# Fish and Fisheries Products Hazards and Controls Guidance

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### US Food and Drug Administration

###  [Fish and Fisheries Products Hazards and Controls Guidance](http://www.fda.gov/food/guidancecomplianceregulatoryinformation/guidancedocuments/seafood/fishandfisheriesproductshazardsandcontrolsguide/default.htm)

**Controlling parasites**

The process of heating raw fish sufficiently to kill bacterial pathogens is also sufficient to kill parasites. The standard recommended cooking temperature is 140 F (60° C).

The effectiveness of freezing to kill parasites depends on several factors, including the temperature of the freezing process, the length of time needed to freeze the fish tissue, the length of time the fish is held frozen, the fat content of the fish, and the type of parasite present. The temperature of the freezing process, the length of time the fish is held frozen, and the type of parasite appear to be the most important factors. For example, tapeworms are more susceptible to freezing than are roundworms. Flukes appear to be more resistant than roundworms.

Freezing and storing at -4°F (-20°C) or below for 7 days (total time), or freezing at -31°F (-35°C) or below until solid and storing at -31°F (-35°C) or below for 15 hours, or freezing at -31°F (-35°C) or below until solid and storing at -4°F (-20°C) or below for 24 hours is sufficient to kill parasites. FDA's Food Code recommends these freezing conditions to retailers who provide fish intended for raw consumption.

Note: these conditions may not be suitable for freezing particularly large fish (e.g. thicker than six inches).

The effectiveness of hydrostatic pressure in the elimination of parasites from fish flesh is being studied.

Brining and pickling may reduce the parasite hazard in a fish, but they do not eliminate it, nor do they minimize it to an acceptable level. Nematode larvae have been shown to survive 28 days in an 80° salinometer brine (21% salt by weight).

Fish that contain parasites in their flesh may also contain parasites within their egg skeins, but generally not within the eggs themselves. For this reason, eggs that have been removed from the skein and rinsed are not likely to contain parasites.

Trimming away the belly flaps of fish or candling and physically removing parasites are effective methods for reducing the numbers of parasites. However, they do not completely eliminate the hazard, nor do they minimize it to an acceptable level.