

The Centers for Disease Control and Prevention (CDC) estimates that 1 out of every 6 (about 48 million) Americans will suffer a foodborne illness during any given year. Thousands of those made sick by germs in food will need hospitalization and die.

Food & Water Safety

What are the signs of illness from food?

- ▶ Diarrhea.
- ▶ Fever.
- ▶ Vomiting.
- ▶ Abdominal cramps.
- ▶ Dehydration.

How is food handled safely?

- ▶ Be smart when buying groceries (see section on next page).
- ▶ Keep hands, surfaces, and foods clean.
- ▶ Store foods in the right containers.
- ▶ Store foods at the right temperature.

- ▶ Thaw and prepare frozen foods as recommended.
- ▶ Follow specific preparation techniques.
- ▶ Recognize serving principles.
- ▶ Use good judgement when eating out.

Tips for the outdoorsman:

- ▶ Field dress, butcher, and store wild game using clean processes.
- ▶ Learn to how to safely select, clean, and store fish and shell fish.
- ▶ Select and clean wild produce with care. Discard any damaged or insect infested fruits, vegetables or game.

You can't see, smell, or taste harmful bacteria that may cause illness.

When buying groceries:

- ▶ Visit the refrigerated or frozen section last.
- ▶ Keep raw meat, poultry, fish and shellfish separate from fruits and vegetables while shopping.
- ▶ Keep raw foods separate from ready-to-eat foods.
- ▶ Do not buy food if the package is torn, damaged or leaking.
- ▶ Do not buy foods after the "Sell-By" or "Use-By" dates.
- ▶ Use insulated coolers if traveling or delaying your trip home.

When hunting and gathering:

- ▶ Do not gather, handle or eat wild game that seems ill or abnormal. Do not take any part of their body, including antlers.
- ▶ Wash hands and wear gloves while cleaning wild game.
- ▶ Do not eat or drink while gathering or cleaning game.
- ▶ Discard the entire carcass if the chest or abdomen is abnormal.
- ▶ Quickly take out intestines to prevent leakage. Game meat with leakage should be cut away. Meat touched by leakage should not be eaten by people or pets.

The American Veterinary Association provides information for hunters at: <https://www.avma.org/public/Health/Pages/Disease-Precautions-for-Hunters.aspx#protecting>.

Check the temperature of your refrigerator and freezer with an appliance thermometer. The refrigerator should be at 40 °F or below and the freezer at 0 °F or below.

Clean hands, surfaces, and foods

- ▶ Keep hands clean.
- ▶ Wash hands using hot soapy water after contact with raw meat, poultry, seafood, or unwashed fruits or vegetables.
- ▶ Wash hands *before* and *after* handling food.
- ▶ Clean hands *after* using the bathroom, changing diapers, or handling pets.
- ▶ Use separate cutting boards and knives for meats and vegetables. This avoids the spread of germs.
- ▶ Keep cutting boards, dishes, counters, utensils, and hands clean.
- ▶ Clean cutting boards and work surfaces with warm soapy water (with one tablespoon of bleach added).
- ▶ Wash fruits and vegetables before eating.



For more information on cleaning hands see *Clean Hands* on page 99.



When storing foods you should:

- ▶ Refrigerate perishable food within two hours (one hour when above 90°F).
- ▶ Store meats on the bottom shelves to avoid dripping on other foods.
- ▶ Keep meat in the original package and wrap with foil or plastic wrap before freezing.
- ▶ Remember: freezing meat does not always protect against disease.
- ▶ Cook beef, veal, lamb, or pork within three to five days.
- ▶ Cook or freeze fresh poultry, fish, ground meats, and other meats within two days.
- ▶ Store cans in a cool, clean, dry place.
- ▶ Discard dented, leaking, bulging, or rusted cans.
- ▶ Do not store food beyond expiration dates.

For hunters and gatherers:

- ▶ Promptly freeze, preserve, refrigerate or properly dispose of uncooked game.
- ▶ Keep uncooked wild game separate from cooked or ready-to-eat foods to avoid the spread of germs.

The Food and Safety Inspection Service, U.S. Department of Agriculture has recommendations and information on refrigerator and freezer food storage. Visit: www.fsis.usda.gov/factsheets/basics_for_handling_food_safely/.

