

This issue's topic **FOOD SAFETY**

INTRODUCTION

Americans receive little formal instruction about food preparation. They often are unaware of safe food handling practices that can protect them from the discomfort or disabling effects of foodborne illnesses. Everyone in the food chain — consumers, retailers, inspectors, manufacturers, and food producers — has a role to play in keeping the food supply wholesome and safe to eat. The consumer, as the “last critical control point” in the chain, has the most impact on food handling and safety behavior. This fact sheet provides current information about food safety practices in the United States, and useful advice about safe food handling practices.

A Safe Food Supply

The U.S. food safety record is one of the best in the world — and in many ways has been getting even better. Many foodborne illnesses have been virtually eliminated in the United States through improved public hygiene; advanced food-processing technology; education; and the cooperative efforts of farmers, ranchers, food manufacturers and distributors, and government agencies.

Nevertheless, foodborne illnesses are still a reality for the American public. The U.S. Centers for Disease Control and Prevention (CDC) is the federal agency that collects and analyzes statistics on disease incidences, including foodborne illness outbreaks. In 1999, the CDC adopted a new sophisticated method of analyzing the impact of foodborne diseases on health in the United States. Using this new method, the CDC now estimates that each year foodborne diseases cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000

deaths in the United States. According to the CDC, these most recent estimates suggest that foodborne diseases appear to cause more illnesses but fewer deaths than previously estimated (1).

The potential for foodborne illness remains a matter of concern throughout the United States in part because food preparers and handlers at each point of the food chain are not fully informed of risks and related safe-handling practices. Understanding and practicing proper food-safety techniques, such as thoroughly washing hands and cooking foods to proper temperatures, could significantly reduce foodborne illness (2).

Special Populations

Food pathogens pose the most risk for the young, the elderly, and those with existing health problems. Healthy adolescents and adults who are exposed to foodborne microbes may not become ill or may only have mild discomfort. However, the same food with the same microbes can cause serious illnesses in infants and children, pregnant women,

the elderly, and anyone whose immune system has been compromised by a chronic condition.

Chemotherapy, radiation or intense medical treatments can also weaken a person's resistance to disease and increase the susceptibility to foodborne illnesses. Special attention is needed to protect these individuals from foodborne illnesses.

Safe Cooking Instructions for Steak, Roasts, Ground Beef and Poultry

Bacteria are part of the environment and may exist wherever food is present. Not all of these bacteria are harmful. If a cut of meat contains any harmful bacteria, they will exist on the surface. Cooking steaks and roasts to medium rare (145°F) doneness will destroy surface bacteria.

However, when raw meat or poultry is ground, bacteria that might exist on the surface are mixed throughout the meat. Therefore, it is important to thoroughly cook both the inside and outside of ground meat or poultry patties. Cook ground meat to medium (160°F) doneness. If an instant-read thermometer is not available, check to be sure the center is not pink and the juices show no pink color. Ground poultry should be cooked to at least 165°F. Never eat raw or undercooked ground meat or poultry.



Food Irradiation

Many scientific and health experts agree that irradiation can reduce the presence of foodborne hazards and ensure that foods do not contain harmful organisms. During irradiation, foods are exposed briefly to a radiant energy source, such as gamma rays or electron beams, within a shielded facility. The Food and Drug Administration (FDA) has determined that irradiation is “safe and effective in decreasing or eliminating harmful bacteria” and has approved its use for a variety of foods, including meat and poultry, fresh fruits and vegetables, and spices (3).

The federal government first approved the use of irradiation with foods (wheat) in 1963. In the 1970s NASA began using irradiation to sterilize food for astronauts. In the 1980s and the 1990s the government began approving irradiation for specific uses with a broad range of foods: spices, 1983; pork, 1985; fruit and vegetables, 1986; poultry, 1992; and beef and veal, 1997. Irradiation facilities must be approved by the government before construction. After construction, facilities are subject to regular inspections, audits, and other reviews to ensure they are safely and properly operated. Irradiation has been approved for use in nearly 40 countries (4).

General Population

Changes in our food preferences, food handling habits, and meal patterns affect food safety.

Americans are eating a wider variety of foods that contain ingredients that must be chopped or ground, then combined and refrigerated before cooking or serving; for example, sushi, fried rice, egg rolls, tacos, tortillas and pastas. Extra attention is needed to be sure that all cooking surfaces and utensils are thoroughly cleaned and that safe food handling practices are used.

An increase in new and innovative food cooking techniques and tools presents additional challenges to food safety assurances. Food that is cooked in a microwave oven, for instance, may appear to be completely cooked but still can have cold spots throughout the product. Several cases of foodborne illness have been traced to improper microwave cooking.

Americans continue to eat more meals away from home. According to The NPD Group annual report on eating patterns in America, the number of restaurant meals purchased in 1999 was the highest ever; the number of meals made at home was the lowest ever (5).

