

FISH CONSUMPTION ADVISORY

East Texas Lakes

The Texas Department of Health recommends that people limit consumption of three species of fish from several lakes in East Texas because of the presence of mercury in fish tissue.

Mercury is a naturally occurring element that can be toxic to humans when taken into the body. Small amounts of mercury in water or sediment can, under certain conditions, accumulate to levels in fish tissue that can have harmful effects on humans. While mercury can have health effects on all people, the population at greatest risk is developing fetuses.

Concern about mercury contamination in fish from East Texas lakes stemmed from recent discoveries of mercury in fish in Louisiana, Arkansas, and other southeastern states. Studies in these states indicated that acidic water and high organic matter were common conditions found in the lakes and rivers where mercury was found in the fish. The conditions throughout East Texas are very similar to those conditions found in the other states. The Texas Department of Health, Texas Commission on Environmental Quality (formerly the Texas Natural Resource Conservation Commission), and the Texas Parks and Wildlife Department jointly collected samples from several East Texas lakes. The initial screening study found elevated levels of mercury in largemouth bass and freshwater drum from Caddo Lake and a fish consumption advisory for that lake was issued. Results of follow-up sampling indicated that elevated levels of mercury are also found in largemouth bass and freshwater drum from Toledo Bend, Sam Rayburn, and Steinhagen Reservoirs. White Bass from Steinhagen Reservoir were also found to have elevated mercury levels. The outcome of this sampling and risk assessment is an expansion of the consumption advisory to include the additional areas and modification of the original advisory to make it more easily understood. The current consumption advisory recommends that people eat not more than two meals each month of largemouth bass or freshwater drum from Caddo Lake including Big Cypress Creek, Toledo Bend, Sam Rayburn, and Steinhagen Reservoirs. The largemouth bass or freshwater drum consumption is two meals each month from any-and-all of the lakes, not two from each lake. Each meal should not exceed eight ounces of fish for adults or four ounces for children. Additionally, people should not eat more than one meal each month of white bass or hybrid white/striped bass from Steinhagen Reservoir.

Limiting consumption to the recommended amounts will protect both the total population and the most sensitive group, the developing fetuses. People can safely enjoy consumption of other species of fish such as catfish or crappie. They can also continue to catch bass recreationally, but should limit consumption to the amounts recommended. Other water related activities such as swimming, water skiing, or boating do not pose any health hazards from mercury, drinking the water from these areas after normal treatment is not a concern. Eating fish identified in the advisory at levels above those recommended is the only activity of concern for mercury poisoning.

QUESTIONS AND ANSWERS ASSOCIATED WITH CONSUMPTION OF MERCURY CONTAMINATED FISH

What is mercury?

Answer: Mercury is an element that occurs naturally in the environment in several forms. In the elemental form, mercury is a shiny silver-white liquid. Mercury can combine with other elements such as chlorine, carbon, or oxygen to form mercury compounds. These compounds are called inorganic mercury if they contain carbon and organic mercury if they do not. All forms of mercury are poisonous. The type of mercury found in fish is in the organic form and is called methylmercury.

How does mercury enter the environment?

Answer: Mercury is found throughout the environment as a result of normal breakdown of the earth's crust by wind and water. Air, water, and soil can contain mercury both from natural sources and from human activity. Inorganic mercury can enter the air from deposits of ore that contain mercury, from the burning of fuels or garbage, and from the emissions of factories that use mercury. Mercury released to the air can be carried for long distances.

How does mercury get into fish?

Answer: Mercury in water settles to the bottom where it mixes with the sediment. Here it can be changed into an organic form called methylmercury and enter the food chain. Small aquatic plants and animals can absorb the methylmercury in the sediment. Small fish eat these plants and tiny animals and larger fish eat smaller fish. At each step, the concentration of mercury increases. Higher amounts of methylmercury are generally found in older fish and predatory fish.

What is the source of mercury in the fish in East Texas?

Answer: The source is unknown at this time. However, it is important to note that the source may not be as important as the physical and chemical properties of the lakes. Large amounts of organic material and acidic or low pH water are conditions that make mercury available to biological life. Once the mercury becomes available, it is magnified upward through the food chain. Small fish pick up the mercury. Many small fish are eaten by larger fish, and in turn the large fish are eaten by even larger fish. The upper levels of the food chain, the largest fish, have the highest levels of mercury.

How can mercury affect my health?

