

Chow Line

News from the College of Food, Agricultural, and Environmental Sciences

Beef lovers: How safe are your burgers?

If steaks are safe when cooked to 145 degrees F, why do hamburgers need to be cooked to 160 degrees? All the meat comes from the same cow, right?

All beef comes from cattle, yes, but when it comes to food safety, ground beef is a whole different animal.

The reason is simple. Bacteria and other types of foodborne illness-causing contaminants that commonly feast on raw meat are surface creatures. As long as those steaks, roasts or chops aren't messed with, pathogens remain close to the surface where the heat from cooking gets hottest and, given the proper time and temperature, sears them out of existence.

But as soon as raw meat is ground up, anything on the surface becomes mixed throughout. The internal temperature at the very center of the patty must get hot enough for long enough to eliminate the E. coli, Salmonella and other bugs lurking there. Research shows that most, if not all, raw meat plays host to some type of bacteria. It doesn't matter if the meat is conventional or organic, or purchased from a mega super store or your friendly neighborhood butcher. You should just assume raw meat has some contamination and treat it with respect.

That's why you see those warnings on restaurant menus saying, "Consuming raw or undercooked meats, poultry, seafood, shellfish or eggs may increase your risk of foodborne illness." Unfortunately, not everyone gets the message. In 2014, a dozen people in four states, including Ohio, became ill after eating rare or medium-rare hamburgers; seven were hospitalized. E. coli O157:H7 was to blame. It's important to note that there were likely many more people affected: For every E. coli infection confirmed in a lab,



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the Centers for Disease Control and Prevention estimates another 26 cases go unreported.

Four of the five Ohioans sickened in that outbreak said they ate burgers at a "gastro pub" chain that regularly cooks burgers to just 145 degrees F, boasting that it is "the temperature of a perfectly cooked medium-rare burger." Food microbiologists tend to disagree with that assessment. In fact, food safety guidelines for food service establishments say they should cook hamburgers to 155 degrees F to be safe. At home, consumers need to cook burgers to 160 degrees because it's likely the meat has been in and out of refrigeration periodically — such as when you're at the grocery store or during the drive home — and thus needs an extra measure of safety during cooking.

Food safety experts' concerns go beyond ground meat. Today, an estimated 25 percent of steaks sold in the U.S. have been "mechanically tenderized" — that is, mechanically punctured with needles or knives or injected with a 10 percent solution to make the cut more tender. The trouble is that as soon as the meat is cut into, surface contaminants get inside. With beef, you've got to treat those cuts of meat like hamburger and cook them thoroughly to 160 degrees F to be safe.

Unfortunately, it's not always clear when meat has been treated this way. If the steak still has a bone, it's likely the surface is intact. But if you're not sure, ask the butcher for guidance.

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Editor: This column was reviewed by Linnette Goard, Ohio State University Extension's food safety specialist.

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