



At-Home Safe Food Handling: It's in Your Hands.

When it comes to safe food handling and preparation in your home, you're in control. Your home is the final stop in the farm-to-table continuum, and safely handling food is your best protection against foodborne illnesses.

To stop microorganisms, follow these four food safety concepts:



CLEAN. Wash hands and surfaces often



CHILL. Refrigerate promptly



SEPARATE. Don't cross-contaminate



COOK. Cook to proper temperatures

This publication outlines food handling practices from store to table, plus the use of leftovers. The four food safety concepts above are important in several of these steps, so watch for the symbols marking Clean, Chill, Separate, and Cook. Most instances of foodborne illnesses are preventable, so remember, you control at-home food safety. It's in your hands!

SHOPPING.

At-home safe food handling begins with grocery shopping. Bacteria grow well in warmer temperatures, so it's important to not allow cold or frozen foods to increase in temperature before you reach home.

- Grocery shop last to avoid leaving food in a hot car



- Take food straight home after shopping and immediately refrigerate cold items. In hot weather, pack cold foods in ice if the time from the store to home will be more than one hour.



- Place raw meat, poultry, fish, and seafood inside plastic bags found in the meat aisle to avoid contamination from drippings. Keep them separate from other food items in your cart.

- Watch food condition. Don't buy canned goods with large dents, cracks or bulges. Be sure refrigerated food is cold to the touch and frozen food is rock-solid.

- Avoid buying fresh meat, poultry, fish, or shellfish from temporary stands.

QUICK TIP. Watch for these dates on food:
"Sell by" is the last date a store should sell a product.
"Best if used by" means the quality of food goes down after this date.
Dates are quality indicators, not safety dates.

STORING.

Refer to Chart #1: Refrigerated Storage Guidelines.



- To slow bacterial growth, keep your refrigerator running at 40°F, or even colder, without freezing your milk or lettuce. Keep freezers at 0°F for best food quality. Check the temperature of your refrigerator and freezer with a thermometer.



- Place raw meat, poultry, fish or shellfish on a plate or in a plastic bag, and on a lower refrigerator shelf, to avoid contaminating other foods with drippings.

- Cover all foods to protect them from drips and to hold quality.

- Freeze fresh meat or poultry immediately if you won't use it within a few days.

PREPARING.



- **Handwashing** is one of the best ways to help prevent foodborne illnesses. Always wash your hands in hot, soapy water for 20 seconds:

- Before preparing food
- After handling raw meat, fish, seafood or poultry
- After using the toilet
- After changing a diaper
- After handling pets, pet food, or cat litter
- After handling the trash
- After coughing, sneezing, or using a tissue



- Frequently wash and change kitchen towels, sponges, and cloths.



- Wash cutting boards, dishes, utensils, and countertops with hot, soapy water after preparing different food items, especially raw meats and poultry. Spray surfaces with a simple solution of 1 tablespoon regular chlorine bleach in 1 gallon water. Label spray bottle "sanitizer."

QUICK TIP. Encourage proper handwashing with younger children by having them sing the “Alphabet Song” once. Washing hands for 20 seconds is effective in removing germs from hands.



■ Thaw meat or poultry in the refrigerator, microwave or under cold running water in your kitchen sink. Then, cook immediately.



■ Use acrylic cutting boards instead of wooden boards. Acrylic boards can be washed in the dishwasher. Replace when surface becomes rough.



■ Marinate raw meat and vegetable products in the refrigerator. Never reuse marinade; dispose of it down the drain.



■ Keep raw meat and its juices away from other foods.

■ Do not wash raw meats before cooking. This could splash bacteria to other foods and surfaces.

QUICK TIP. To help avoid cross-contamination of food, obtain two acrylic cutting boards of different colors or shapes. Use one for raw meats and poultry, the other for fruits and vegetables.

COOKING.

Refer to Chart #2: *Cooking Temperature Guide for Meats and Eggs.*

CHART #1

REFRIGERATED STORAGE GUIDELINES

Use these short, but safe, time limits to keep your refrigerated food (40°F or colder) from spoiling or becoming harmful to eat.