Answer: Methylmercury can harm the brain and nervous system of adults and children. Young children are particularly sensitive to mercury because their bodies are still developing. The brain and nervous system in a developing fetus can be permanently damaged if the mother eats food containing high enough levels of mercury. In young children exposed prenatally to low levels, reported symptoms have included developmental effects such as late walking (>18 months) or late talking (>24 months). Exposure to higher levels may result in abnormalities of the central nervous system, retardation, or seizures. Some children may experience a type of allergic reaction to mercury, with symptoms such as discoloration and itching of hands and feet, insomnia, and sensitiveness to light. Adults exposed to increasing levels of methylmercury may progressively experience nervous system disorders including tingling of the fingers and toes, irritability, memory loss, depression, insomnia, difficulty in walking or speech, visual changes, or hearing defects.

How can methylmercury enter and leave my body?

Answer: Organic mercury in fish or other foods that you might eat enters your bloodstream easily and goes rapidly to other parts of your body, including the brain. Organic mercury that is ingested is eliminated from the body through the feces. The half-life for elimination of mercury is approximately one to two months. Mercury may be found in hair or blood samples. Since there is no placental barrier to mercury, the fetus is at increased risk for methylmercury poisoning.

Can I be tested to see if I have mercury in my body?

Answer: Blood or hair samples can be taken in your doctor's office and tested in the laboratory. The amount of mercury that is found may be used to predict the potential for adverse health effects. Blood tests are useful during and shortly after mercury poisoning. Once mercury is in the hair, it remains until the hair is cut.

Are all fish in East Texas lakes equally affected?

Answer: No. The Texas Department of Health collected and analyzed over 200 legal size fish representing 15 different species from Caddo Lake, Cypress Creek, Toledo Bend, Sam Rayburn, and Steinhagen Reservoirs in East Texas. Of these fish, largemouth bass and freshwater drum were consistently shown to contain elevated levels of mercury. The average level of mercury in the other 13 species of fish was relatively low, with catfish, crappie, and carp containing the lowest levels of mercury. In general, smaller, younger fish contain lower levels of mercury than older fish; and predatory fish contain higher levels of mercury than non-predatory fish.

What recommendation has the Texas Department of Health made to protect human health?

Answer: A consumption limit of two meals per month of largemouth bass and freshwater drum has been recommended. This limit means that a person could eat a total of two meals per month of these species from one lake or combined from all of the affected lakes. Additionally, a person should not eat more than one meal per month of white bass or hybrid white/striped bass from Steinhagen Reservoir. This recommendation protects infants who may be exposed before birth or adults who may be consuming those species which were shown to contain the highest levels of mercury. No limitations were recommended for other species.

I have been eating these fish all my life. Will I have adverse health effects?

Answer: The recommended consumption limits made by the Texas Department of Health have allowed a margin of safety below those levels that could result in adverse health effects; however, eating more than the recommended amount of largemouth bass and freshwater drum from East Texas lakes does not necessarily mean that a person will have adverse health effects.

Should I stop eating fish?

Answer: No. Fish are an important source of protein in the diet. The Texas Department of Health only recommends that you limit consumption of those species which contain the highest levels of mercury (largemouth bass and freshwater drum).

Why is it safe to eat catfish and not bass?

Answer: Different species eat different types of food. Mercury levels will be higher in species that are predators and eat smaller fish.

How can I reduce the amount of mercury that I get from fish?

Answer: In general, when you have a choice you should eat smaller fish and eat fish other than bass and drum.

Will cooking or cleaning fish a certain way reduce the mercury level and make the fish safe to eat?

Answer: No. Mercury levels are not affected by cooking, and since the mercury is in the muscle tissue, which is the portion of the fish we eat, cleaning or filleting will not make the fish safe.

I live on a lake in the Piney Woods of East Texas that is not listed in your advisory. I am worried about mercury in the fish in my lake. What should I do?

Answer: If you are eating fish from a lake we have not sampled, but which fits in the category or type of lake we have sampled (acidic water and high organic material) and you are concerned, you should follow the consumption recommendations we have provided in the advisory for the other lakes. These recommendations would be protective if the levels of mercury in fish from your lake are similar to the ones we have sampled. Choosing smaller fish and fish of other species as indicated above will also reduce any risk that exists. Generally, smaller fish have lower levels of contaminants.

Will additional sampling be conducted?

Answer: Yes. Additional samples will be collected and the advisory will be modified if the data indicates a change is appropriate.

Should we stop fishing for bass and freshwater drum?

Answer: No. Recreational fishing for these species does not need to stop. Catching and releasing larger fish or consuming smaller legal fish in amounts below those recommended by the Texas Department of Health poses no health risk from mercury poisoning.