

Cooking Meat and Poultry

ALL COOKS want to serve meals and snacks that are good and nutritious. We also want to make sure the food we are serving is safe to eat; particularly meat and poultry. When handled or cooked improperly, meat can be unhealthy to eat. Buying fresh, safe meat is critical, but it's also important to store your meat safely once you get it home. Once meat and poultry are ready to be used, there are numerous ways that they can be prepared.



Cooking methods for meat and poultry are generally divided into moist heat and dry heat methods. Different cuts are suited for different cooking methods and recipes.

Objective:



Summarize the principles of cooking meat.

Key Terms:



baste

high heat cooking

low heat cooking

medium

medium rare

medium well

rare

render

stuffing

well done

Principles of Cooking Meat

Meat is one of the highest expenses for foodservice operations. Selecting the right cuts of meat is just the first step. To get the most value for its money and to satisfy, or fill, customers' appetites, a foodservice operation must fully understand cooking techniques for meat. Tender

cuts of meat become tough when they are cooked improperly. Likewise, tough cuts of meat can become tender when they are cooked correctly. Meat can be delicious and nutritious, but only when it is properly prepared.



FIGURE 1. There are many types of meat available for consumption, knowing what cut of meat is right for your recipe or preference and important skill to know. Meat is very expensive and ensuring you get the most value for the money is key.

COOKING TECHNIQUES

The temperature of the heat source has an important effect on how meat is cooked and how the final product will taste.

HIGH HEAT COOKING: **High heat cooking**, such as broiling and grilling, is used for tender cuts of meat like tenderloins and strip steaks. High heat cooking can toughen proteins and dry out meat over extended periods of time. However, high heat, when used correctly, can result in an excellent final product.

- ◆ Roasting meats — roasting is a dry technique that uses hot, dry air to cook the food. To roast meat, season it and then place it in a hot oven. Roasted meats do not use water or other liquids and are not generally covered during the cooking process. It is helpful to baste the meat with its natural juices or a flavorful seasoned stock. This will keep the meat from drying out.
- ◆ Broiling and grilling meats — two dry cooking techniques that are popular ways to prepare meats. Broiling and grilling use high temperatures and relatively fast cooking times. Broiled and grilled meats are usually cooked to rare or medium with a browned crusty surface and a tender, juicy interior.
- ◆ Sautéing and pan frying meats — tender cuts of meat and thin pieces of meat are usually sautéed. Meats that contain bones or breaded meats are pan-fried. Both cooking techniques require you to pay attention to the amount of heat and fat you use.

LOW HEAT COOKING: **Low heat cooking** is the best method for preparing large cuts of meat, such as top round. Low heat cooking does not shrink the meat because moist heat, in the form of steam or liquid, penetrates the meat more quickly than dry heat. However, many restaurants use cuts of meat that do not require long cooking times.

- ◆ Braising meats and stewing meats — both methods of cooking begin by browning the food using dry heat. Braising then involves partially covering the meat with liquid and cooking until tender. During stewing, the liquid completely covers the meat. Both methods finish cooking by simmering in a liquid. The liquid used in both of these cooking methods is extremely important to the success of the final dish.

DETERMINING DONENESS

Most people are particular about how they like their meat cooked. The difference between meat that is well done and meat that is rare can be considerable.

INTERNAL TEMPERATURE: The best way to test a meat's doneness is to test its internal temperature. Follow these guidelines:

- ◆ Insert the thermometer at an angle, into the thickest part of the meat.
- ◆ Avoid taking the temperature in fatty areas.
- ◆ Avoid touching or getting near bone with the thermometer.
- ◆ Meat is done when it reaches its proper internal temperature, and held at that temperature for at least 15 seconds.

COLOR: The color of the meat changes when it is cooked. Learning what the colors indicate helps to determine when a particular type of meat product is done. Red meat starts red and changes to gray as the product cooks. Light meat turns pink and changes to white and then to tan as it cooks. Pork and veal become white to tan in color when cooked. It is important to remember that color is not the same as internal temperature.

- ◆ **Rare** meat is browned on the surface, with a red center. A thin outer layer of cooked meat appears gray.
- ◆ **Medium rare** meat is browned on the surface with a thicker outer layer of gray and a red to slightly pink center.
- ◆ **Medium** meat is browned on the surface with an even thicker outer layer of gray and a pink center.
- ◆ **Medium well** meat is browned on the surface with a thick outer layer of gray and a center that is barely pink.
- ◆ **Well done** meat is browned on the surface and gray in the center.

