



Turkey: Alternate Routes to the Table

Just as a detour causes a car to take an alternate route, circumstances can alter the chosen cooking method for a turkey. An oven may fail at an inopportune time, a power outage may occur, and more than one large food item may need cooking. The conventional oven--the appliance most often used to cook a whole turkey--is not the only way to get the big bird cooked safely. The following methods suggested by the USDA Meat and Poultry Hotline are alternate routes for cooking a turkey safely.

Electric Roaster Oven

This tabletop appliance serves as an extra oven for cooking a turkey or large roast. Generally, the cooking time and oven temperature setting are the same as for conventional cooking. Always check the roaster oven's use and care manual for the manufacturer's recommended temperature setting and time.

Preheat the oven to at least 325 °F. Place the turkey on the roaster oven rack or other meat rack so the turkey is raised out of the juices that collect in the bottom of the oven liner. Leave the lid on throughout cooking, removing it as little as possible to avoid slowing the cooking process.

Cooking bags can be used in the roaster oven as long as the bag does not touch the sides, bottom, or lid. Follow directions given by the cooking bag manufacturer, and use a food thermometer to be sure the temperature in the innermost part of the thigh and wing and the thickest part of the breast reaches the safe minimum internal temperature of 165 °F.

Do Not Cook in Brown Paper Bags

Do **not** use **brown paper bags** from the grocery or other stores for cooking. They are not sanitary, may cause a fire, and may emit toxic fumes. Intense heat may cause a bag to ignite, causing a fire in the oven and possibly adulterating the turkey. The ink, glue, and recycled materials in paper bags may emit toxic fumes when they are exposed to heat. Instead, use commercial oven cooking bags.

Grilling a Turkey

Outdoor cooking of a big bird for the holiday meal is becoming a popular cooking method. During grilling, a turkey cooks by indirect heat in an outdoor covered gas or charcoal grill and a pan of water is placed beneath the grilling surface to catch the fat and juices that drip from the turkey as it cooks. Cooking is done by the hot, smoky, steamy air.

Covered Charcoal Grill

Turkeys that are 16 pounds or less are the recommended size for safe grilling. A larger turkey remains in the "Danger Zone"--between 40 and 140 °F--too long. **Do not stuff the turkey.** Because cooking is at a low temperature, it can take too long for the temperature of the stuffing to reach 165 °F. Also, smoked stuffing has an undesirable flavor.

Begin with clean equipment and a good quality charcoal. Build a pyramid of charcoal to one side. Ignite the charcoal, and let the coals get red hot. Place an appliance thermometer on the food rack to monitor the air temperature inside the grill. When the charcoal has developed white powdery ash--about 20 to 30 minutes--and the air temperature reaches 225 to 300 °F, place a drip pan with water in it to create moist, hot steam for cooking, in the center of the grill beneath where the turkey will be set and carefully push the hot coals evenly around the edge. Position the grill rack and place the prepared turkey on it (breast side up). Then place the cover on the grill.

Replenish with about 15 briquettes every hour as needed to maintain 225 to 300 °F. If desired, add water-soaked hardwood or fruitwood, in the form of chunks or chips, to add flavor to the turkey as it is cooking. **Do not** use a softwood (pine, fir, cedar, or spruce) because it gives the food a turpentine flavor and coats it with a black pitch or resin.

Cooking times depend on many factors: the size and shape of the turkey, the distance from the heat, temperature of the coals, and the temperature of the outside air. Always use a food thermometer. The turkey is done when the food thermometer reaches a safe minimum internal temperature of 165 °F in the innermost part of the thigh and wing and the thickest part of the breast. Estimate 15 to 18 minutes per pound if using a covered grill. A whole turkey can be successfully cooked, provided the turkey is not stuffed and has been completely thawed.

Covered Gas Grill

Gas grills have become very popular in the last few years. The gas heat can be supplied by either propane tanks or by natural gas piped from the home.

If your gas grill has only one large burner, place a pan of water under the grate to create indirect heat. Place the turkey in a roasting pan and place on top of the grill.

If the grill has two or three burners, the turkey should be placed away from the flame. This can be done by turning off one of the burners and placing the turkey in that area. When using a gas grill, always follow manufacturer's directions for cooking times.

Smoking a Turkey

Most smokers are cylinder-shaped devices and use either electricity, gas, or charcoal for heat. Follow manufacturer's directions for gas or electric smokers.

