



Seafood Health Facts: Making Smart choices

Balancing the Benefits and Risks of Seafood Consumption

Resources for Healthcare Providers and Consumers

Recreationally Caught Fish and Shellfish [1]

Overview

Fish and shellfish are unique foods in that large amounts are harvested by individuals for their own personal consumption. The National Academy of Sciences estimated that one-fifth of the fish and shellfish eaten in the U.S. comes from recreational or subsistence fishing in the ocean, in marine bays or estuaries, or in freshwater lakes, ponds, rivers or streams.

Food Safety Issues

Chemical Contaminants

Individual fishermen may catch fish from waters that are known to contain elevated levels of man-made pollutants like polychlorinated biphenyls (PCBs) and pesticides, even though commercial fishing in these waters is banned. The presence of environmental contaminants from certain areas can cause long term health effects if fish and shellfish from these areas are consumed. Repeated exposure to these chemicals over time may affect reproduction, growth and development in children, and may increase lifetime cancer risks. Recreational and subsistence fisherman, pregnant women, and children who eat large amounts of sport caught fish from contaminated waters are at greatest risk.

The FDA sets action and tolerance levels for chemicals that are suspected to pose a potential health threat. These levels are intended to protect consumers from overexposure to food borne chemical hazards. Federal and state government agencies monitor contaminant levels in fish and shellfish. Overall, freshwater fish species have been found to contain higher levels of contaminants than saltwater fish. When levels exceed tolerance or action levels, contaminated bodies of water are closed to commercial fishing. When contaminant levels exceed the tolerance or action limits in recreational fish, state health authorities issue fish consumption advisories to inform anglers and high risk individuals to limit their consumption of certain types of fish or fish of a particular size from specific bodies of water. These advisories may be distributed with fishing licenses in some states or can be found on the Website of the state health authority. The U.S. Environmental Protection Agency has a Website with links to each state's fish consumption advisories. [Click here to view this site](#) [2].

Natural Toxins

Toxins are sometimes produced in the marine environment. These toxins are usually associated with certain kinds of fish or shellfish that come from specific geographical areas. Unlike bacteria, most toxins are not destroyed by cooking, so potential risks can best be managed by exercising caution when eating recreational fish or shellfish from unfamiliar waters.

Ciguatera toxin which is produced by certain types of marine algae can accumulate in some tropical saltwater reef fish. Ciguatera poisoning can occur when fish containing this toxin are eaten. Marine or saltwater recreational fishermen in tropical climates who aren't familiar with local fishing areas are more likely to encounter toxic fish.

Algae blooms can also produce several types of shellfish toxins. One of the most common and familiar type of algae blooms create a condition known as "red tide". Shellfish harvesting waters are regularly monitored and tested for the algae that produce these toxins, and affected waters are closed to shellfish harvesting when blooms occur. Individuals who harvest their own shellfish should check with local authorities and heed all warnings and shellfish harvesting restrictions.

Another type of toxin, called scombrototoxin, is caused by improper fish handling rather than naturally occurring marine algae. Scombrototoxin is produced when certain species of saltwater fish like tuna, mackerel,

bluefish, mahi-mahi, and amberjacks begin to spoil. When these fish are exposed to temperatures that allow rapid bacterial growth, histamine is formed which can cause an allergic-type reaction when the fish is eaten. This toxin is not destroyed by cooking, but it can be prevented by properly handling and cooling these types of fish. This toxin can be rapidly produced when fish are allowed to remain in warm water or on the deck of a fishing boat or dock for several hours in warm weather. Recreational fisherman should plan ahead and have plenty of ice available to get these fish as cold as possible as soon as they are taken out of the water and keep them cold until they are safely stored in the home refrigerator.

Tips to Manage Risks That Could be Associated with Recreational Fish or Shellfish

The following guidelines can help recreational anglers and the people who eat these fish manage potential safety risks:

Before you go fishing, check to see if there are any health advisories for the body of water or type of fish or shellfish that you intend to catch. Advisories are available from local or state health departments, fisheries agencies, or you can check the [EPA Website](#). [2]

In general, to minimize risks associated with chemical contaminants or toxins do not eat excessive amounts of any single type of fish or shellfish from contaminated waters and do not eat the internal organs of fish, the tomalley of lobsters, or the mustard in crabs. These organs can contain significantly higher amounts of contaminants or toxins.

Individuals at greater risk for exposure to chemical contaminants, including pregnant women, women of child bearing age, and children under age 15, should take special care to avoid species known to have elevated levels of contaminants.

If you choose to eat sport fish that may contain elevated levels of chemical contaminants, trim away fatty areas like the skin and belly area, and use cooking methods like baking or broiling that allow fats and juices to drain away.

Plan ahead to keep the fish that you catch cold. Bring enough ice to completely surround the fish and a cooler to keep the ice from melting so that the fish will stay cold.

Use clean drinkable water when rinsing or cleaning your catch and keep all cutting boards, knives and other equipment clean.

Resources for Health Educators and Consumers

U.S. Environmental Protection Agency Fish Advisories Website. This resource provides background information on fish advisories and the risks of chemical contaminants in sport caught fish. It includes a direct link to sport fish consumption advisories issued by state, tribal or provincial authorities. [Click here to visit this site](#). [3]

U.S. Environmental Protection Agency Consumer Brochure - Should I Eat the Fish I Catch? This two page brochure appropriate for distribution to anglers and high risk groups describes how to determine what fish to eat and includes tips to reduce risk. This brochure is available in English, Spanish, Hmong, Korean and Vietnamese. [Click here to visit this site](#) [4].

New York Sea Grant - Handling Your Catch: A Guide for Saltwater Anglers. This 48 page booklet by NY Sea Grant and Cornell University Seafood Technology Specialist Ken Gall describes how to handle, store, transport and prepare saltwater fish to maximize quality and safety. It includes numerous illustrations and examples. [Click here to view this publication](#) [5].

National Sea Grant Program and NOAA - Ice Your Fish: Scombrototoxin Prevention Website. This site provides information on which fish are susceptible to develop scombrototoxin and how to ice and handle fish properly to prevent it. [Click here to visit this site](#) [6].

Adapted from: Seafood Savvy by Ken Gall, New York Sea Grant and Cornell University



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Links

- [1] <https://www.seafoodhealthfacts.org/seafood-safety/general-information-healthcare-professionals/seafood-safety-issues-specific-2>
- [2] <http://www.epa.gov/waterscience/fish/states.htm>
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