting to and from the playground), preferably outdoors. Supervisory staff encourage moderate to vigorous physical activity.	Elementary school students have two supervised recess periods per day (not including time spent getting to and from the playground), totaling at least 20 minutes. Supervisory staff encourage moderate to vigorous physical activity.	Elementary school students have two supervised recess periods per day, totaling at least 30 minutes (not including time spent getting to and from the playground), with one being offered in the morning. Supervisory staff encourage moderate to vigorous physical activity.

References

Cleanliness Helps Prevent Foodborne Illness | Food Safety and Inspection Service. (2023). USDA Food Safety and Inspection Service. *http://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/cleanliness-helps-prevent*

Food Safety. (n.d.). K-State Research and Extension. Retrieved June 12, 2024, from *https://www.ksre.k-state.edu/program-areas/food-preparation-processing-and-safety/food-safety.html*

Kansas Department of Education. (2021). Chapter 21: Local School Wellness Policies. *https://cnw.ksde.org/snp/food-service-facts/chapters/chapter-21-local-school-wellness-policies*

Keep Food Safe! Food Safety Basics | Food Safety and Inspection Service. (2024). USDA Food Safety and Inspection Service. *http://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/steps-keep-food-safe*

Keep Food Safe! Food Safety Basics | Food Safety and Inspection Service. (2024). USDA Food Safe Food Handling and Preparation. *http://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/steps-keep-food-safe*

Answer Key

1. To reduce the risk of foodborne illness or food poisoning.
2. Clean, Separate, Cook, and Chill
3. Refrigerator should be at 40 degrees Fahrenheit, freezer should be at 0 degrees Fahrenheit or below.
4. Two hours
5. 165 degrees Fahrenheit
6. Take the temperature with a food thermometer.
7. 20 seconds
8. Answers vary.

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