

Mechanically Tenderized Beef: Fact Sheet

What is Mechanically Tenderized Beef?

Mechanically tenderized beef is cuts such as steaks or roasts in which muscle fibers and connective tissue have been broken using sharp blades or needles.

Why is Beef Mechanically Tenderized?

The age of an animal, its genetic background, the location of the meat in a carcass and the degree of marbling result in variations in the tenderness of beef. The physical breaking of muscle fibers and connective tissue can enhance meat tenderness and the eating experience.

Is Mechanically Tenderized Beef Different than Non-Tenderized Beef?

Muscle fibers and connective tissue are broken in mechanically tenderized beef. Mechanical tenderization neither adds nor removes ingredients or substances from the meat.

Are Substances added to Beef During Mechanical Tenderization?

No, substances are neither added nor removed from beef during mechanical tenderization.

Is Mechanical Tenderization a Means to Increase the Value of Low Quality Beef?

The process of mechanical tenderization does not change the inherent nutritional quality of beef. Mechanical tenderization only breaks muscle fibers and connective tissues. Beef tenderness may be increased also by “aging” during which enzymes that reside in muscle tissue cause a breakdown of specific proteins in muscle fibres. Both processes enhance eating satisfaction.

Beef is naturally nutrient rich; beef contains 14 essential nutrients making it a delicious and healthy choice for Canadian families. Additional information about high quality nutrient rich Canadian beef may be found at: <http://www.beefinfo.org>.

Which Beef Cuts are Mechanically Tenderized?

Steaks and roasts are the beef cuts that are most commonly tenderized.

Who mechanically Tenderizes Beef Cuts?

Beef cuts may be tenderized by meat processors, retail stores, foodservice establishments or individual consumers.

What Proportion of Beef is Mechanically Tenderized?

Beef may be tenderized by meat processors, retail outlets, foodservice establishments or individual consumers. The Canadian Meat Council does not have statistics on the quantities of beef that are mechanically tenderized at the various levels of the meat processor to consumer plate distribution chain.

How can Consumers Know if Beef has been Mechanically Tenderized?

The mechanical tenderization of beef has been a common and longstanding practice at all stages of the beef chain from meat processors to retailers, foodservice establishments and consumers.

On October 20 Health Canada announced that it has “*started a review of the science around the safe handling and cooking of beef products that are mechanically tenderized, to identify what advice should be communicated to consumers and the food industry*” (http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/2012/2012_158-eng.php).

The Canadian Meat Council has advised Health Canada that meat processors support the identification of mechanically tenderized beef products and that, as an interim measure pending further research, the industry concurs with a recommended cooking temperature of 71 degrees Celsius.

Is Mechanically Tenderized Beef Safe?

The Canadian meat inspection system is among the most stringent in the world. Meat processors work cooperatively with Health Canada and the Canadian Food Inspection Agency to ensure that the highest standards for food safety are maintained (http://www.cmc-cvc.com/english/news_e.asp).

The meat industry implements a comprehensive food safety management system to prevent the contamination of beef products with *E. coli* 0157:H7. Food safety management incorporates a series of “hurdles” in the processing system. Each hurdle contributes to a decrease in the number of bacteria so that the likelihood of pathogens entering the food supply is greatly reduced.

Hot water and steam pasteurization of beef carcasses are among the most effective hurdles currently available. Other hurdles include organic acids such as lactic acid, a naturally occurring substance. Prior to their use, antibacterial agents are evaluated for safety and efficacy and approved by Health Canada.

According to the Public Health Agency of Canada, the rate of *E. coli* 0157 infection from all sources, including improperly cooked beef, fell from 2.99 per 100,000 Canadians in 2006 to 1.39 per 100,000 in 2011. *E. coli* 0157:H7 bacteria are destroyed when meat is cooked according to Health Canada recommended temperatures (<http://www.hc-sc.gc.ca/fn-an/securit/kitchen-cuisine/cook-temp-cuisson-eng.php>).

What can Consumers do to Contribute to Food Safety?

Food safety is a shared objective of everyone in the producer, processor, retail, foodservice and consumer food chain. Consumers should follow the recommendations of Health Canada, the Canadian Food Inspection Agency and the Public Health Agency of Canada with respect to food handling in general and the cooking of meat in particular (<http://www.hc-sc.gc.ca/fn-an/securit/kitchen-cuisine/index-eng.php>).

Pending the completion of its review of mechanical tenderization, Health Canada recommends that mechanically tenderized steak and beef cuts be cooked to an internal temperature of 71 degrees Celsius. A temperature of 71 degrees Celsius would cook a steak or roast to medium, although a digital food thermometer should be used to ensure that the safe internal temperature is reached.