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## **FREQUENTLY ASKED QUESTIONS ABOUT POLYCHLORINATED BIPHENYLS (PCBs) AND MERCURY FISH CONSUMPTION ADVISORIES IN VIRGINIA WATERS**

### **What is a fish consumption advisory?**

A fish consumption advisory is a public health alert that provides recommendations on safe fish consumption when contaminants are detected in fish tissues in Virginia waterways. The Virginia Department of Health (VDH) issues advisories based on data from fish tissues collected by the Virginia Department of Environmental Quality (DEQ). When the amount of contaminants detected exceeds the levels of concern established by VDH, a fish consumption advisory is issued. These advisories are not for commercial fish sold in markets. The Food and Drug Administration sets and enforces the standards for contaminants in fish that are sold commercially. Contaminants that may result in a fish consumption advisory include mercury, polybrominated diphenyl ethers (PBDEs), polychlorinated biphenyls (PCBs), and Kepone. Most fish advisories in Virginia result from either mercury or PCB contamination of fish tissue.

### **What are PCBs and mercury and how might I be exposed?**

#### *PCBs*

PCBs are a mixture of synthetic chlorinated chemicals used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they are good insulators and do not burn easily. PCBs enter the environment from leaking transformers, industrial sites, and improper disposal. PCBs remain in the environment because they are very stable and do not degrade easily.

#### *Mercury*

Mercury can exist in three forms: elemental (metallic) mercury, methylmercury, and other mercury compounds (inorganic and organic). Metallic mercury has a shiny silver-white appearance. Mercury can combine with other elements to form salts. Mercury that is found in the organic form in soil and sediments in waterways is referred to as methylmercury. Mercury can be released into the environment from a number of sources, including burning coal, municipal waste incinerators, manufacturing plants, and mining ore deposits.

You may be exposed to PCBs and mercury if you eat fish from a waterway where there is a fish consumption advisory. Fish are exposed to PCBs and methylmercury when they feed on tiny aquatic plants and animals at the bottom of contaminated waterways. PCBs and methylmercury remain in fish

tissues. When big fish eat little fish, they accumulate all the PCBs and methylmercury that have been eaten by every living resource below them in the food chain.

### **How can PCBs and mercury affect my health?**

The nature and extent of health effects from exposure to PCBs or mercury depends on the amount to which a person is exposed and the duration of the exposure. PCBs and methylmercury are of particular concern because they can build up in fish tissue to levels that are many times greater than levels in the surrounding water.

#### *PCBs*

The Environmental Protection Agency (EPA) has determined long-term exposure to PCBs may increase the risk of cancer. Individuals exposed to large amounts of PCBs may develop skin conditions such as acne or rashes. In animal studies, PCBs have been shown to damage the liver, stomach, thyroid gland, and cause changes in the immune system, cause behavioral alterations, and impair reproduction.

#### *Mercury*

The nervous system is sensitive to all forms of mercury. Methylmercury is very toxic because mercury in this form readily reaches the brain. Exposure to high levels of metallic, inorganic, or methylmercury can permanently damage the brain, kidneys, and developing fetus.

### **How does PCB or mercury exposure affect children?**

Infants and children, because their nervous systems are still developing, are particularly sensitive to the effects of PCBs and mercury.. Babies may develop neurobehavioral and compromised immune systems if exposed to PCBs during pregnancy or while breastfeeding. Exposure to mercury during pregnancy may result in several harmful effects to the fetus, including brain damage, mental retardation, incoordination, blindness, seizures, and inability to speak. Children exposed to elevated levels of mercury may develop problems of their nervous and digestive systems, and kidney damage.

Pregnant women, woman planning to become pregnant, nursing mothers, infants, and young children should avoid eating PCB and mercury contaminated fish from the advisory areas.

### **Is there a medical test to show whether I have been exposed to PCBs?**

#### *PCBs*

Tests are available to determine if PCBs are in your blood, body fat, or breast milk. These tests are not routinely performed and do not predict whether you will experience harmful health effects. Nearly everyone has been exposed to PCBs because these chemicals are found throughout the environment, and nearly all persons are likely to have detectable amounts of PCBs in their blood or body fat.

## *Mercury*

Routine urine and blood tests are available in a doctor's office or health clinic to test for exposure to mercury. A urine test can be performed to test for exposure to metallic and inorganic forms of mercury. Methylmercury can be measured in blood or hair. A combination of blood, urine, and hair may be used to measure exposure to different forms of mercury.

### **I have been eating fish from the advisory area all my life. Will I have adverse health effects?**

There are no immediate threats to health from eating fish from the advisory area. Eating more than the recommended amount of fish does not mean that a person will have adverse health effects. Recommendations regarding fish consumption are not a measure of threat to health. Instead, they reflect an assessment of the estimated health risk if fish from the same area are consumed frequently over a period of several years.

### **What can be done to reduce my risk of being exposed to PCBs and mercury in fish?**

Remove the skin, fat (from the belly and top of the fish) and internal organs where PCBs are most likely to accumulate before cooking the fish. Cook the fish by broiling, baking, or grilling so that the fat drains away. Discard the fats that cook out of the fish. Eat smaller, younger fish (within the legal limits). They are less likely to contain harmful levels of PCBs and mercury than larger, older fish. Eat less deep-fried fish since frying seals PCBs into the fatty tissue.

### **Is it safe to swim in waters where a fish advisory is posted?**

Yes. In general, the level of contaminants in fish is several folds higher than what is found in the water. Therefore, recreational use of waters such as swimming, skiing, and boating, is not impacted by fish consumption advisories.

### **Is it safe to eat fish species that have not been mentioned in the advisory?**

DEQ tests for contaminants in various representative fish species, such as sportfish and bottom-feeding fish, from a variety of sampling locations in state waters. VDH issues advisories for those fish species that are found to be contaminated above the level of concern for human health. Fish species that do not exceed the level of concern are generally safe to eat. However, people may take precautions to limit consumption of similar species of fish from the locations where advisories have been issued.

**Whom should I contact to get more information on fish consumption advisories?**

For further information regarding fish consumption advisories, please contact the Virginia Department of Health, Division of Environmental Epidemiology, 109 Governor Street, Richmond, Virginia, 23219, or call (804) 864-8182.

For a current list of VDH fish consumption advisories, please visit the Virginia Department of Health's Division of Environmental Epidemiology Fish Consumption [Webpage](#).

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