

PCBs in School Fluorescent Lights

New Jersey Department of Health & Senior Services (DHSS)

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What are PCBs?

Polychlorinated biphenyls (PCBs) are mixtures of 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. Products that may contain PCBs include old fluorescent lighting fixtures and electrical devices containing PCB capacitors, and old microscope and hydraulic oils.

Why is the DHSS concerned with PCBs in fluorescent lights?

PCBs were used in fluorescent light ballasts due to their insulating properties until they were banned in 1978. Light fixtures containing PCB ballasts were distributed until about 1980. The federal Environmental Protection Agency (EPA) recently released guidance recommending that schools take steps to reduce potential exposures to PCBs from older fluorescent lighting fixtures. This guidance is based on evidence that older ballasts containing PCBs can leak when the ballasts fail, releasing PCBs into the indoor air, resulting in possible exposures to school occupants.

How does a school determine whether PCB-containing light fixtures are present?

The New Jersey Department of Education recommends that school districts survey and inventory all light fixtures in school buildings built before 1979 and develop a plan to replace those fixtures found to contain PCBs in the ballasts. Ballasts that have been replaced should also be inspected to make sure any leaked material has been properly removed.

If a light fixture is found to be leaking PCBs, what is the next step?

If a light ballast is leaking PCBs, federal law requires the immediate removal and disposal of any PCB containing material at an EPA approved facility. To eliminate the potential hazard posed by PCB-containing light ballasts in the most efficient manner, EPA recommends removing all PCB-containing ballasts (whether leaking or not).

Does the DHSS believe there is an immediate threat to public health from PCB-containing light fixtures?

At this time, the DHSS does not feel the presence of PCB-containing light fixtures in schools poses an immediate health threat, however, if elevated levels of PCBs in the air persist over time due to leaking light ballasts, there may be a potential for adverse health effects. Therefore it is necessary for schools to inspect and replace any leaking light fixtures to reduce the potential for exposures to school occupants.

What are the health effects of PCBs? 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.

How likely are PCBs to cause cancer? A few studies of workers indicate that PCBs were associated with liver and biliary tract cancers. The Department of Health and Human Services (DHHS) has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans.

How do PCBs affect children? Pregnant women who were exposed to relatively high levels of PCBs in the workplace or ate large amounts of fish contaminated with PCBs had babies with lower birth weights 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 motor skill problems 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 structural 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. PCBs can also pass through the placenta to the developing fetus.

Is there a medical test to show whether a person has been exposed to PCBs?

Tests exist to measure levels of PCBs in blood, body fat, and breast milk, but these are not routinely conducted. Most people normally have low levels of PCBs in their body because nearly everyone has been environmentally exposed to PCBs. The tests can show if PCB levels are elevated, which would indicate past exposure to above-normal levels of PCBs, but cannot determine when or how long a person was exposed or whether health effects will develop.

Who should people contact with concerns about their health or the health of their children?

People should begin by discussing their concerns with their doctor or their child's pediatrician. There are clinics that specialize in environmental health issues that a physician may want to contact:

For children: Pediatricians can contact the Mt. Sinai Medical Center's Pediatric Environmental Health Specialty Unit at (866) 265-6201.

For adults: The Environmental and Occupational Health Clinical Center in Piscataway, New Jersey sees adults who have been exposed to contaminants occupationally or environmentally. They can be reached at (732) 445-0123.

For general questions: Contact the New Jersey Department of Health and Senior Services, Consumer, Environmental, & Occupational Health Services at 609-826-4920.



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