

The Gross Meat Ingredient You're Probably Eating

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The name suggests something not so appealing, but transglutaminase, or meat glue, is used commonly in many processed foods. Questions remain about how safe it is.

The phrase “meat glue” is likely to elicit a few scrunched noses or raised eyebrows, and the image of “gluing meat” together seems entirely unappealing. But transglutaminase (TG), or meat glue as it’s commonly called, is used in many processed foods today. However, it’s a controversial food additive. Indeed, in 2010, the European Union banned its use, according to [Food Safety News](#). But the United States Department of Agriculture

(USDA) still allows it, and the Food & Drug Administration (FDA) classifies meat glue as “generally recognized as safe.” Actually, the [United States still uses a lot of ingredients that are banned in other countries.](#)

Read on to find out what the product is, how it’s used, and if it’s safe for you to consume.

What is meat glue?

Meat glue, or transglutaminase, is an enzyme that is found naturally in humans, animals, and plants. It can form bonds between different types of proteins or different pieces of protein, which is why it’s been given the nickname “[nature’s biological glue.](#)”

These enzymes have several purposes, and they don’t all involve meat products. Indeed, TG can be used in baked goods and dairy.

“Meat glue is made from cultivated bacteria from blood plasma from pigs and cows,” says Rebecca Park, RN, New York City, and creator of [RemediesForMe.com](#). “Other meat glues are made from cultivated bacteria from vegetables and plant extracts. Most meat glues are mixed with other ingredients, such as gelatin and caseinate.”

Why is transglutaminase used?

“With the help of transglutaminase, small pieces of meat can be bound together to create larger, more uniform pieces,” says Ysabel Montemayor, RD, nutrition director at [Fresh n’ Lean](#). “It has been used to develop or improve the texture of a variety of products such as sausages, chicken nuggets, imitation crab, bread, and cheese.”

Pork tenderloin is a good example of how TG can be used. This cut of meat is naturally coned shape, with a broader, thick end that tapers to a smaller, narrower one. With transglutaminase, meat producers can “glue” multiple pork tenderloins together to create a tenderloin that has uniform shape and size. This might be ideal in restaurants or catering companies where having even, equal sizes is preferred.

How much meat has it?

The [American Meat Institute](#) says about 8 million pounds of meat in the United States contain TG. In the United States every year, more than 49 billion pounds of meat are consumed. That means about 0.016 percent of all the meat in Americans' diet has the enzyme. Other types of preservatives may be more common, and [these signs might indicate you're eating too many food additives](#).

If you eat processed foods, such as sausage, hot dogs, and chicken nuggets, your diet likely has a larger amount of that small percentage than the diet of someone who avoids the “glued” foods.

How can you tell if a food has meat glue?

The [USDA requires](#) meat, egg, and poultry producers to list transglutaminase on ingredient labels, but they don't always have to write the word out in such clear terms. You may see “TG enzyme,” “enzyme” or “TGP enzyme” used. If the food you're holding has used the enzyme at any point in the manufacturing process, the food should also be labeled as “formed” or “reformed” meat.

For other products, including breads and dairy, the label may be less clear. If you're unsure about the food you're buying, contact the manufacturer. Most manufacturers don't want you to know these [50 things that could change the way you eat](#).

Is it safe?

The USDA and FDA both agree that meat glue is safe. However, some researchers and food experts have raised concerns.

The biggest concern—and ultimately the reason the EU banned the enzyme—is bacterial contamination. Each time proteins are “glued” together, the risk for introducing more bacteria, such as *E. coli*, goes up.

“The risk of food poisoning in food that is glued together is extremely high,” Park says. “This is because the smaller pieces of meats used have had a chance to grow bacteria before they are glued together.”

The glued meat may also be harder to cook, which increases the risk for foodborne illness. If heating can't kill the potentially harmful bacteria, you could become sick more easily. TG might be OK, but [these food additives are harmful](#).

Are there any side effects or concerns?

According to a 2016 study in [Autoimmunity Reviews](#), individuals with a gluten sensitivity or celiac disease may need to avoid foods made with TG. That's because the enzyme may increase the allergic load in the body, which could cause serious reactions. People with weakened immune systems, digestive diseases, food allergies, and sensitivities may be advised to avoid all foods with TG and stick to whole, unprocessed meats.