Charcoal smokers have two pans—one for charcoal and one for liquid. Smokers require a liquid to create the moist, hot smoke needed for cooking. When using a charcoal smoker, fill the pan for liquid with water, wine, apple juice, or the liquid you desire. Fill the charcoal pan with a good quality charcoal. Light the charcoal and place the cover on the smoker. When the smoker has reached an internal temperature of 225 to 300 °F, quickly place the turkey on the smoker rack and replace the cover. (Some smokers have built in temperature indicators. If yours does not, place an appliance thermometer on the smoker rack before starting your heat source.) Add charcoal every 1 to 2 hours, as necessary, to maintain 225 to 300 °F. Replenish the liquid as necessary. Heat and liquid are critical to maintaining the hot smoke that cooks the turkey.

When cooking with a smoker, start with clean equipment. Place the smoker in an area shielded from winds to maintain a safe cooking temperature. If desired, add water-soaked hardwood or fruitwood, in the form of chunks or chips, to add

flavor to the turkey. **Do not** use a softwood (pine, fir, cedar, or spruce) as it gives the food a turpentine flavor and coats it with a black pitch or resin.

Cooking times depend on many factors: the size and shape of the turkey, the distance from the heat, temperature from the coals, and temperature of the outside air. Completely thaw the turkey before cooking. Estimate 20 to 30 minutes per pound if using a smoker. **Do not stuff the turkey.** Because smoking cooks at a low temperature, it can take too long for the temperature of the stuffing to reach 165 °F. Also, smoked stuffing has an undesirable flavor. Always use a food thermometer. The turkey is safely cooked when the food thermometer reaches a safe minimum internal temperature of 165 °F in the innermost part of the thigh and wing and the thickest part of the breast.

Deep Fat Frying a Turkey

A whole turkey can be successfully cooked by the deep fat frying method provided the turkey is **not** stuffed and has been completely thawed. The turkey should be 12 pounds or less in size.

There are safety concerns when working with such a large amount of oil. Select a cooking vessel large enough to completely submerge the turkey in oil without it spilling over. The oil should cover the turkey by 1 to 2 inches. To determine the amount of oil needed, do a preliminary test using water. Place the turkey in the cooking utensil and add water to cover. Then remove the turkey and measure the amount of water. This is the amount of oil needed.

Select a safe location outdoors for deep fat frying a turkey. Heat the cooking oil to 350 °F. Slowly and carefully lower the turkey into the hot oil. Monitor the temperature of the oil with a thermometer constantly during cooking. Never leave the hot oil unattended. Allow approximately 3 to 5 minutes per pound cooking time. Remove turkey from the oil and drain oil from the cavity. Check the temperature of turkey with a food thermometer. The turkey is safely cooked when the food thermometer reaches a minimum internal temperature of 165 °F in the innermost part of the thigh and wing and the thickest part of the breast.

If the turkey is not done, immediately return the turkey to the hot oil for additional cooking. When the turkey is done, remove it from the oil and place it on a sturdy tray lined with paper towels. The skin can be golden to dark brown to almost black. Let it rest about 20 minutes before carving.

Allow the used oil to cool before pouring it into containers for refrigerator storage. The oil can be reused if it is strained, covered, and used within a month.

Cooking an Unstuffed Turkey from the Frozen State

It is safe to roast a turkey from the frozen state; however, it will take longer than a fresh or thawed bird. To determine an approximate cooking time, consult a timetable for oven-roasting a whole turkey. Use the timing for the size turkey you have; then add 50 percent of that time to the original time. (Do **not** smoke, grill, deep fat fry, or microwave a frozen turkey.)

Roasting time is approximate, so check the turkey often toward the end of the estimated cooking time. Insert a food thermometer in the innermost part of the thigh when it has defrosted enough to easily insert one. Cook to an internal temperature of 165 °F. The turkey is safely cooked when the food thermometer reaches a minimum internal temperature of 165 °F in the innermost part of the thigh and wing and the thickest part of the breast.

Giblet Packages

Giblet packages and the turkey neck may be found inside the turkey cavity and/or tucked under the flap of skin at the front of the breastbone. When the turkey has sufficiently defrosted, the packages can be removed carefully with tongs and/or forks during cooking.

1. If the giblets were paper wrapped before being inserted into the turkey cavity at the plant—which is the case with most whole birds—there is no safety concern if they cook completely inside the bird.
2. If giblets were packed in a plastic bag, and the bag has been altered or melted by the cooking process, do not use the giblets or the turkey because harmful chemicals may have leached into the surrounding meat. If the plastic bag was not altered, the giblets and turkey should be safe to use.

