

Anniston Community
Health Survey (ACHS)
**Frequently Asked
Questions**



**U.S. Department of
Health and Human Services**
Agency for Toxic Substances
and Disease Registry

What are polychlorinated biphenyls (PCBs)?

- Polychlorinated biphenyls are man-made mixtures of up to 209 individual chlorinated compounds (known as congeners). There are no known natural sources of PCBs. PCBs are either oily liquids or solids that are colorless to light yellow. Some PCBs can exist as a vapor in air. PCBs have no known smell or taste. Many commercial PCB mixtures are known in the U.S. by the trade name Aroclor.
- PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was stopped in the U.S. in 1977 because of evidence they build up in the environment and can cause harmful health effects. Products made before 1977 that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.



What are PCB congeners?

- PCBs are mixtures of up to 209 individual chlorinated compounds, also called congeners.
- Different congeners have different potential impacts on the body and on health, so they are studied separately or in groups of similar congeners.



What is a normal level of PCBs?

- The EPA has set a limit of 0.0005 milligrams of PCBs per liter of drinking water (0.0005 mg/L). ATSDR's Minimal Risk Level (MRL) for chronic-duration oral exposure (greater than one year) to PCBs is 0.02 micrograms per kilogram per day (ug/kg/day). The MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without increased risk of adverse non-cancer health effects over a specified duration of exposure.
- Discharges, spills, or accidental releases of 1 pound or more of PCBs into the environment must be reported to the Environmental Protection Agency (EPA). The Food and Drug Administration (FDA) requires that infant foods, eggs, milk and other dairy products, fish and shellfish, poultry, and red meat contain no more than 0.2-3 parts of PCBs per million parts (0.2-3 ppm) in food. Many states have established fish and wildlife consumption advisories for PCBs.

Do PCBs cause cancer?

- There are a few studies of workers indicate that PCBs are associated with certain kinds of cancer in humans, such as cancer of the liver and biliary tract. Rats that ate food containing high levels of PCBs for two years developed liver cancer. The Department of Health and Human Services (DHHS) concluded that PCBs may reasonably be anticipated to be carcinogens (cause cancer). PCBs have been classified as probably carcinogenic (causing cancer), and carcinogenic to humans (group 1) by the Environmental Protection Agency (EPA) and International Agency for Research on Cancer (IARC), respectively.

What does **half-life** mean?

- The amount of time it takes for a substance or chemical (in the body) to decrease its concentration by half. Knowing this value can help researchers understand lifetime exposures and how much of a substance used to be present.

What happens to **PCBs** when they enter the environment?

- PCBs enter the air, water, and soil during their manufacture, use, and disposal; from accidental spills and leaks during their transport; and from leaks or fires in products containing PCBs.
- PCBs can still be released to the environment from hazardous waste sites; illegal or improper disposal of industrial wastes and consumer products; leaks from old electrical transformers containing PCBs; and burning of some waste products in incinerators.
- PCBs do not readily break down in the environment, and they may remain there for very long periods of time. PCBs can travel long distances in the air and be deposited in areas far away from where they were released. In water, a small amount of PCBs may remain dissolved, but most stick to organic particles and bottom sediments. PCBs also bind strongly to soil.
- PCBs are absorbed by small organisms and fish in water. They then enter the bodies of other animals that eat these aquatic animals as food. PCBs accumulate (build up) in fish and marine mammals, reaching levels that may be many thousands of times higher than in water.



How did the PCBs get in the fish in the lakes in Anniston?

- Anniston is one of many communities all over the world with fish in lakes contaminated with PCBs. PCBs enter the air, water, and soil during their manufacture, use, and disposal. They can also enter a water system from accidental spills and leaks during their transport and from leaks or fires in products containing PCBs.
- PCBs can be released into the environment from hazardous waste sites, illegal or improper disposal of industrial wastes and consumer products, leaks from old electrical transformers containing PCBs, and/or burning of some wastes in incinerators.
- In water, a small amount of PCBs may dissolve, but most stick to particles and bottom sediments. PCBs also bind strongly to soil and are eaten by fish in the water. PCBs accumulate in fish and marine mammals, reaching levels that may be many thousands of times higher than in water. PCBs do not break down quickly in the environment and may remain there for decades. PCBs can travel long distances in the air and be deposited in areas far away from where they were released into the environment, such as in the Arctic. As a consequence, PCBs can be found all over the world.