When thawing food:

- ▶ Thaw in the refrigerator.
 - Make sure thawing meat and poultry are covered.
 - Keep juices from dripping into or touching other food.
 - Refrigerator-thawed meat and poultry may be refrozen before or after cooking.
- ▶ Use cold water for quick thawing if needed.
 - Place food in a leak-proof plastic bag.
 - Submerge in cold tap water.
 - Change the water every 30 minutes.
 - Cook right away.
- ▶ Use a microwave to thaw as needed.
 - Cook food right away.

Always cook any wild game until juices are clear – follow cooking directions on all packaged meat and poultry.

The **Danger Zone** is the temperature that germs can grow in food. Keep food *below* 40° or *above* 140°F (4° and 60°C).

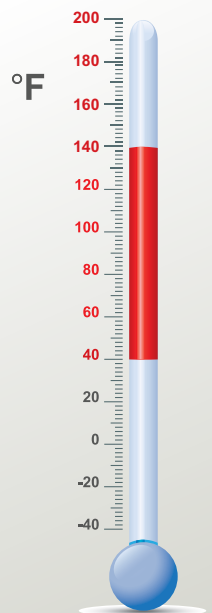


Table 1: Safe Minimum Cooking Temperatures

Category	Food	Temperature (°F)	Rest Time
Ground Meat & Meat Mixtures	Beef, Pork, Veal & Lamb	160	None
	Turkey & Chicken	165	None
Fresh Beef, Veal & Lamb	Steaks, Roasts & Chops	145	3 Minutes
Poultry	Chicken & Turkey (whole)	165	None
	Poultry Breasts & Roasts	165	None
	Poultry thighs, Legs & Wings	165	None
	Duck & Goose	165	None
	Stuffing (cooked alone or in bird)	165	None
Pork & Ham	Fresh Pork	145	3 Minutes
	Fresh Ham (raw)	145	3 Minutes
	Precooked Ham (to reheat)	140	None
Egg & Egg Dishes	Eggs	Cook until yolk & white are firm.	None
	Egg Dishes	160	None
Leftovers & Casseroles	Leftovers	165	None
	Casseroles	165	None
Seafood	Fin Fish	145 or cook until flesh is opaque & separates easily with a fork.	None
	Shrimp, Lobster & Crabs	Cook until flesh is pearly & opaque.	None
	Clams, Oysters & Mussels	Cook until shells open during cooking.	None
	Scallops	Cook until flesh is milky white or opaque & firm.	None

* Table from: Safe Minimum Cooking Temperatures, www.foodsafety.gov/keep/charts/mintemp.html

When preparing food:

- ▶ Clean your hands before and after.
 - Keep cutting boards, utensils, and countertops clean. Use hot, soapy water and mix with liquid chlorine bleach (1 tablespoon per 1 gallon of water).
 - Separate raw meat, poultry, and seafood from ready-to-eat foods.
 - Use at least two cutting boards.
 - One for raw meat, poultry, and seafood.
 - One for fresh fruits and vegetables.
 - Don't let "juice" from foods and packaging touch other foods, utensils, or surfaces.
- ▶ Use a clean plate or bowl for cooked food.
- ▶ Never use the same plate or bowl that held the uncooked or raw food. Germs from the raw food could get into the cooked food. Marinate meat and poultry in a covered dish in the refrigerator.

When using a thermometer:

- ▶ Use a food thermometer to check that meat, poultry, and egg dishes reach a safe temperature. Refer to the chart in Table 1 or visit: www.fsis.usda.gov/Is_It_Done_Yet/Brochure_Text/index.asp#SMIT.
- ▶ Follow the instructions for your food thermometer.
- ▶ Place thermometer in the thickest part of the food, not touching bone, fat, or gristle.
- ▶ Check at the end of the cooking time, but before the food is expected to be "done".
- ▶ Check the temperature in several places to make sure the food is evenly heated.
- ▶ Clean your food thermometer with hot, soapy water before and after each use.
- ▶ Large-dial oven-safe or oven-probe thermometers may be used during cooking.

Leftover food should be used within 4 days. Reheat leftovers to 165 °F.

- ▶ After cooking, allow food to "rest" before cutting or eating. "Rest" times are in Table 1.
- ▶ During the rest time, the temperature of the food will stay the same or rise. This will help destroy harmful germs.