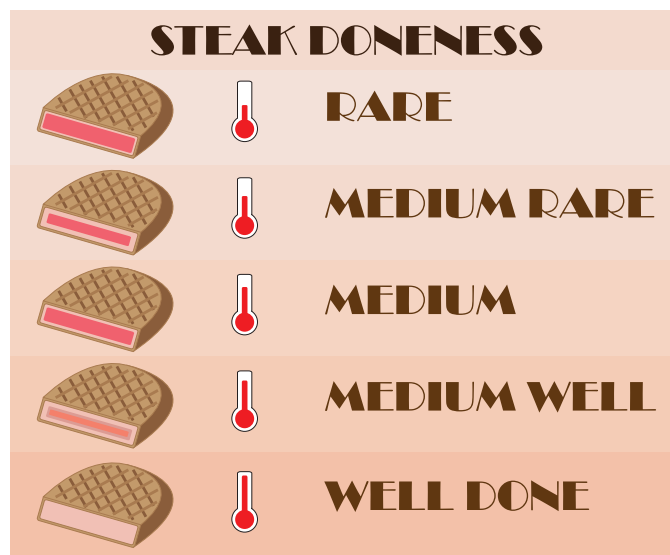


FIGURE 2. The color of the meat changes when it is cooked, learning the colors and what they mean, helps determine when a particular type of meat is done. [NOTE: It is important to remember that the color is not the same as internal temperature.]

Principles of Cooking Poultry

A variety of moist and dry methods can be used to prepare poultry. This makes poultry one of the most versatile food products served. Most poultry products are low in fat and can

quickly become dry and over-cooked. Learning how to best apply proper cooking methods will help you create a moist final product. Using lower temperatures and longer cooking times can produce moist results. Cooking with low heat, however, has disadvantages. It does not brown the surface of poultry well. Cooking at high temperatures causes the fat in the skin to **render**, or melt. This creates a well-browned and crispy skin that seals in the juices. The presence or absence of bones affects moisture and flavor during the cooking process. Bones actually help the bird retain some of its moisture.



FIGURE 3. Like meat, the cuts of poultry will affect the cooking method and time. Cuts with bone will require longer cooking times and will affect the moisture and flavor during the cooking process.

ROASTING AND BAKING: Roasting and baking poultry are essentially the same process. Many chefs use the term “roasting” when cooking whole birds and “baking” when cooking parts of a bird. Roasted or baked poultry should be golden brown on the outside and tender and juicy on the inside.

- ◆ To help whole poultry retain moisture during roasting, you should baste it during the last stage of the cooking process. To **baste**, spoon the fat drippings that have collected in the pan over the bird every 15 to 20 minutes. Baste only larger birds, like turkeys.
- ◆ Some recipes may call to sear poultry before it is roasted or baked. Searing means to brown the poultry’s surface quickly over high heat, usually in a hot pan. Searing helps seal in juices and is commonly done with chicken parts.



FIGURE 4. Basting a whole bird will help retain moisture during the roasting process. Typical birds that would be basted would be turkeys.

BROILING AND GRILLING: Broiled or grilled poultry can make a very attractive dinner plate. The food should have a well-browned surface and crosshatch grill marks, set at a 90-degree angle. Smaller birds or poultry pieces are ideal for broiling or grilling.

FRYING: There are three ways to fry poultry and all three usually require that the food first be coated with a seasoned flour mixture or batter:

- ◆ Pan frying — the poultry is dipped in a batter or seasoned flour mixture that will turn golden brown and crispy when the food is done. Poultry should be juicy and flavorful, not oily or greasy.
- ◆ Deep frying — poultry, especially chicken, is often deep fried in fat. The poultry pieces are coated prior to frying. Common coatings include batter, flour, egg, and cracker or cereal crumbs. The cooking time will depend on the size of the chicken pieces and the meat color. Dark meat takes longer to fry than light meat, and should be cooked separately.
- ◆ Pressure frying — uses the same frying principle as other frying methods but uses a commercial pressure fryer. A pressure fryer cooks foods more quickly and at lower temperatures than other frying methods. Foods that are pressure-fried are extra crispy on the outside and juicy on the inside. This makes them less greasy than other fried foods.

SAUTÉING: Sautéing is a method of cooking poultry in an open pan until it is brown and juicy. Sautéing requires little fat.

SIMMERING AND POACHING: Poaching is commonly used to cook whole, young, tender birds. Simmering is used for older, tougher birds. For simmering, poultry is cut into



BROADENING AWARENESS...