Product	Storage
FRESH MEAT (BEEF, VEAL, LAMB, AND PORK)	
Steaks	3 to 5 days
Chops	3 to 5 days
Roasts	3 to 5 days
Variety meats (tongue, kidneys, liver, heart, chitterlings)	1 to 2 days
RAW HAMBURGER, GROUND AND STEW MEAT	
Hamburger and stew meats	1 to 2 days
Ground turkey, veal, pork, lamb, and mixtures of them	1 to 2 days
FRESH POULTRY	
Chicken or turkey, whole	1 to 2 days
Chicken or turkey, parts	1 to 2 days
Giblets	1 to 2 days
FISH AND SHELLFISH	
Fresh fish and shell fish	1 to 2 days
MEAT LEFTOVERS	
Cooked meat and meat dishes	3 to 4 days
Gravy and meat broth	1 to 2 days
SOUP AND STEW LEFTOVERS	
Vegetable or meat-added	3 to 4 days
COOKED POULTRY, LEFTOVERS	
Fried chicken	3 to 4 days
Cooked poultry dishes	3 to 4 days
Pieces, plain	3 to 4 days
Pieces covered with broth, gravy	1 to 2 days
Chicken nuggets, patties	1 to 2 days
HAM, CORNED BEEF	
Corned beef in pouch with pickling juices	5 to 7 days
Ham, canned, labeled “Keep Refrigerated”	
unopened	6 to 9 months
opened	3 to 5 days
Ham, fully cooked, whole	7 days
Ham, fully cooked, half	3 to 5 days
Ham, fully cooked, slices	3 to 4 days

Product	Storage
BACON AND SAUSAGE	
Bacon	7 days
Sausage, raw from pork, beef, chicken, turkey	1 to 2 days
Smoked breakfast links, patties	7 days
Summer sausage labeled “Keep Refrigerated”	
unopened	3 months
opened	3 weeks
HOT DOGS AND LUNCH MEATS	
Hot dogs	
opened package	1 week
unopened package	2 weeks
Lunch meats	
opened package	3 to 5 days
unopened package	2 weeks
DELI AND VACUUM-PACKED PRODUCTS	
Store-prepared (or homemade) egg, chicken, tuna, ham, macaroni salads	3 to 5 days
Pre-stuffed pork and lamb chops, chicken breasts stuffed w/dressing	1 day
Store-cooked convenience meals	3 to 4 days
Commercial brand vacuum-packed dinners w/ USDA seal, unopened	2 weeks
MAYONNAISE (COMMERCIAL)	
Refrigerate after opening	2 months
EGGS	
Fresh, in shell	3 weeks
Raw yolks, whites	2 to 4 days
Hard cooked, then refrigerated	1 week
Liquid pasteurized eggs or egg substitutes	
opened	3 days
unopened	10 days
DAIRY PRODUCTS	
Milk	10+ days
Butter	1 to 2 weeks
Cheese	
Harder cheeses	several months
Softer cheeses, after opening	1 to 3 weeks
Sour cream	1 month
Yogurt	10 days



■ Cook food thoroughly to kill bacteria. Don't chance illness by eating meat, poultry, fish and shellfish (including oysters), or eggs that are raw or only partially cooked.



■ Roast meat or poultry in oven temperatures of 325°F or greater.



■ Use a meat thermometer to help you determine doneness. Dial or digital thermometers are available, as are disposable thermometer sticks.



■ Keep the temperature chart (Chart #2) in your kitchen and refer to it when you cook.

SERVING.



■ **Don't cross-contaminate.** Keep raw and cooked meat, poultry, fish, and seafood separate. Never place cooked food on an unwashed plate that previously held raw meat, poultry, fish or seafood.



■ **Promptly refrigerate.** Never let food sit out of the refrigerator for more than two hours when preparing, serving, and eating. (At summer outings, when temperatures are 90°F and greater, let food sit out no more than 1 hour.)

Product	Storage
FRUITS (WHOLE)	
<i>Storage guidelines may vary depending on the condition of fruit when purchased.</i>	
Apples	weeks
Bananas	few days at room temp.; only refrigerate ripe bananas
Cantaloupes	few days
Grapes	few days
Grapefruit	1 week+
Oranges	weeks
Peaches	few days
Pears	1 to 2 weeks
Strawberries	few days
Watermelons	few days to 1 week
VEGETABLES	
<i>Storage guidelines may vary depending on the condition of vegetables when purchased.</i>	
Bell peppers	up to 5 days in a plastic bag
Broccoli	less than 4 days, unwashed in a plastic bag
Carrots	2 weeks stored unwashed in a plastic bag
Cauliflower	1 week in a plastic bag; use as soon as possible
Celery	2 weeks in plastic container
Cucumbers	1 week, unpeeled
Green beans	3 to 4 days, unwashed
Green onions (scallions)	5 days, unwashed; use as soon as possible
Leafy greens	3 to 5 days in plastic bag
Lettuce	
whole:	1 week or so
precut:	several days
Mushrooms	use within 1 or 2 days; store in paper bag
Onions	will keep for weeks in a cool, dry, dark place; refrigerate cut onions in a covered container
Potatoes	do not refrigerate; will keep in a cool, dry, dark place for up to 2 months
Radishes	up to 2 weeks
Spinach	2 to 3 days, rinsed and drained
Summer squash	up to 2 weeks
Sweet corn	keep refrigerated; use as soon as possible
Tomatoes	for best quality, do not refrigerate whole tomatoes; store at room temp. until ripe, then eat immediately

CHART #2

COOKING TEMPERATURE GUIDE FOR MEATS AND EGGS

Note: These are endpoint cooking temperatures for safety. You may choose to cook some cuts to higher temperatures for a greater degree of doneness or because you prefer the flavor.

