Extension Service
West Virginia University

Food Safety in the Home

Linda Bull
Extension Agent, Lewis County
Mary Lou Schmidt
Extension Agent, Fayette and Nicholas Counties
Linda Kay Davis
Extension Agent, Greenbrier County
Linda Waybright
Extension Agent, Jackson County

Purpose of Lesson:

- To provide basic information about food safety in the home.
- To encourage consumers to have higher expectations of themselves as food handlers.
- To introduce participants to the Fight Bac program.

Introduction

Far too often in America, the media report on outbreaks of foodborne illnesses or on recalls of products that may be contaminated. While most people immediately take note and check their pantries for unsafe products and mentally review current food safety practices, others fall back on a false sense of "safe at home" security. Many Americans think that most foodborne illnesses begin outside the home. However, recent studies by food scientists show that most foodborne illnesses in the United States result from sporadic, small outbreaks in homes.

For years, homemakers have taken extreme pride in the cleanliness and upkeep of their family dwellings. However, taking pride in today's home includes becoming knowledgeable about factors that cause foodborne illnesses. To make sure home kitchens pass not only the clean test, but also the test that ensures safe food, have participants take the kitchen food safety quiz and discuss the answers available in this leader's guide.

Clean

Bacteria can spread throughout the kitchen, getting on hands, counter tops, cutting boards, and utensils. Consumers have the ability to minimize their bacteria by following a few basic principles.

Experts agree that proper handwashing and sanitation can go a long way toward preventing foodborne illness. Hands should be washed in hot, soapy water before food preparation and every time they are contaminated during preparation. Contamination will occur when you answer the phone, pet the dog, wash dishes, empty garbage, and switch from one food to another. Twenty seconds of thorough washing will significantly reduce the amount of bacteria on the hands. Contact with food should be avoided when you have a cut or infection on the hands.

Kitchen counters, cutting boards, and utensils also should be washed thoroughly with soap and hot water as needed during preparation, especially when changing from one food to another.

Overused dishcloths are another source of contamination in the kitchen. If you use cloth instead of paper, you should wash them often. You might want to consider using paper towels instead so that you do not cross-contaminate the work area.

Use hot, soapy water to wash hands, cutting boards, dishes, utensils, counter tops, and other surfaces immediately after they have come in contact with raw meat, poultry, and seafood. Wash your hands and wrists thoroughly (for 20 seconds) with hot water and soap before you handle any food.

Chill

The temperature danger zone for potentially hazardous foods is 40 to 140 degrees, so it is important to refrigerate foods quickly because cold temperatures keep harmful bacteria from growing and multiplying. Since bacteria can survive and grow at lower temperatures however, refrigeration and freezing are not total protection against bacterial growth. Proper cooling of foods must be an important step of a complete food safety plan for your home kitchen.

To ensure maximum protection, include these cooling procedures in your home plan.

- Be sure refrigerator temperatures are set at 40 degrees F or lower and the freezer unit at 0 degrees F or lower. Check these temperatures regularly with an appliance thermometer. Use proper food storage techniques in the refrigerator and freezer unit. Do not pack the refrigerator; cool air must be able to circulate. A recent study of home refrigerator temperatures (Brown, Gianato, Hunley, Summers, Lane, and Leary) found a significant number of home refrigerator temperatures reading above 40 degrees F.
- Refrigerate or freeze perishables, prepared foods, and leftovers within two hours after a meal.
- Thaw foods correctly.
    - Thaw foods in the refrigerator. Store raw food on the lowest shelves to prevent their dripping or splashing on other foods. Refrigerator thawing involves a day or more for such large items as turkey or roasts.
    - Thaw foods under running drinkable (cool) water (at temperature of 70 degrees F or lower). Use a stream of water strong enough to work off loose particles in a clean sanitized sink.
    - Thawing food in a microwave, can be considered only if the food will be cooked immediately after thawing.
    - Never defrost foods at room temperature.
- To ensure proper cooling in the refrigerator, divide large amounts of leftover foods into small, shallow (2 inches deep) containers. Failure to properly cool foods thoroughly is the leading cause of foodborne illness outbreaks.