How can PCBs get into my blood/body?

- Using old fluorescent lighting fixtures and electrical devices and appliances, such as television sets and refrigerators that were made 30 or more years ago. These items may leak small amounts of PCBs into the air when they get hot during operation, and could be a source of skin exposure.
- Eating contaminated food. This is the main source of exposure to PCBs. Dietary sources of PCBs are fish (especially sportfish caught in contaminated lakes or rivers), meat, and dairy products.
- Breathing air near hazardous waste sites and drinking contaminated well water. Small amounts of PCBs may be present near hazardous waste sites; however, the landfills in Anniston are now closed and covered and are an unlikely source of PCBs.
- In the workplace during repair and maintenance of PCB transformers; accidents, fires or spills involving transformers, fluorescent lights, and other old electrical devices; and disposal of PCB materials.



How can PCBs affect my health?

- The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. PCB exposures in the general population are not likely to result in skin and liver effects. Most of the studies of health effects of PCBs in the general population examined children of mothers who were exposed to PCBs.

If I was pregnant when exposed, could I pass the PCBs to my unborn baby? Can PCBs be passed via breast milk?

- Children can be exposed to PCBs both prenatally (before they are born) and from breast milk. PCBs are stored in the mother's body and can be released during pregnancy, cross the placenta, and enter fetal tissues. Because PCBs dissolve readily in fat, they can accumulate in breast milk fat and be transferred to babies and young children. PCBs have been measured in umbilical cord blood and in breast milk. Some studies have estimated that an infant who is breast fed for 6 months may accumulate in this period 6-12% of the total PCBs that will accumulate during its lifetime. However, in most cases, the benefits of breast-feeding outweigh any risks from exposure to PCBs in mother's milk. You should consult your health care provider if you have any concerns about PCBs and breast feeding.

How do PCBs affect children's health?

- In one study, women who were exposed to high levels of PCBs in the workplace or ate large amounts of fish contaminated with PCBs had babies that weighed slightly less than babies from women who did not have these exposures. Babies born to women who ate PCB-contaminated fish also showed abnormal responses in tests of infant behavior. Some of these behaviors, such as problems with motor skills and a decrease in short-term memory, lasted for several years. Other studies suggest that the immune system was affected in children born to and nursed by mothers exposed to increased levels of PCBs. There are no reports of birth defects caused by exposure to PCBs or of health effects of PCBs in older children. The most likely way infants will be exposed to PCBs is from breast milk. Transfers of PCBs across the placental barrier were also reported. In most cases, the benefits of breast-feeding outweigh any risks from exposure to PCBs in mother's milk.

Why was I selected to be in the study but my neighbor was not? I'm not sick, but they are.

- You were one of 1,100 persons randomly selected to take part in the first part of the study in 2005-2007. We did not choose people to take part based on their health, because we needed to use a random sample. Because we want to document that the level of PCBs in the blood is decreasing, we repeated the same study in 2014 and tested a new sample of your blood. We compared the PCB lab blood results from the two studies and are working on papers describing those changes. Once published, these results will be shared with the community.





How can you be sure we are no longer being exposed to PCBs? Isn't it still in the air, water, soil and even the local fish?

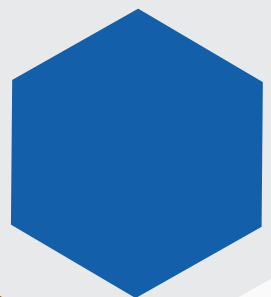
- Small amounts of PCBs can be found in almost all outdoor and indoor air, soil, sediments, surface water, and animals all around the US. However, PCB levels have generally decreased in the US since PCB production stopped in 1977.
- You can reduce your risk of exposure to PCBs through the following actions:
 - » Certain states, Native American tribes, and U.S. territories have issued advisories to warn people about PCB-contaminated fish and fish-eating wildlife. If you learn about these advisories in your area, you can reduce your family's exposure to PCBs by following the directions from these advisories.
 - » Children should be taught not to play with old appliances, electrical equipment, or transformers, since they may contain PCBs.
 - » Children should be discouraged from playing in the dirt near hazardous waste sites and areas where there was a transformer fire.
 - » Children should also be discouraged from eating dirt and putting dirty hands, toys, or other objects in their mouths
 - » They should wash their hands frequently.
 - » If you are exposed to PCBs in the workplace, it is possible to carry them home on your clothes, body, or tools. If this is the case, you should shower and change clothing before leaving work, and your work clothes should be kept separate from other clothes and washed separately.