The foodservice industry — which includes restaurants, institutional facilities, and retail grocery stores — has an impressive food safety record. However, of the hundreds of major and more publicized foodborne illness outbreaks each year, most of them happen in schools, hospitals, restaurants, and other foodservice facilities. The possibility of foodborne illness increases significantly at delis, salad bars, and outdoor events if proper food handling methods are not followed.

Government and Industry Programs

The meat industry and the federal government have taken steps to further reduce the chances that harmful bacteria may be left on meat products after processing. Among many of these initiatives to improve food safety has been the implementation of a Hazard Analysis/Critical Control Point (HACCP) system.

Under this system, meat and other food processing companies identify stages in production where contamination might occur, implement steps to preclude or minimize contamination, document that those steps are being taken, and verify that the system is working. For example, meat companies set up quick-chill systems that lower product temperatures

fast enough to inhibit bacteria from growing. Or, they establish procedures to assure that cutting blades are sanitized after use on each carcass. Each company is responsible for establishing food safety procedures based on the products it processes.

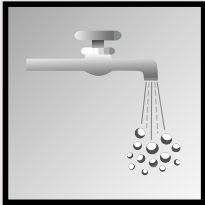
The U.S. Department of Agriculture (USDA) has incorporated the HACCP concept into its inspection system to reduce microorganisms that cause most food-related illnesses. The regulations require federally inspected meat and poultry plants to use microbial testing, anti-microbial rinses, temperature controls, and standardized sanitation systems to control pathogens.

The new measures modify, but do not replace, current inspection systems that rely on thousands of inspectors to ensure the wholesomeness and safety of meat and poultry products. The meat industry advocates HACCP systems and recommends that systems which are less scientific be eliminated as the newer systems are put in place.



WAYS TO KEEP FOOD SAFE

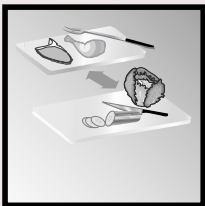
The following food handling and preparation tips are based on information from the Fight BAC!™ food safety campaign. The campaign is sponsored by the Partnership for Food Safety Education, a public-private partnership consisting of industry, government, and consumer groups. (6)



Clean: Wash hands and surfaces often

According to food safety experts, bacteria can spread throughout the kitchen and get on to cutting boards, knives, sponges and counter tops.

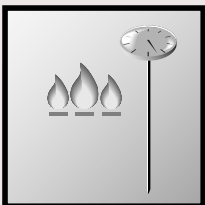
- Wash hands in hot soapy water before preparing food and after using the bathroom, changing diapers and handling pets. For best results, consumers should use warm water to moisten their hands and then apply soap and rub their hands together for 20 seconds before rinsing thoroughly. [Federal government guidelines recommend that handwashing facilities “provide water at a temperature of at least 43°C (110°F).” (7)]
- Wash cutting boards, knives, utensils and counter tops in hot soapy water after preparing each food item and before going on to the next one. Use plastic or other non-porous cutting boards. Cutting boards should be run through the dishwasher — or washed in hot soapy water — after use.
- Consider using paper towels to clean up kitchen surfaces. Or, if using cloth towels, consumers should wash them often in the hot cycle of the washing machine.



Separate: Don't cross-contaminate

Cross-contamination is how bacteria spreads from one food product to another. This is especially true for raw meat, poultry and seafood. Experts caution to keep these foods and their juices away from ready-to-eat foods.

- Separate raw meat, poultry and seafood from other food in the grocery shopping cart.
- Store raw meat, poultry and seafood on the bottom shelf of the refrigerator so juices don't drip onto other foods.
- If possible, use one cutting board for raw meat products and another for foods which are to be eaten without further cooking (such as salads).
- Always wash cutting boards, knives and other utensils with hot soapy water after they come in contact with raw meat, poultry and seafood.
- Never place cooked food on an unwashed plate which previously held raw meat, poultry or seafood.



Cook: Cook to proper temperatures

Food safety experts agree that foods are properly cooked when they are heated for a long enough time and at a high enough temperature to kill the harmful bacteria that cause foodborne illness.

- Use an instant-read thermometer that measures the internal temperature of cooked meat and poultry, to make sure that the meat is cooked all the way through.
- Cook roasts and steaks to at least 145°F. Whole poultry should be cooked to 180°F for doneness.
- Cook ground meat, where bacteria can spread during grinding, to at least 160°F. Information from the Centers for Disease Control and Prevention (CDC) links eating undercooked ground beef with a higher risk of illness. If an instant-read thermometer is not available, check to be sure the center is not pink and the juices show no pink color. Never eat raw or undercooked ground meat products.
- Cook eggs until the yolk and white are firm, not runny. Don't use recipes in which eggs remain raw or only partially cooked.
- Cook fish until it is opaque and flakes easily with a fork.
- Make sure there are no cold spots in food (where bacteria can survive) when cooking in a microwave oven. For best results, cover food, stir and rotate for even cooking. If there is no turntable, rotate the dish by hand once or twice during cooking.
- Bring sauces, soups and gravy to a boil when reheating. Heat other leftovers thoroughly to 165°F.



