

QUESTIONS AND ANSWERS ABOUT TENDERIZED MEATS

Why is meat tenderized?

Tender meat is prized by consumers. The simple act of breaking muscle fibers makes the meat more tender. An animal's age, genetic background, the degree of marbling in meat and other factors all can make meat more or less tender. Because tender meat is valued by consumers, meat companies sometimes use tenderization techniques to ensure a good eating experience. Breaking muscle fibers and connective tissue physically or using marinades that are injected into the meat can have significant impact on tenderness and, in turn, satisfaction.

How is meat tenderized?

The two most common methods of tenderizing meats are:

Mechanical tenderization – sharp blades are inserted into meat cuts to break connective tissue and muscle fibers. When mechanical tenderization is used, the resulting meat is sometimes called “non-intact” because the muscle is not in its original or intact state.

Tenderization with marinades – marinades that include tenderizing solutions and flavorings also can improve less tender cuts of meats. Typically, the marinades are injected into the meat using hollow needles or in some cases meat cuts and marinades may be tumbled inside a large machine that rotates like a clothes dryer. In these rotating drums, the meat and marinade solutions use the tumbling motion to massage the marinade uniformly throughout the muscle to increase tenderness. These products are often called “enhanced” beef products.

Sometimes these two techniques are combined; cuts are mechanically tenderized and then tumbled with marinade.

Are these tenderization processes safe?

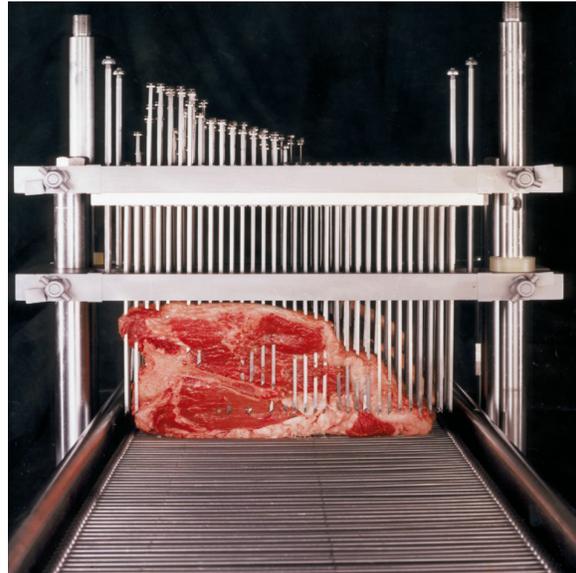
Yes. Meats tenderized through these techniques have a very good safety record. To help ensure safety, the Beef Industry Food Safety Council has created “Industry Best Practices for Pathogen Control During Tenderizing/Enhancing of Whole Muscle Cuts.”

(www.bifsc.org).

U.S. Department of Agriculture (USDA) scientists and public health experts have studied this mechanical tenderization process thoroughly.

In 2008, the Food Safety and Inspection Service (FSIS) said, “The risk of illness from *E. coli* O157:H7 in nonintact beef steaks is not significantly higher than intact beef steaks.” (Dr. Carl Schroeder, presentation “FSIS Risk Assessments for *E. coli* O157:H7,” April 9, 2008).

Sporadic outbreaks have been linked to products that were mechanically tenderized and marinated. The industry examines information from any outbreak to determine what we can learn from it and how we can



Above is a typical blade tenderizer, which breaks muscle fibers and connective tissues.



Above is a meat tumbler machine. This can be used to distribute the marinade solution in the meat.

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improve. Available information indicates these outbreaks resulted from process control failures or improperly handling and preparation.

Mechanically Tenderized/Marinated Beef Recalls			
YEAR	PRODUCT	POUNDS	ILLNESS
2003	Enhanced bacon-wrapped steak	739,000	10
2004	Tenderized, marinated steak	406,000	4
2007	Tenderized, marinated steak	259,230	5
2007	Tenderized steak *	129,000	NA
2009	Tenderized, marinated, tumbled steak	248,000	21
2012	Ground beef and tenderized steak **	2,057	0

*Recall was initiated by ground beef and expanded to include mechanically tenderized products. No illnesses were associated with mechanically tenderized steaks.

**The establishment did not hold product pending testing results, which resulted in this recall.

these products are typically not tested as extensively as ground beef.

Testing alone cannot guarantee that food is safe. Prevention of pathogens in beef products require the development and implementation of a complete food safety system that includes multiple hurdles to prevent harmful pathogens in the product. In fact, it is statistically impractical to implement a sampling program to detect product with a very low prevalence of contamination. Following recommended processing procedures would have likely prevented outbreaks.

Do these products require special labeling?

Marinated products must be labeled to show the amount of marinade contained in the product and the ingredients used in the marinade. Products that are only mechanically tenderized are not required to be labeled, because the product contains no added ingredients.

Where are these products typically sold?

Tenderized products are most commonly sold to foodservice providers, but they are also sold at supermarkets and other outlets.

Are these products regulated differently?

The presence of *E. coli* O157:H7 on any non-intact beef products like tenderized steak or hamburger makes the product adulterated under USDA rules. That means it may not be sold, and if it has entered commerce, it must be recalled.

Does the industry test these products for pathogens?

Because the risk of illness is very low in this particular type of product,