



How to Cook Hamburgers

Most hamburgers are cooked on single-sided grills that cook one side of the meat at a time, such as frying pans, barbeque grills and broilers. In contrast, the clam-shell type grill cooks both sides at the same time.

We recommend that you either use a double-sided (clam-shell) type grill or turn patties frequently when cooking on a single-sided grill.

A study conducted at Washington State University compared methods of cooking hamburgers for their effectiveness in killing a type of bacteria that can cause serious illnesses (*E. coli* O157:H7). The hamburgers were cooked until all parts of the patty were at 160°F using the following methods:

- Double-sided grill (clam-shell), patties were not turned
- Single-sided grill (frying pan), with multi-turnovers (patties were turned every 30 seconds)
- Single-sided grill (frying pan), with patties turned over only once

The double-sided grill and single-sided grill with multi-turnovers are the best cooking methods for hamburger because the patties cook fast, there is less variation in temperature within the patty, and most important, these methods are most effective at killing *E. coli* O157:H7.

Results:

Rapid cooking methods (double-sided grill and multi-turnover) were more effective in destroying *E. coli* O157:H7 in hamburger:

- ▶ Less time to reach to 160°F
- ▶ Greater reduction of *E. coli* O157:H7
- ▶ Smaller temperature range within a patty—less than 5°F

A hamburger patty cooked on a single-sided grill with a single turnover will have a wide temperature range within the patty—**up to 25°F**.

Most Effective

Cooked on a double-sided grill with no turnover

2.7 min. to reach 160°F
Most effective to reduce *E. coli* O157:H7



Effective

Cooked on a single-sided grill turned every 30 seconds

6.6 min. to reach 160°F
Effective to reduce *E. coli* O157:H7



Least Effective

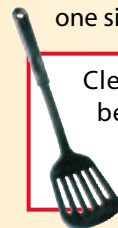
Cooked on a single-sided grill turned only once

10.9 min. to reach 160°F
Least effective to reduce *E. coli* O157:H7



Based on this research, our conclusions are that consumers should either:

- ▶ Cook hamburger patties in a double-sided grill that cooks the top and bottom of the patty at the same time.
- OR**
- ▶ Turn patties frequently when cooking on a single-sided grill or pan that cooks on only one side.



Clean the spatula and thermometer between uses by rinsing under hot running water for 5 seconds and wiping with a clean paper towel.



Temperatures to Check

- 180°F** Chicken and turkey
Whole birds, legs, thighs and wings
- 170°F** Chicken and turkey breasts
- 165°F** Ground turkey and chicken
Poultry is safe to eat at 160°F, but the meat may not look fully cooked. Between 170° and 180°F, poultry looks fully cooked.
- 160°F** Ground beef, lamb, veal and pork
Pork
Ham
Game meat
- 145°F** Beef, lamb and veal steaks and roasts (medium-rare) or higher

References

USDA-ARS/FSIS. Color of Cooked Ground Beef as It Relates to Doneness. Available online at <http://www.fsis.usda.gov/OA/pubs/colortech.htm> 1998

Lee SY. et al. Evaluation of Consumer-Style Cooking Methods for Reduction of *Escherichia coli* O157:H7 in Hamburger. *Journal of Food Protection* 2003

For more information:

WSU—<http://foodsafety.wsu.edu/>

USDA FSIS—<http://www.fsis.usda.gov/thermy/>
<http://www.foodsafety.gov/>



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New You're Cooking... Using a Food Thermometer!



Why use a food thermometer when cooking thin meat?

It's fast and easy to use a thermometer and your meat will be both **SAFE** and **HIGH-QUALITY**.

Safety

- Raw meat may contain harmful bacteria. These bacteria are killed when meat is cooked to 160°F.
- Many people rely on the internal color to check the doneness, but research has shown that color is NOT a good indicator of doneness.
- The **ONLY** way to be sure when meat is safe to eat is by testing the temperature with a thermometer.

Quality

- Meat cooked to 160°F is **juicy** and **tender**.
- Unless you use a thermometer, it is very easy to overcook meat.
- Overcooked meat is **tough** and **dry**.

Most people think they can check the doneness of meat just by “eyeballing it.” They look at it and judge the doneness by its appearance. They trust their experience. Experience is good, but it may be misleading: for example, meat color—pink or brown—can fool you!

According to a recent USDA study, 1 out of every 4 hamburgers turns brown in the middle before it has reached a safe internal temperature. Using a thermometer is the only way to be sure the meat you cook reaches a safe temperature.

Why is it important?