Separate

Cross-contamination is the spread of bacteria from one food to another. Bacteria can be transferred directly to an uncontaminated food from a contaminated food, from the hands of the foodhandler, or from surfaces that have been in contact with a contaminated food. In addition to the foodhandler's hands, common items in the kitchen that often are sources of cross-contamination include cutting boards, utensils, sponges, dishcloths, sinks and counter tops, faucet handles, and refrigerator handles.

Although any food can become contaminated, and then become a source of contamination, the risk of cross-contamination from raw meat, poultry, and seafood is very great because these foods are most likely to have bacteria present. Separate these raw foods from other foods at all critical points in handling — purchasing, storing, pre-preparation, cooking, serving, and handling leftovers.

Separate raw meat, poultry, and seafood from other foods in your grocery shopping cart and in grocery bags; use plastic bags to enclose packages of meat and poultry. Consumers may need to remind clerks to use separate bags as raw products are packed to leave the store.

Store raw meat, poultry, and seafood separately from other foods in your refrigerator—in the meat compartment or on the lowest shelf below any ready-to-eat foods or foods that will not be cooked. This will prevent the possibility of juices from the meats dripping onto the prepared foods. When thawing meats in the refrigerator, place them on a tray to contain their juices. Wash all storage containers between uses.

Use a plastic or glass cutting board for meats and poultry. If you use a wooden board, use one board exclusively for raw meat and poultry and another for ready-to-eat products like salad ingredients. Thoroughly wash cutting boards between uses for different foods. Nonporous acrylic, plastic, glass, and solid wood boards can be washed in an auto-

matic dishwasher (laminated boards may crack and split). Cutting boards should be sanitized, especially after being used for foods having a high risk of bacterial contamination. Use a solution of one teaspoon liquid chlorine bleach per quart of water. Flood the surface with the bleach solution and allow it to stand for several minutes. Then rinse it and let it air-dry or pat it dry with fresh paper towels. Discard cutting boards when they become worn or develop hard-to-clean grooves.

NEVER place cooked food on a plate that previously held raw meat, poultry, or seafood. Use clean utensils that have not touched raw foods to handle food after cooking. When grilling, return the plate and utensils used to carry raw foods to the grill to the kitchen to be washed; remove the cooked food with a clean utensil to a clean plate.

Cook

Check recipes or cooking charts for the recommended internal temperatures for different foods, or keep the **Fight Bac** brochure as a handy reference. Foods are properly cooked when they are heated long enough and at a high enough temperature to kill the harmful bacteria that cause foodborne illness. Thermometers are the most accurate way to check the temperature of food. To accurately measure the food's internal temperature, insert the thermometer into the thickest part of the food. Be careful not to get it close to the bottom or side of the baking dish or close to bone if it is a piece of meat. Keep the thermometer in that position for two minutes or until the needle stops moving. The thermometer reading will give you an accurate indication of the doneness of the dish you are checking.

Three types of thermometers can be used with food: a thermocouple thermometer, a bi-metallic stemmed thermometer, and a digital thermometer. The bi-metallic stemmed thermometer is most readily available and the least expensive. Before using, it make sure your thermometer has been cleaned, sanitized, and calibrated (adjusted so it measures correctly). A thermometer should be calibrated after using it with very hot or very cold foods, after dropping it, and at regular intervals.

Calibrating a Thermometer

There are two simple ways to calibrate a bi-metallic stemmed thermometer.

1. Stick the sensing tip in a clean foam cup of half ice and half water slush. Make sure the tip does not touch the side or bottom of the cup. Wait four or five minutes or until the needle is steady. Turn the nut until the needle reads 32 degrees F (0 degrees C).
2. Stick the sensing tip into boiling water, wait until the needle stops, and then turn the nut until the needle reads 212 degrees F (100 degrees C). When using this method you need to be very careful to avoid burns.