Is there a medical test to show whether I've been exposed to PCBs? Can I have my blood tested every year for PCBs?

- Tests exist to measure levels of PCBs in your blood, body fat, and breast milk, but these are not done routinely in a regular doctor's office visit. They are very expensive and are not covered by your health insurance. PCB concentrations do not change that much, and measuring those each year is not necessary. Most people normally have low levels of PCBs in their body because nearly everyone has been environmentally exposed to small amounts of PCBs. Your PCB levels can indicate past exposure, but they don't show when or how long you were exposed, or whether you will develop health effects.

I don't understand my PCB results. There's just a lot of numbers on a page. How do I know if I'm getting better?

- Most people are likely to have a small amount of PCBs in their body. Because they are found throughout the environment, nearly everyone has been exposed to PCBs. Within the US Population, recent studies have shown that PCB levels have been decreasing for over two decades.
- If your PCB levels are higher than the background levels, this will show that you have been exposed to higher levels of PCBs. However, these measurements cannot determine the exact amount of each type of PCBs (congeners) that you have been exposed to, or how long you have been exposed.
- Although these tests can indicate whether you have been exposed to PCBs to a greater extent than the general population, they do not predict whether you will develop harmful health effects. Blood tests are the easiest, safest, and probably the best method for detecting recent exposures to large amounts of PCBs.



How long will this study continue?

- There is no plan for future updates of the Anniston Community Health Survey by having the participants follow up or do more medical examinations. Analyses of collected data has been completed, and research papers on study results will continue to be published in the coming years. Summaries of those results will be available on ATSDR's website and distributed periodically in the community through the West Anniston Foundation or County Health Department.

Why won't the ATSDR pay my doctor bills?

- ATSDR is a federal agency that conducts research related to chemical exposures from hazardous waste sites in the environment. ATSDR does not perform or pay for any clinical treatments.

My dog is very sick too; What are the health effects of PCBs on pets? Is there a PCB study for animals?

- Because there are no known studies conducted on pet exposure to PCBs, we do not have any information about the health effects of PCBs on pets.
- Laboratory animals that ate food containing large amounts of PCBs for short periods of time had mild liver damage and some died. Animals that ate smaller amounts of PCBs in food over several weeks or months developed various kinds of health effects, including anemia; acne-like skin conditions; and liver, stomach, and thyroid gland injuries. Other effects of PCBs in animals include changes in the immune system, behavioral alterations, and impaired reproduction. Talk with your pet's veterinarian if you think your pet is ill and needs treatment.



How are the Monsanto owners being held accountable for what happened to my community?

- The manufacture of PCBs was stopped in the U.S. in 1977 because of proof that PCBs can build up in the environment and can cause harmful health effects. There is no proof that any manufacturer of a PCB-contaminated product intended to harm the community or environment. Monsanto have been found responsible for environmental contamination in Anniston and paid for extensive clean up supervised by EPA and offered compensations to over 17,000 plaintiffs in civil lawsuits based on their exposure levels during a set period of time (1997-2003).

My doctor doesn't understand my results either. Can you talk to my doctor?

- Doctors with a background in environmental and occupational medicine are available to speak with your doctor. Please ask your doctor to call us at 1-800-CDC-INFO (800-232-4636), TTY: (888) 232-6348, for more information and reference the Anniston Community Health Survey.

Where can I get more information?

- If you have questions or concerns, please contact your community or state health or environmental quality department or:

Agency for Toxic Substances and Disease Registry
Office of Community Health and Hazard Assessment
4770 Buford Hwy NE, Mailstop S106-5
Chamblee, GA 30341

Phone: 1-800-CDC-INFO · 888-232-6348 (TTY)

Email: CDCINFO@cdc.gov

ATSDR can also tell you the location of occupational and environmental health clinics in your area. These clinics specialize in recognizing, evaluating, and treating illnesses resulting from exposure to hazardous substances.

Pediatric Environmental Health Specialty Units (PEHSU)-East National Office

American Academy of Pediatrics
141 Northwest Point Blvd
Elk Grove Village, IL 60007

<http://www.aap.org>

Tel: (888)227-1785 (Toll Free)

Email: pehsu@aap.org