Millions of people get sick from dangerous bacteria in food every year but many people don't link their illness to foodborne bacteria. For some people— young children, pregnant women, people over 65, and people with chronic illnesses—getting sick from foodborne bacteria is more likely to result in serious health problems.

Using a food thermometer is the only sure way of knowing if your food has reached a high enough temperature to destroy foodborne bacteria.

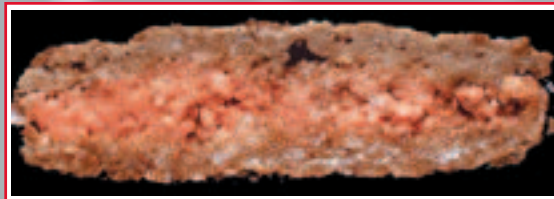
You should use your food thermometer when you are cooking:

- ▶ Ground meat patties and meatloaf
- ▶ Beef, veal, lamb
- ▶ Poultry (such as chicken and turkey)
- ▶ Pork
- ▶ Ham



Safety

The use of a food thermometer will improve the safety of meat. The appearance of meat, such as color, cannot be trusted as a way to decide if meat is completely cooked. In fact, the only way to know that meat has been cooked to a safe internal temperature is to use a food thermometer.



This **IS** a safely cooked hamburger, cooked to an internal temperature of 160°F, even though it's pink inside.



This is **NOT** a safely cooked hamburger. Even though it's brown inside, it is undercooked. Research has shown that some ground beef patties look done at internal temperatures as low as 135°F.

USDA Research (1998) showed...

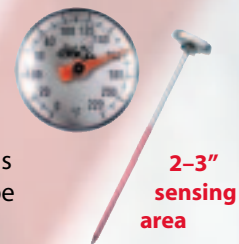
One out of every four hamburgers turns brown before it's been cooked to a safe internal temperature. And yet, only 3 percent of consumers checked hamburgers with a food thermometer according to a 1998 consumer food safety survey.

Quality

The use of a food thermometer can also improve the quality of meat. Using a food thermometer prevents over-cooking, because you know exactly when the meat is done, tender and juicy, but not over-cooked, tough and dry.

Food thermometers are very easy to use and should be used all-year round. There are 2 major types of food thermometers that are recommended for thin meat:

1) **An Instant-Read Dial Thermometer** reads the temperature along 2–3” of the probe—this means 2–3” of the probe must be inside the food.



2) **An Instant-Read Digital Thermometer** has its temperature sensor in the tip. The probe must be inserted at least 1/2-inch into the food.



Quick and easy steps to check your meat for proper temperature:

- ▶ **Step 1**
For thin meat, insert the probe into the side of the meat.
- ▶ **Step 2**
Insert the probe so at least 2–3” (dial) or 1/2-inch (digital) is in the center of the meat.
- ▶ **Step 3**
Allow 15–20 seconds for the temperature to stabilize.



Food Safety and Inspection Service, USDA

Apricot Ginger Glazed Chicken Breast

Serves: 4 • Preparation and cooking: 15 minutes

Ingredients

- ▶ 1 pound boneless, skinless chicken breasts
- ▶ 1/4 cup apricot jam or preserves
- ▶ 2 tablespoons Dijon mustard
- ▶ 1/2 teaspoon ground ginger



Preparation Directions

- ▶ If using large breast halves, cut each into two pieces. Salt and pepper chicken, if desired. Use a cooking method below to cook chicken.
- ▶ Place chicken breasts on clean serving plate and top with glaze.
- ▶ Serve with rice and steamed broccoli.

For glaze:

Combine apricot jam, mustard and ginger in glass measuring cup and heat for 1–2 minutes on *low power* in microwave.

Cooking Methods

The times given are only a guideline.

Cook chicken breasts until internal temperature, tested with a digital or dial instant read thermometer, reaches 170°F.

Clean the thermometer and spatula or tongs between uses by rinsing under hot running water for 5 seconds and wiping with a clean paper towel.

Helpful Hint: Pounding chicken breasts out to 1/2 inch thickness between wax paper or plastic wrap with a wooden kitchen mallet or rolling pin will decrease cooking time.

Skillet—Heat about 1 tablespoon oil in nonstick skillet over medium heat. Cook chicken in covered skillet about 10 minutes, turning once.



Broiler—Use top rack of oven. Preheat broiler and broiler pan on high for about 5 min. Brush chicken lightly with oil and place on broiler pan. Broil about 5 minutes on each side.

Indoor Grill—Follow manufacturers' instructions for boneless, skinless chicken breasts. For double-sided (clamshell type) grill, test temperature after about 3 minutes.

Outdoor Grill—Use medium high heat or medium coals. Cook in covered grill about 10 minutes, turning once.