A tenacious myth would have you believe the best way to thaw frozen food is slowly, in the refrigerator. But food science researchers say it’s just not so.

Most people know that food should be frozen as quickly as possible, to retain quality and flavour. The same turns out to be true when it comes to thawing frozen food, too — quicker is better.

So says Susanne Ekstedt, a researcher at the Food and Bioscience unit of SP Technical Research Institute of Sweden in Gothenburg.

“This is something food scientists have known to be true for a long time now. But this knowledge is mostly confined to the food industry. Most people don’t seem to be aware of this,” Ekstedt said.

What often happens instead is that people thaw their meats slowly in the refrigerator. While keeping meat cold while thawing is important to limit bacterial growth, it’s possible to thaw food quickly in water.

Ekstedt’s recommendation is based on the institute’s own experiments with freezing and thawing different kinds of foods. Their conclusion: The best way to thaw frozen meat or fish is to put it in cold water. You have to wrap the food in plastic, of course, to keep the water out of the food, but water will thaw food quickly and effectively.

The reason for this is simple: Water conducts heat better than air. And the faster food is thawed, the better it tastes.

Ice crystal damage

One reason that freezing and thawing foods quickly preserves their quality has to do with ice crystal formation.

When anything, be it snow or food, stays slightly below the freezing point for a long time, it creates the perfect environment for large ice crystals to grow.

In food, the formation of these large ice crystals during freezing can do a great deal of damage to cells, reducing the food’s ability to hold in fluids after it is thawed.

The result? Dry meat and flaccid vegetables.

Clarence Birdseye, who is credited with being the founder of the modern frozen food industry in the United States, is said to have discovered this principle himself when he worked in Labrador and was taught by the native Inuits how to ice fish.
He discovered that fish he caught at -40 degrees C froze quickly and tasted quite fresh when thawed. He went on to invent a series of techniques that allowed foods to be frozen quickly, preventing the formation of large ice crystals.

To this day, the food industry is well aware of the problems posed by ice crystal formation. In fact, it’s not uncommon to buy frozen vegetables with labels that advise consumers to thaw vegetables quickly.

Never scientifically documented

Bjørg Egelandsdal is a professor at the Norwegian University of Life Sciences in Ås whose specialty is meat. “There has never been any good scientific evidence behind the advice that food should be thawed in the refrigerator,” she says. “Maybe the idea behind this advice is that refrigerator thawing is most hygienic. It is true that meat and other foodstuffs should be stored in the refrigerator if they are thawed, but it is definitely better to thaw food quickly in water if you are going to use it right away,” she said.

Another potentially quick way to defrost food, the microwave, can be hard on meat, says Per Einar Granum, a microbiologist also at the Norwegian University of Life Sciences. He says if you are going to use the meat in a casserole or stew, thawing it in a microwave can be acceptable, because the meat will later become tender as it cooks.

But if you plan to grill your meat, forget the microwave. Even if you use the “thaw” program, it is “a little too brutal for the meat,” he says.

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Read the Norwegian version of this article at forskning.no [5]

Thaw your frozen meats in a sealed bag in a bowl of cold water or in the sink. Vegetables should also be thawed quickly for best eating. (Photo: Bård Amundsen) [6]

Nancy Bazilchuk [8] based on an article by Bård Amundsen [9]

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