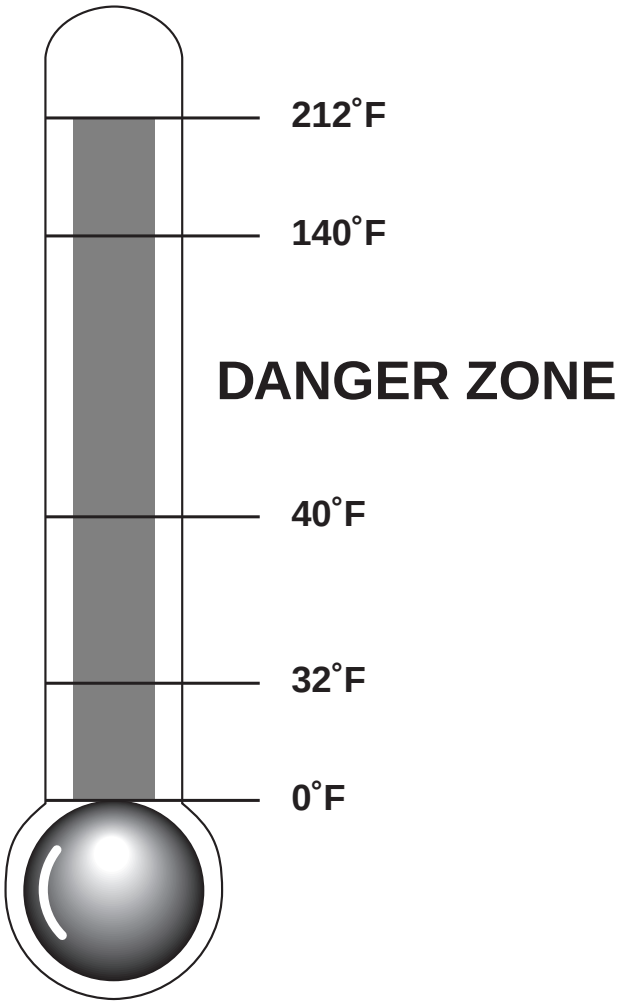
Thermocouple and digital thermometers should be checked regularly using the ice/slush method. If the reading is off, try a new battery. If that does not work, have it checked professionally.

Critical Temperatures

To make sure meat, poultry, casseroles, and other foods are cooked all the way through, use a clean thermometer to measure their internal temperature. Cook roasts and steaks to at least 145 degrees F. Whole poultry should be cooked to 180 degrees F. Cook ground beef to at least 160 degrees F. Information from the Centers for Disease Control and Prevention (CDC) links eating undercooked, pink ground beef with a higher risk of illness. If a thermometer is not available, do not eat ground beef that is still pink inside. Cook eggs until the yolk and white are firm. Don't use recipes in which eggs remain raw or only partially cooked. Fish should be opaque, flake easily with a fork, and reach a temperature of 145 degrees F. Sauces, soups, and gravies should be brought to a boil when reheating. Casseroles and leftovers should be thoroughly heated to at least 165 degrees F.

When using a microwave oven, cover food, stir it, and rotate it to make sure it cooks evenly and has no cold spots where bacteria can survive. If there is no turntable, rotate the dish by hand once or twice during cooking. Add a minimum of 25 degrees (14 degrees C) to the recommended internal temperature. Let stand two minutes after cooking so that all

parts of the food heat to the required internal temperature.



Activities

Can your kitchen pass the food safety test?

Can you find any information on most frequently occurring bacteria?

Locate general information on foodborne illness — statistics, symptoms, etc.

Use a bi-metallic stemmed thermometer to check the temperature of a cup/glass of the beverage being served for refreshment at your meeting.

Demonstrate proper handwashing techniques. Soap up hands, use hot water, and agitate hands for 20 seconds.

Best Answers to Kitchen Food Safety Quiz:

1. B, 2. B, 3. A, 4. C, 5. C, 6. C, 7. C. 8. A (C would be right if sanitizing step is added after rinsing) 9. C, 10. B (C is all right if food is cooked immediately after defrosting)

Sources:

"Can Your Kitchen Pass the Food Safety Test?," *FDA Consumer Magazine*, June 1996.

Fight Bac Educational Campaign, Partnership for Food Safety, 1998.

Temperatures in Home Refrigerators in Selected West Virginia Homes, Brown, Gianato, Hunley, Layne, Summers, and Leary, WVU Extension Service, 1998.

Reviewed by Guendoline Brown, Extension Specialist, Nutrition and Health.

1999: 1M

ES98-089