



SAFE EATING GUIDELINES for fish and shellfish from the Central and South Delta and the San Joaquin River

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Why has OEHHA developed “Safe Eating Guidelines” for fish from the Central and South Delta and the San Joaquin River?

Studies of mercury levels in fish and shellfish from water bodies in the San Joaquin Valley have shown that many fish and shellfish from this area are low in mercury and can be eaten often as part of a healthy diet. A few fish species, including bass, contain higher mercury levels and in some cases, should not be eaten. These findings are the result of the Fish Mercury Project, a large study funded by the California Bay-Delta Authority, which in 2005–2007 tested fish from Central Valley water bodies for mercury. Other fish studies were conducted in past years by the State Water Resources Control Board, the CALFED Mercury Project, and the University of California, Davis.

The Office of Environmental Health Hazard Assessment (OEHHA) is responsible for providing fish consumption guidelines for sport fish in California.

OEHHA used the studies above to evaluate the health effects of eating fish and shellfish from this area. OEHHA issued a draft report with safe eating guidelines for each of two large regions in the San Joaquin Valley in Contra Costa, San Joaquin, Stanislaus, Merced, Madera, and Fresno counties:

- The “**Central and South Delta**,” including the San Joaquin River from the Sacramento River to the Port of Stockton; and all other rivers, sloughs, and flooded tracts in the Delta, south of Highway 12
- The **San Joaquin River** from Friant Dam (near Fresno) to the Port of Stockton



The guidelines are now being updated to add fish species that move between the ocean, estuaries, rivers, and streams, and can be caught in the Delta or the San Joaquin River. Safe eating guidelines provide information to fish consumers to help them choose the safest fish to eat. The guidelines also recommend how often these fish can be eaten for the greatest health benefits and minimum risk to health. The safe eating guidelines identify fish and shellfish containing low levels of mercury and those with high levels of beneficial fats called “omega-3s.” OEHHA recommends that you choose these fish to eat, and avoid eating fish that are high in mercury or other chemicals.

One set of guidelines applies to women of childbearing age (18–45 years) and children 1–17 years, who are particularly sensitive to methylmercury (the most prevalent form of mercury in fish). A second set applies to women over 45 years and men.

Why are mercury levels higher in some fish than in others?

Some of the major sources of mercury in the environment are volcanoes and coal-burning power plants, which discharge mercury into the air. Mercury in air can be carried worldwide before being deposited into oceans, lakes, and other water bodies. Runoff from old mercury mines or gold mining regions (where mercury was used in the gold recovery process) also releases mercury into waterways. Mercury accumulates in the bottom sediments of water bodies, where bacteria change mercury into a more toxic form known as “methylmercury” that fish take in from their diet. Methylmercury can build up in fish to levels that are many thousands of times greater than mercury levels in the surrounding water.

Fish from some areas may have higher mercury levels than fish from other locations. Also, fish that mostly eat other fish, such as bass, tend to have the highest mercury levels. Other types of fish, such as trout and sunfish, feed more on insects and other small aquatic animals in the water, and tend to have lower mercury levels. In the Central and South Delta and the San Joaquin River, sunfish, including bluegill, had some of the lowest mercury levels. Fish that swim between the ocean and rivers, including shad, salmon, and steelhead trout, that are high in omega-3s, also have relatively low levels of mercury. Larger, older fish of a species usually accumulate higher levels of mercury than smaller fish from the same species and water body. For this reason, it is better to eat smaller fish of a species, provided they are legal size.

Many lakes in northern California have advisories for fish with high mercury levels. Many fish species from the Central and South Delta and the San Joaquin River, however, were found to be low in mercury and are therefore recommended for more frequent consumption. See OEHHA’s Safe Eating Guidelines for more information on which types of fish can be eaten frequently and which fish to avoid.

Many types of fish from the Central and South Delta and the San Joaquin River are low in mercury.

Why should fish be eaten if they might contain mercury or other chemical contaminants?

Fish are a nutritious source of protein and heart-healthy fats. That is why the American Heart Association recommends that healthy adults eat at least two servings of fish each week. To benefit most from fish consumption and avoid health risks from contaminated fish, it is important to eat fish that are low in contaminants and high in “omega-3s.”

You can continue to enjoy eating many fish and shellfish from the Central and South Delta and San Joaquin River, and the Safe Eating Guidelines can help you make informed choices.

What are the human health effects from eating fish with methylmercury?

Methylmercury can affect your health if you are exposed to excessive amounts over time. Developing fetuses and children are especially sensitive to methylmercury. Pregnant women can pass methylmercury to their babies through the placenta. Too much methylmercury can affect the nervous system in children, leading to subtle decreases in learning ability, language skills, attention, and memory. These effects may occur through adolescence as the nervous system continues to develop. For these reasons, a more conservative set of fish consumption guidelines applies to women 18–45 years and children 1–17 years.

Women 18–45 years and children ages 1–17 should carefully follow guidelines for eating fish.

In adults, the most subtle symptoms of methylmercury toxicity are numbness and tingling sensations in the hands and feet or around the mouth. The levels of methylmercury found in fish from the Central and South Delta and the San Joaquin River should not result in the health effects described above if the guidelines are followed.

Do fish from stores and restaurants contain methylmercury?

Most ocean and freshwater fish contain some level of mercury, so consider your total fish consumption when making choices about how much and which types of fish to eat. The federal government advises women of childbearing age and children not to eat shark, swordfish, king mackerel, or tilefish, because these ocean species tend to have very high mercury levels. They also say that women of childbearing age and children can safely eat up to two servings a week of a variety of other commercial fish, but only if they do not eat sport fish from local water bodies in the same time period.

What about fish caught from other nearby locations?

The Fish Mercury Project also studied the Sacramento River and Northern Delta; safe eating guidelines were developed for fish from water bodies in that area. There are also advisories in place for fish and shellfish from the Lower Cosumnes and Lower Mokelumne Rivers. You can use OEHHA's contact information and web site provided in this fact sheet to get more information.

Are there other chemical contaminants in these fish?

Some of the fish that swim between the ocean and rivers, including striped bass and sturgeon, have both mercury and PCBs. PCBs are a man-made chemical that might cause cancer, and were also found in fish from the Port of Stockton. OEHHA recommends that no one eat fish or shellfish where signs are posted for the Port of Stockton.

Where can I get more information?

For information on mercury and other contaminants in sport fish in California, or to submit comments, contact:

Office of Environmental Health Hazard Assessment (OEHHA)
1515 Clay Street, 16th Floor
Oakland, California 94612
Telephone (510) 622-3170 FAX (510) 622-3218
Or visit the OEHHA Web site at: <http://www.oehha.ca.gov> (Click on "Fish")

For information on mercury in commercial fish, contact:

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
1 (888) SAFEFOOD

Or visit the U.S. EPA website at
http://water.epa.gov/scitech/swguidance/fishshellfish/outreach/advice_index.cfm

For information on the Fish Mercury Project, visit: <http://www.sfei.org/cmrfishmercury/>