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

**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
- Bonito
- Mahi Mahi
- Mackerel
- Marlin
- Bluefish
- Herrings
- Mahi Mahi
- Amberjack
- Tuna
- Mahi Mahi
- Amberjack

**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. When these amines mix with the fish, they can form in fish anytime during preparation and storage.

**What Can You Do to Prevent Biogenic Amines Formation?**

Rapid cooling is key. Fish should be packed in ice, ice slush, chilled seawater, or chilled brine as quickly as possible. Refrigeration (removal of the gills) of larger fish is a good way to help remove the bacteria that cause formation of biogenic amines.

- Cooling fish to 40°F (internal) as quickly as possible
- Evisceration (removal of the guts) of larger fish is a good way to help remove the bacteria that cause formation of biogenic amines
- Filling the gut cavity with ice or cooling media

- Formation of biogenic amines is drastically reduced by rapid cooling of biogenic amine forming fish.

**What Species of Fish Present a Risk of Becoming Unsafe?**

**Flushing of the Face and Neck**

- Histamine is not present in fish
- Destroy histamine after it has formed
- Freezing will not reduce or destroy histamine
- Flushing is not present in fish

**Vomiting and/or Diarrhea**

- Histamine is present in greater amounts in certain species
- Histamine is present in greater amounts in certain species

**Histamine Poisoning**

Histamine poisoning is not present in fish.

**Biogenic Amines Poisoning**

Biogenic amines such as histamine, cadaverine, and putrescine can be changed into histamine by bacteria. Improper handling allows histamine to form in the case of histamine poisoning, whereas histamine is already present in the case of histamine poisoning.
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.

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