What is Scombrotoxin Poisoning?

Scombrotoxin poisoning, also called histamine or scombroid poisoning, occurs when fish are improperly handled and permitted to build up biogenic amines such as histamine, cadaverine, and putrescine.

It is one of the three most common food-borne illnesses associated with seafood in the United States.

SYMPTOMS INCLUDE:

Flushing of the Face and Neck
Tingling Sensation of the Tongue
Vomiting and/or Diarrhea

The illness occurs very quickly, is usually short-lived and very uncomfortable. It takes a very small amount of amines to cause illness.

What Causes Scombrotoxin Poisoning?

Biogenic amines, including histamine, are natural chemicals that can form in fish anytime during harvest, preparation and storage. These amines may begin to develop after the fish dies, and will increase if the fish is left in the water too long, or if it is not chilled immediately on board.

In the case of histamine formation, improper handling allows histidine to be changed into histamine by bacteria present in the gills and gut. Because histidine is present in greater amounts in certain species, the amount of histamine that can form in a particular fish varies greatly.

Once histamine is formed, it does not go away and no amount of washing or cooking will remove or destroy it. Likewise, freezing will not reduce or destroy histamine after it has formed. Prevention is the only way to assure histamine is not present in fish.

What Species of Fish Present a Risk of Becoming Unsafe?

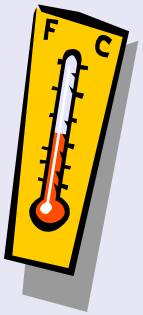
Fish identified by the FDA as being most likely to cause scombrotoxin poisoning are:

AMBERJACK
MAHI MAHI
MACKEREL
BLUEFISH
HERRING
MARLIN
BONITO
WAHOO
TUNAS
JACKS
SHAD

What Can You Do to Prevent Biogenic Amine Formation?

Rapid cooling is key. Fish should be packed in ice, ice slush, chilled seawater or chilled brine as quickly as possible using appropriate handling procedures.

40°F



Formation of biogenic amines is drastically reduced by cooling fish to 40° F (internal) as quickly as possible. Remember that larger fish take longer to cool than smaller fish. Evisceration (removal of the guts) of larger fish is a good way to help remove the bacteria that causes formation of biogenic amines. Evisceration must be done carefully so that the guts do not contaminate the meat or other fish. Filling the gut cavity with ice or cooling media quickens internal chilling.

Even if a fish smells good, illness-causing histamine could still be present if the fish was not chilled rapidly or kept cold.

Whether you are a commercial harvester or a charter boat operator involved in catching and storing fish, you are the first and best defense against formation of histamine and other biogenic amines.

Properly chilling fish prevents spoilage bacteria from multiplying and helps ensure that your catch stays in top quality condition throughout the fishing trip.

If you, the fisherman, are selling to a processor (any wholesaler), they rely on you to assure that these fish have been properly handled. The U.S. FDA regulation on seafood safety requires that processors have controls for fish species that have the potential to form histamine.

Cooling controls should be monitored and documented on the fishing vessel to assure that specific temperature requirements are met. Work with your buyer to determine the best way to meet and document these safety guidelines. The FDA also offers guidance for meeting time and temperature targets for seafood safety.

For More Information:

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ICE YOUR FISH

Help Prevent Scombrotoxin Poisoning

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