Do Not Cook a Frozen Turkey in an Oven Cooking Bag or in the Microwave

It is not recommended to cook a turkey from the frozen state in an oven cooking bag. It is unsafe to open the bag to remove the giblets during cooking because scalding may occur. Also, spilled juices and fat may cause an oven fire.

Cooking a frozen turkey in the microwave is not recommended because it can cook unevenly and might not reach a safe internal temperature throughout. The turkey may, however, be thawed (using the defrost setting) in the microwave. Cook the turkey *immediately* after thawing.

Microwaving a Turkey

Turkeys can be successfully cooked in a microwave oven—whole or in parts. Turkey parts can be cooked in a dish with a lid, or cover the dish with plastic wrap and vent the top. Timing can vary because of wattage differences, so follow the recommendations in the owner's manual. A 12- to 14- pound turkey is the maximum size most microwaves can accommodate.

Microwaves sometimes cook a whole turkey unevenly, so microwaving it in an oven cooking bag aids in even heat distribution. Microwaving a stuffed turkey is **not** recommended. The stuffing may not be cooked to the proper internal temperature when the turkey itself is done. Cook the stuffing in a separate casserole.

Allow 3 inches oven clearance on top and 2 to 3 inches of space around the bird. The time for cooking a turkey in the microwave is 9 to 10 minutes per pound on medium (50%) power. Rotate the bird during cooking to ensure even cooking.

If the bird is defrosted in the microwave, cook it immediately. Always use a food thermometer to determine doneness. The turkey is safely cooked when the food thermometer reaches a minimum internal temperature of 165 °F in the innermost part of the thigh and wing and the thickest part of the breast. After removing from the microwave, let the turkey stand 20 minutes before carving it.

Cooking Turkey in a Pressure Cooker

The availability of turkey parts such as breasts, legs, and thighs makes it possible to cook turkey in an old favorite, the pressure cooker. Used since the 1930's, a pressure cooker is a quick cooking, stove-top metal pot with a tight fitting lid bearing a dial or weighted gauge to verify the pressure.

When heated, the liquid converts to steam that, under pressure, can reach as high as 240 °F—hotter than the boiling point. As a result, food cooks in about a third or less time than conventional cooking methods. Because pressure cookers are made by various manufacturers and timing varies at altitudes above 1,000 feet, it is important to follow the manufacturer's instructions. The pressure specified must be kept constant for the recommended time, and the lid must not be removed until the pressure lowers and the pot cools.

ALTERNATE WAYS TO COOK TURKEY

Note: Always make sure whole turkeys reach 165 °F as measured in the innermost part of the thigh and wing and the thickest part of the breast. See pages 1 to 3 for detailed cooking information.

METHOD	SIZE	ESTIMATED COOKING TIME	NOTES
Electric Roaster Oven	8 to 24 lbs.	Generally same times as for oven roasting. See "Let's Talk Turkey."	Minimum oven temperature 325 °F. Check appliance manual.
Grilling: Covered Charcoal Grill or Covered Gas Grill	8 to 16 lbs.	15 to 18 minutes per pound. DO NOT STUFF.	Air in grill must maintain 225 to 300 °F; use drip pan.
Smoking a Turkey	8 to 12 lbs.	20 to 30 minutes per pound. DO NOT STUFF.	Air in smoker must maintain 225 to 300 °F; use drip pan.
Deep Fat Frying	8 to 12 lbs.	3 to 5 minutes per pound. DO NOT STUFF.	Oil must maintain 350 °F.
Cooking Turkey Frozen	8 to 24 lbs.	Add 50% additional cooking time per chart.	Do not use oven cooking bag; remove giblets during cooking.
Microwaving a Turkey	8 to 14 lbs.	9 to 10 minutes per pound on medium (50%) power. DO NOT STUFF.	Use oven cooking bag. Rotate during cooking.
Pressure Cooker	Turkey parts	Times vary by altitude.	Follow manufacturers' directions.

Food Safety Questions?

Call the USDA Meat & Poultry Hotline

If you have a question about meat, poultry, or egg products, call the USDA Meat and Poultry Hotline toll free at **1-888-MPHotline (1-888-674-6854)**; TTY: 1-800-256-7072.



The hotline is open year-round Monday through Friday from 10 a.m. to 4 p.m. ET (English or Spanish). Recorded food safety messages are available 24 hours a day. Check out the FSIS Web site at www.fsis.usda.gov.

Send E-mail questions to MPHotline.fsis@usda.gov.

Ask Karen!

FSIS' automated response system can provide food safety information 24/7.



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