When serving foods:

- ▶ Keep hot food at 140°F or warmer.
- ▶ Keep cold food at 40°F or colder.
- ▶ Keep food hot with chafing dishes, slow cookers, and warming trays during parties.
- ▶ Keep food cold by nesting dishes in bowls of ice or use small serving trays. Replace them often.
- ▶ Don't leave perishable foods out for more than 2 hours at room temperature (1 hour when the temperature is above 90°F).

2 Hour Rule: Keep hot food hot and cold food cold. If food that has been left out is not eaten within 2 hours, discard it.

When eating out:

- ▶ Choose a clean restaurant. Look for health department reports online or posted in the restaurant.
- ▶ Look around you *before* you sit down. If it's not clean think about eating somewhere else.
- ▶ Clean your hands with soap and warm water before eating. If soap and water aren't available, use alcohol hand rub to clean your hands.
- ▶ Pay close attention to the type of food and how it's prepared - harmful germs can be hidden in some foods.
- ▶ Request that your food be cooked completely through - especially meat, poultry, fish, and eggs.
- ▶ Make sure your hot food is piping hot and completely cooked. If lukewarm, send it back.

- ▶ Know that raw or undercooked finfish or shellfish (including oysters, clams, and mussels) are more likely to contain parasites or bacteria than foods made from cooked fish.
- ▶ Refrigerate take-out and “leftover” food within 2 hours after being served. If you will not be home within 2 hours, don’t take the leftovers home with you.
- ▶ Bring take-out and “leftover” food directly home after eating out and put your leftovers in the refrigerator as soon as you arrive.
- ▶ Eat delivery food within two hours after it arrives. This prevents the growth of harmful germs.

If the food is not going to be eaten within two hours, you can keep it hot in the oven—but the temperature must be set at or above 200°F (93°C). Side dishes, like stuffing, must also be kept hot in the oven. Covering food will help keep it moist while you keep it warm. Check with a food thermometer to make sure that the inside of the food is held at a temperature 140°F (60°C).



Water Safety

The U.S. has one of the safest water systems in the world. The quality and safety of tap water can vary based on the water source. Water at your home or work may come from a private well or spring, or community system. The Centers for Disease Control and Prevention (CDC) receive reports of illnesses related to drinking water such as:

- ▶ Chemicals and minerals (arsenic).
- ▶ Viruses.
- ▶ Bacteria.
- ▶ Parasites.
- ▶ Pesticide use.
- ▶ Industrial waster.

Water sources can also be made unusable by a failed septic system or from natural or man-made disasters. All U.S. public water systems follow the standards set by the U.S. Environmental Protection Agency (EPA). All water requires regular testing and disinfection. The EPA does not oversee private wells or springs. Owners using these should test their own water from time to time. Check with your local public/water works office or local health department to learn more about water testing such as:

- ▶ What to test for.
- ▶ Where to send tests.
- ▶ How often to test.
- ▶ What to do if your water is contaminated.

Reasons to test your water:

- ▶ ongoing “stomach” problems, nausea, diarrhea.
- ▶ old pipes that might be lead or are corroded.
- ▶ water that smells or tastes odd, “*smells like gasoline*”.
- ▶ water that is cloudy, frothy, or colored.

Learn more:

Department of Veterans Affairs (VA):

What Should I Know About Food Safety?

<https://www.hiv.va.gov/patient/daily/diet/food-safety.asp>

U.S. Department of Agriculture (USDA), Food and Safety Inspection Service:

Food Safety While Hiking, Camping & Boating

https://www.fsis.usda.gov/wps/wcm/connect/82318e67-8c96-47ac-8615-747f4c403816/Food_Safety_While_Hiking_Camping_Boating.pdf?MOD=AJPERES

Kitchen Companion; Your Safe Food Handbook

https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/kitchen-companion-your-safe-food-handbook/ct_index

Safe Food Handling

<https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets>

Cooking Meat? Check the New Recommended Temperatures

www.foodsafety.gov/blog/meat_temperatures.html

At Risk Populations

<https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/at-risk-populations>

Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov/healthywater/drinking/public/index.html>

<http://www.cdc.gov/healthywater/drinking/private/index.html>

http://www.cdc.gov/healthywater/pdf/drinking/Backcountry_Water_Treatment.pdf

Environmental Protection Agency (EPA)

<https://www.epa.gov/privatewells/protect-your-homes-water>

Camping

<http://www.dhhr.wv.gov/campsafety/campers/Pages/water-safety.aspx>