Raw Food	Internal Temperature
GROUND PRODUCTS	
Hamburger	160°F
Beef, veal, lamb, pork	160°F
Chicken, turkey	165°F
BEEF, VEAL, LAMB	
Roasts and steaks	
medium-rare	145°F
medium	160°F
well-done	170°F
PORK	
Chops, roasts, ribs	
medium	160°F
well-done	170°F
Ham, fresh	160°F
Ham, fully cooked, as purchased	140°F
Sausage, fresh	160°F
VENISON	160°F
POULTRY	
Chicken, whole and pieces	180°F
Duck	180°F
Pheasant	170°F
Turkey (unstuffed)	
whole	180°F
breast	170°F
dark meat	180°F
stuffing (cooked separately)	165°F
FISH AND SHELLFISH	
Fish	flesh is opaque and flakes easily
Shellfish	flesh is opaque and shells open
EGGS	
Fried, poached	yolk and white are firm
Casseroles	160°F
Sauces, custards	160°F

This chart has been adapted for home use and is consistent with consumer guidelines from the U.S. Department of Agriculture and the U.S. Food and Drug Administration.



■ Pack lunches and picnic foods with cold packs in insulated carriers, and don't leave out in direct sun.

QUICK TIP. *Keep hot foods hot (above 140°F) and cold foods cold (below 40°F). Avoid leaving foods in the "Danger Zone," the temperatures between 40°F and 140°F, where bacteria grow rapidly. Never let food sit out for several hours, even if you intend to eat it later.*

LEFTOVERS.



■ **Divide** large amounts of leftover foods, such as soup, into shallow containers for quick cooling. For larger items, such as a whole turkey, cut meat off bones. Cover and place in the refrigerator or freezer.

■ **Date** packages of leftovers and, as a rule, use within four days of refrigeration.



■ **Reheat** sauces, soups and gravies to boiling; reheat other leftovers until they are piping hot, 165°F throughout.



■ When reheating by microwave, cover leftovers with a lid or vented plastic wrap. Stir foods several times to avoid cold spots, and let food stand for several minutes after microwaving.

■ **Discard** leftovers and other foods that look or smell strange or are old. Never taste them — harmful bacteria often do not change the taste or odor of food. Be careful with moldy foods; most should be discarded.

QUICK TIP. *As a rule, if the mold isn't a normal component of the food (as with blue cheese), it shouldn't be consumed.*

UNDERSTANDING FOODBORNE ILLNESSES.

Why use food handling precautions at home? Because bacteria that we cannot see, smell or taste can multiply to millions within a few hours at warm kitchen temperatures. Although most bacteria cause illness when they increase in large numbers, some (such as *E. coli* O157:H7) need only a few to cause illness.

Most instances of foodborne illnesses can be prevented by properly handling, storing, and cooking food to kill harmful bacteria such as *Salmonella*, *E. coli* O157:H7, and *Listeria*; parasites such as *Toxoplasma* and *Cyclospora*; and viruses such as hepatitis A. Proper handling will also prevent development of toxins produced by *Staphylococcus aureus* and other bacteria.

For more information on handling foods safely, contact:

• Your local K-State Research and Extension office

• U.S. Food and Drug Administration (FDA)
Outreach and Information Center
1-888-SAFE FOOD

• U.S. Department of Agriculture (USDA)
Meat and Poultry Hotline
1-888-674-6854

• U.S. Government Food Safety Gateway
www.foodsafety.gov

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

• USDA Food Safety and Inspection Service
www.fsis.usda.gov

• USDA MyPyramid Plan
www.mypyramid.gov

• Produce Marketing Association
www.pma.com

• National Fisheries Institute
www.nfi.org

• Midwest Dairy Association
www.midwestdairy.com

• K-State Research & Extension Food Safety
www.oznet.ksu.edu/foodsafety

Original authors

Karen P. Penner, Ph.D. Emeritus Professor
Kim Holt, Extension Assistant

Revised by

Karen Blakeslee, M.S.
Extension Associate, Food Science Institute
Department of Animal Sciences and Industry