AMAZING ASPECTS: Free-Range Chickens

Chicken has become increasingly popular in recent years, in part because it is inexpensive, versatile and considered healthier than meat. Indeed, more than 100 million chickens are processed weekly in this country. To meet an ever-increasing demand, chickens are raised indoors in huge chicken houses that may contain as many as 20,000 birds. They are fed a specially formulated mixture composed primarily of corn and soybean meal. Animal protein, vitamins, minerals and small amounts of antibiotics are added to produce quick-growing, healthy birds.

Many consumers feel that chickens raised this way do not have the flavor of chickens that are allowed to move freely and forage for food. Some consumers are concerned about the residual effects of the vitamins, minerals and antibiotics added to the chicken feed. To meet the demand for chickens raised the old-fashioned way, some farmers raise free-range chickens.

Although the USDA has not standardized regulations for free-range chicken, generally the term “free range” applies to birds that are allowed unlimited access to the area outside the chicken house. Many consumers feel that free-range chickens is superior in flavor and quality, yet an added expense will come with.

pieces. Since these cooking methods do not create strong flavors, it is important that the poultry be seasoned when it is cooked. Use flavorful stock as the cooking liquid. In both cooking methods, the liquid should completely cover the poultry.

BRAISING: Braising is a cooking method that starts with dry-heat cooking and ends with moist heat cooking. Braised poultry should always be accompanied by the liquid in which it was prepared. Like poultry that is simmered or poached, braised poultry gets a boost of flavor during cooking from its cooking liquid. Seasonings can be added to the liquid during cooking. The liquid may be reserved to use in sauces.

DETERMINING DONENESS

No matter how poultry is cooked, the meat must be well done to be safe. Any kind of poultry should be cooked to a minimum internal temperature of 165°F. The cooked poultry should hold this temperature for at least 15 seconds. To properly measure temperature, place a meat thermometer in the thigh of the bird at its thickest part, away from the bone.

STUFFING

A **stuffing**, or seasoned food mixture often made with bread, can be an excellent addition to a poultry dish. However, the FDA Model Food Code says that all parts of stuffed food must be cooked to 165°F, including the stuffing. Although, the flesh of the bird may reach a safe temperature, the stuffing may not. Bacteria can quickly multiply in the stuff inside the bird's cavity. By the time the stuffing fully cooks, the poultry is often dry. To be safe, prepare the stuffing for whole poultry separately.



FIGURE 5. Stuffing can be added to any poultry dish, but important to remember that stuffing needs to be cooked to the proper temperatures, just like when checking the poultry itself.

Summary:



The primary goals when cooking meats and poultry is to develop flavor, tenderness and juiciness. Since these products are a major part of the food budget, it is also important to enhance their cooked yield. Animal proteins are made up of mostly

water, so the length of cooking time and temperature will affect the final outcome. Cook them too much or too long and they will become tough and dry, plus their yield will be greatly diminished. Optimizing the cooking process will preserve the quality and integrity of the product, without excessive moisture loss or shrinkage.

Checking Your Knowledge:



1. Describe how the temperature of the heat source can affect how meat is cooked.
2. What is the best way to test meat for doneness?
3. Differentiate between rare, medium rare and medium.
4. Describe the different ways to fry poultry.
5. How is poultry tested for doneness?

Expanding Your Knowledge:



Fresh and frozen beef, lamb, pork, and poultry can be treated in order to control the presence of microorganisms, such as E. coli and Salmonella, which can cause food borne illnesses. Although the permitted dose of ionizing radiation kills significant numbers of insects, pathogenic bacteria and parasites on and in the meat, it does not make food radioactive or compromise the food's nutritional values. Nor does radiation noticeably alter a food's flavor, texture, or appearance. The FDA requires that any packaged food subjected to radiation for preservation be labeled "treated with radiation" or "treated by irradiation". As consumers how does this make you feel? If you saw this label on the meat or poultry when you went to buy it, would you still buy it?

Web Links:



Cuisinart Culinary School "Meat and Poultry"

<https://www.youtube.com/watch?v=tiuQj5pgH9M>

Safe Handling of Fresh Meat and Poultry Products

<https://www.youtube.com/watch?v=2pZNESjuYmA>

How to Butcher an Entire Cow: Every Cut of Meat Explained

<https://www.youtube.com/watch?v=WrOzwoMKzH4>

How to Properly Fabricate a Chicken — Le Cordon Bleu

<https://www.youtube.com/watch?v=GAbXT5AkgG8>

Types of Poultry and How to Cook Different Poultry

<https://www.youtube.com/watch?v=ZcWkIVIAOSI>