

Keep Food Safe When Cooking Outdoors

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Outdoor grilling is a fun way to cook food for family and friends. Although we often regard grilling outdoors as a summertime activity, many people cook outdoors year-round. To keep your cookouts safe, follow these steps before, during, and after grilling to ensure a clean workspace and safe food preparation.

Before you begin

Choose meat, poultry, or seafood that is fresh and of high quality. Once bought, take meat home and refrigerate it right away. If the trip home takes more than 30 minutes, use a cooler.

Cook or freeze fresh poultry, fish, seafood, or ground beef within 1 to 2 days; other meats such as steak and pork chops should be cooked or frozen within 4 or 5 days.

Thaw foods safely. The best way to thaw frozen meat, fish, poultry, or seafood is in the refrigerator. This lets the food to thaw completely and cook evenly.

You can also thaw foods in the microwave, but if you do, cook them right away. Do not thaw food at room temperature; this can increase the number of germs in it that make a person sick.

Marinate foods safely to add flavor, not germs. A marinade is a type of sauce used to tenderize or add flavor to foods. The amount of marinade needed depends on the amount of food you are cooking. In general, $\frac{1}{3}$ cup of marinade is used per pound of meat or poultry. If you're adding flavor, marinate for up to 2 hours. For tenderizing, marinate for up to 24 hours.

Follow these tips to marinate foods safely:

- ▶ Marinate food in the refrigerator only—never on the countertop.
- ▶ If the marinade will be used as a sauce, make an extra batch of marinade and set it aside. Used marinade should not be used again on cooked meat, poultry, or seafood.

Transport foods safely

When taking raw meat, poultry, fish, or seafood to another location, keep it cold (40 degrees F or colder) with ice or ice packs. Place the foods in the cooler right before leaving and take only what you plan to cook and eat that day.

Other tips to remember:

- ▶ Tightly wrap raw meat, poultry, or seafood, or store it in a sealed bag or container. Do not keep other foods in the same cooler as used for raw meat, poultry or seafood.

- ▶ Store beverages and other perishable foods in separate coolers.
- ▶ Keep raw meat, poultry, and seafood refrigerated until you are ready to cook them. Take out only the amount that will be immediately placed on the grill.
- ▶ Place the coolers in the shade or out of direct sunlight to help keep the temperature at 40 degrees or colder. Open the coolers only when absolutely necessary; this keeps the cold air inside.

Clean before, during, and after cooking

Keep your hands, cooking area, and cooking utensils clean to reduce the spread of harmful germs to the food. When cooking away from home, such as at a park or campsite, make sure there is plenty of clean water for washing your hands and utensils. If there is no source of clean water on site, bring your own.

If necessary, use paper towels, towelettes, or hand sanitizers to clean your hands. Although hand sanitizers can reduce germs, they will be less effective if your hands have visible dirt on them.

- Other ways to keep germs from spreading:
- ▶ Wash your hands **before and after** touching raw meat, poultry, or seafood.
 - ▶ **Wash work surfaces and cutting boards with hot, soapy water, and sanitize them before and after grilling.** You can make a sanitizing solution by mixing 1 teaspoon of bleach with 1 quart of water. If you are away from home and have no hot water, use the cutting boards only once. Do not use them again until they have been cleaned and sanitized.
 - ▶ Use one cutting board for fresh produce and another one for raw meat, poultry, fish, and seafood.
 - ▶ After you have placed raw meat, poultry, fish, or seafood on the grill, **wash the utensils**

and platters with hot, soapy water before reusing them to serve the cooked food.

Otherwise, the unwashed platters and utensils will contaminate the cooked foods.

Cook foods to a safe internal temperature

To kill harmful germs, cook the foods to a safe internal temperature. Meat and poultry cooked on a grill can brown very quickly, making it look as if it is done. However, **the only way to know whether a food is cooked enough is to measure its internal temperature with a food thermometer.** The chart below shows the minimum internal temperature that a food needs to be in order to be eaten safely.

Food	Minimum internal temperature
Beef, veal, and lamb steaks, and roasts	145 degrees F (medium rare) 160 degrees F (medium)
Hamburgers (made from ground beef)	160 degrees F
Poultry (whole, ground, parts)	165 degrees F
Pork (all cuts)	160 degrees F
Hot dogs (already cooked)	165 degrees F

To check the temperature, place the thermometer in the centermost part of the food—away from any bone. If the food is not done, cook it longer. Be sure to wash the thermometer before reusing it.

Flip meat, poultry, and fish at least once to ensure that it cooks evenly. You do not need to turn fish that is less than ½ inch thick.

To reduce grilling time, you can partially cook foods in a microwave, oven or stove. Just be sure that those foods are placed on a preheated grill immediately to finish cooking.

Keep hot foods hot

Keep cooked meat, poultry, fish, and seafood at 140 degrees F or warmer until it is served. Once the meats are cooked, keep them warm by moving them to the side of the grill, not directly over the coals where they could overcook. At home, place them in an oven set at 200 degrees F.

Eat or refrigerate cooked foods right away

Once cooked, the meat, poultry, fish, or seafood should be eaten or refrigerated right away. Never let them sit out for more than 2 hours. When the weather is warm (90 degrees F or above), eat or store cooked foods within 1 hour. Throw away any foods left out for more than 2 hours (1 hour if it is 90 degrees F or above).

Is grilling hazardous to your health?

Foods cooked over a grill can become charred by the flames and high heat. Fat from the meat, fish, or poultry drips down on the hot coals, causing flames that char the food.

Some research suggests that eating large amounts of charred foods can increase a person's risk for developing some forms of cancer. However, studies have found that eating moderate amounts of foods cooked to a safe internal temperature without charring does not appear to increase the risk of cancer.

To prevent charring of grilled foods:

- ▶ Remove as much of the visible fat as possible before placing the food on the grill.
- ▶ Clean the grill completely before cooking to remove any charred foods left over from past uses.

- ▶ If you are using starter fluid on charcoal, let any excess fluid burn off before placing the food on the grill. Never add extra starter fluid while the food is on the grill.
- ▶ Avoid using marinades that contain large amounts of fat, such as butter, margarine, or vegetable oil.
- ▶ Cover the grill with aluminum foil. Punch holes in the foil between the grids to let the juices drip out.
- ▶ Use tongs instead of a fork when cooking. The prongs of a fork can pierce the meat or poultry, releasing juices that cause the flames.
- ▶ If you are grilling fish or vegetables, wrap them in aluminum foil before placing them on the grill.
- ▶ Microwave food just before grilling it. This step releases some of the juices that can drip on the coals and cause flames.
- ▶ Cut off and throw away the charred portions of cooked foods.

For more information

American Dietetic Association Complete Food and Nutrition Guide, 3rd edition. By Roberta Larson Duyff. Wiley Publishers, New Jersey, 2006.

Barbecue and Food Safety. USDA Food Safety and Inspection Service. http://www.fsis.usda.gov/Fact_Sheets/Barbecue_Food.Safety/index.asp
Do grilled foods pose a cancer risk? By Pat Kendall. Colorado State University Extension, July 2005.

Outdoor Food Preparation and Safety. By Tim Roberts. Virginia Cooperative Extension. <http://www.ext.vt.edu/pubs/nutrition/348-016/348-016.html>

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