Chill: Refrigerate promptly

Food safety experts advise consumers to refrigerate foods quickly because cold temperatures keep most harmful bacteria from growing and multiplying. So, public health officials recommend setting the refrigerator at 40°F and the freezer unit at 0°F and occasionally checking these temperatures with an appliance thermometer.

- Refrigerate or freeze perishables, prepared food and leftovers within two hours.
- Never defrost (or marinate) food on the kitchen counter. Use the refrigerator, cold running water or the microwave.
- Divide large amounts of leftovers into small, shallow containers for quick cooling in the refrigerator.
- With poultry and other stuffed meats, remove the stuffing and refrigerate it in a separate container. Don't pack the refrigerator. Cool air must circulate to keep food safe.



Conclusion

Everyone in the food chain — consumers, retailers, inspectors, manufacturers, and food producers — must assume responsibility for food safety, and do his or her part to keep the food supply wholesome and safe to eat. The consumer, as the “last critical control point” in the chain, has the most impact on food handling and safety behavior.

Food producers also play significant roles in developing a safe food supply. In recent years the meat industry has invested several million dollars

in food safety research and development projects. The beef industry has created the Beef Industry Food Safety Council to coordinate a united approach to food safety concerns. The Council brings together industry executives, beef producers, university and government scientists, industry association executives, and other experts who represent each segment in the beef food chain. These scientific and technical experts continue to work towards the goal of a food production system that incorporates a food safety net extending from farm to consumer.

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The American Dietetic Association
www.eatright.org

Centers for Disease Control and Prevention
www.cdc.gov

FDA Center for Food Safety and Applied Nutrition
www.cfsan.fda.gov

Food Marketing Institute
www.fmi.org

International Food Information Council Foundation
www.ificinfo.health.org

National Cattlemen's Beef Association
www.beef.org

National Food Safety Information Network
www.foodsafety.gov

National Restaurant Association
www.restaurant.org

Partnership for Food Safety Education Fight BAC!
www.fightbac.org

U.S. Department of Agriculture Food and Nutrition Information Center Foodborne Illness Education Information Center
www.nal.usda.gov/fnic/foodborne

U.S. Department of Agriculture Food Safety and Inspection Service
www.fsis.usda.gov

Household Food Safety Practices (8)

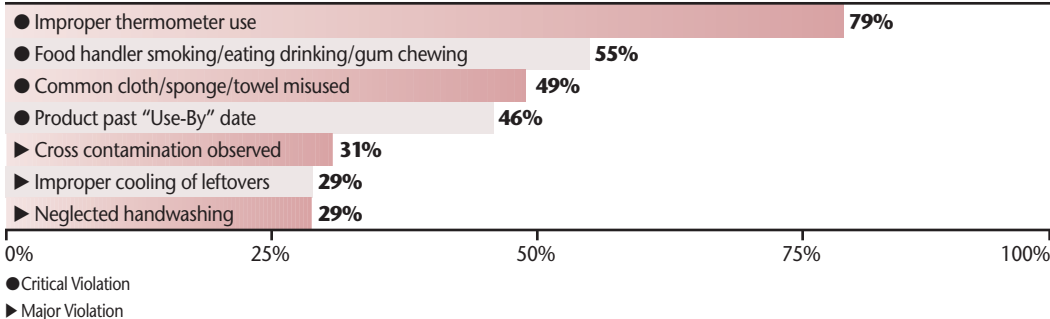
According to Audits International, Inc., a food marketing research firm, little information about consumers' household food safety practices exists, even though household food preparation is a critical component of food safety.

The firm conducted its initial Home Food Safety Survey in 1997 to determine how often proper food safety practices were employed as part of home food preparation. The survey was repeated in 1999. Data from 121 households in 82 North

American cities was collected in the second quarter of 1999 by auditors who observed meal preparation, service, post-meal cleanup, and leftover storage.

PERCENTAGE OF HOUSEHOLD FOOD SAFETY VIOLATIONS MOST FREQUENTLY OBSERVED (1999)

Violation



Of the 121 households evaluated in 1999, 26% met the minimal Audits International criteria for acceptable performance, compared to 4% in 1997. Households in 1999 averaged 1.7 critical violations (with a range from 0 to 5) and 3.2 major violations (with a range from 0 to 8). A “critical violation” is defined by Audits International as an action that, by itself, can lead to a foodborne illness or injury. A “major violation” is defined as an action that, by itself, is unlikely to cause foodborne illness, but is likely to be cited as a contributing factor to a foodborne illness or injury.



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