

PCBS IN FISH: A FACTSHEET

Kentucky Division of Water

What are PCBs?

PCBs (polychlorinated biphenyls) are a group of manmade chemicals that were widely used by many different industries from about 1929 until they were banned for most uses in 1979. PCBs range from oily liquids to waxy solids and mix easily with most solvents and oils. Because they resist heat so well, PCBs were used in electrical equipment such as transformers, capacitors and heat transfer, and hydraulic systems. They were also used in paints, adhesives, caulking compounds, printing inks and fire retardants. Manufacture of PCBs stopped in the United States in 1977 because of evidence that PCBs build up in the environment and cause harmful effects.

Why are PCBs a problem?

PCBs remain in the environment for a very long time. They accumulate in stream sediments, soil, plants, fish, birds, and mammals. Burrowing animals eating silt in sediment become contaminated with PCBs and are eaten by small fish, which are consumed by larger fish. PCBs become more concentrated as they move up the food chain from the simplest organism to humans at the top. Getting rid of PCBs in the body is difficult because they have to be chemically converted by the liver into a water soluble chemical the body can excrete. When PCB contaminated materials are taken in faster than they are eliminated, they build up in fat tissue. In humans, PCB buildup can cause skin lesions, swollen limbs, eye and liver problems and possibly cancer and birth defects.



How do PCBs get into fish?

PCBs bind especially well with clay-silt sediment, soils, and the fat tissue of living creatures. Usually they stick to soil or sediments and may remain there for years, but they also are found in the air, water, and food. PCBs enter the bodies of fish from water, sediment, and from eating prey that have PCBs in their bodies. PCBs build up in fish and can reach levels hundreds of thousands of times higher than the levels in water. Larger, older fish will have had more time to accumulate more PCBs in their fat tissue. Humans become exposed to PCBs by eating these fish.

Fish Consumption Awareness

The Kentucky departments for Environmental Protection, Health Services and Fish and Wildlife Resources jointly issue a fish consumption advisory to the public when fish are found contaminated. An advisory cautions people about potential health problems that may result from eating fish caught from a particular area.

Who should avoid eating fish suspected of PCB contamination?

Fish is a good source of protein and is low in saturated fats. Most adults are not overtly affected by exposure to low levels of PCBs. However, some people should not eat any fish suspected of containing PCBs, including pregnant women and those planning to become pregnant, preschool-age children and persons with known exposures to PCBs.

Suggestions for people who choose to eat fish:

Cooking fish does not destroy PCBs or lower their toxicity. The heat from cooking simply melts some of the fat in the fish, removing pollutants at the same time. The following precautions will lessen the risk of exposure to PCBs when consuming fish:

- Do not eat fish eggs
- Broil, grill, or bake fillets instead of frying or microwaving
- Do not eat any of the juices or fats that cook out of the fish and do not use them for cooking other food.