

The Color of Meat

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Fresh meat bought at a grocery store often comes packaged in a styrofoam tray covered with an oxygen permeable film. On occasion, retailers may offer larger cuts of meat for sale in a vacuum package. Generally, these larger cuts packaged in vacuum bags cost less per pound because less labor is needed to prepare the meat for retail display. The physical appearance of meat, especially its color, is generally what influences many consumers to select one specific package of meat over another package.

Meat color is affected by many factors. The type of packaging used to display meat will influence meat color. A whole beef tenderloin packaged in a vacuum bag will normally appear purplish-red in color. This is due to the absence of oxygen in the vacuum package. Once meat is removed from a vacuum package and exposed to air, the surface of the meat will turn bright red. The interior of the muscle will remain purple because oxygen cannot penetrate to the center of the meat. Both the purple and red colors are natural for fresh meats.

Ground beef packaged in a tray overwrapped with film generally appears bright red in color. If you broke the ground beef apart to expose the inside, the color would appear dark brown to purplish. As this internal portion is exposed to air, it will also turn a bright red color. Over time, however, prolonged exposure to air will cause the color of the exposed surfaces to turn brown. This color change is normal. Fresh meat that smells fresh and appears brown in color is safe to cook and eat, but should be quickly frozen if you do not intend to prepare and consume it within a day.

Meat that is brown in color and does not smell fresh when you open the package indicates that the meat may have been stored at refrigeration temperatures too long. Off-odors are a sign that meat has spoiled and should not be consumed.

Myoglobin is a pigment found in muscle that influences meat color. Beef has higher concentrations of myoglobin than pork or poultry. This difference in myoglobin content causes beef to appear redder than pork, and pork to be redder than poultry.

Meat from mature animals is generally redder than meat from younger animals due to a higher myoglobin concentration. You would expect meat from mature sheep to appear darker and redder in color than spring lamb meat.

Muscles that were used for greater physical activity often have more myoglobin. That is why a chicken leg is darker than breast meat.