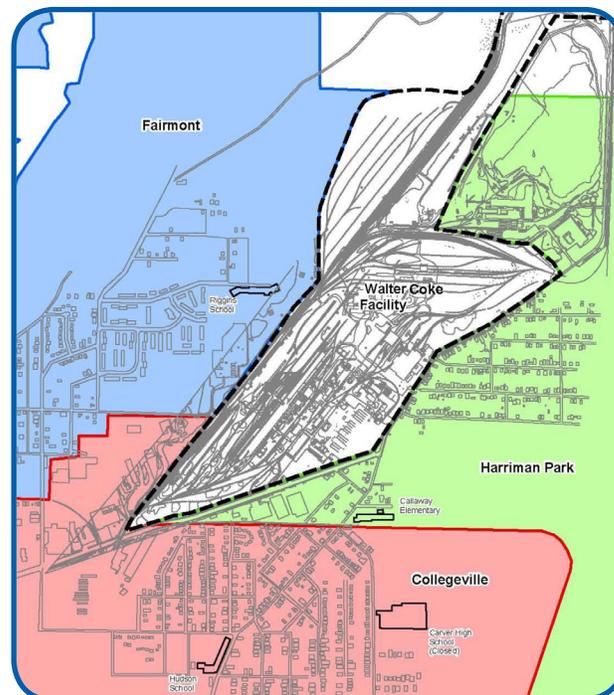


# Possible Health Risks from Exposure to Arsenic and Polycyclic Aromatic Hydrocarbons in Soil

## Collegeville, Fairmont and Harriman Park Residential Soil Results, North Birmingham, Alabama

The Agency for Toxic Substances and Disease Registry (ATSDR) suggests cleaning the properties in the Collegeville, Fairmont and Harriman Park communities that have the highest amount of arsenic and polycyclic aromatic hydrocarbons (sometimes called PAHs) in the soil. These residential properties are now part of the 35th Avenue Superfund Site. Cleaning up these properties will lower exposure to arsenic and polycyclic aromatic hydrocarbons in the soil. ATSDR is evaluating community exposures to contaminants in the air.

This fact sheet tells you how exposure to arsenic and polycyclic aromatic hydrocarbons may affect your health. It also gives you some things you can do to protect your health if you're in areas where arsenic and polycyclic aromatic hydrocarbons have been found in the dirt (soil).



### What are arsenic and polycyclic aromatic hydrocarbons?

Arsenic is an element that occurs naturally in soil and minerals. It may enter the air, water, or land (soil) from windblown dust or from runoff. Arsenic cannot be destroyed in the environment. It can only change its form. Arsenic can combine with other elements in the environment such as oxygen, chlorine, and sulfur to form what are known as inorganic arsenic compounds. Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds.

Polycyclic aromatic hydrocarbons are a group of more than 100 chemicals. Polycyclic aromatic hydrocarbons are formed when organic substances such as coal, oil and gas, garbage, or even tobacco do not burn completely. Polycyclic aromatic hydrocarbons are usually found as a mixture of two or more of these substances. Soot is a good example of this. Polycyclic aromatic hydrocarbons also can be formed when grilling or charbroiling meat.

## How can I be exposed to chemicals in soil in these communities?

Every day and mostly by accident, some people will swallow a little dirt. Because gardeners touch soil more often, they may be exposed to more chemicals in soil. Because children may play in soil and put dirt-covered toys and hands in their mouths, they might be exposed to chemicals in soil more than adults would. In fact, children get about twice as much soil in their bodies from their activities as do adults. Some children even eat dirt on purpose. This is called pica behavior. Pica behavior doesn't happen often, and if it does occur, usually involves only a few instances of eating soil.



## How can I reduce my family's exposure to arsenic and polycyclic aromatic hydrocarbons in soil in these communities?

If the U.S. Environmental Protection Agency told you that arsenic and polycyclic aromatic hydrocarbons are present in your yard at levels of concern, you can protect your health and your children's health by doing the following:

- Wipe your shoes on a doormat or take your shoes off when you come into your house
- Damp mop floors and damp dust counters and furniture often
- Wash and peel all fruits, vegetables, and root crops raised on your property
- Wash pets often
- Wash children's toys often
- Wash children's hands and feet after they have been playing outside
- Do not eat food, chew gum, or smoke when working in the yard



## Are the fruits and vegetables from my garden safe to eat?

ATSDR has no data on arsenic and polycyclic aromatic hydrocarbons levels in fruits and vegetables grown in soil in these communities. Information from other scientific investigations show that most plants do not take up the types of chemicals found in yard soil samples gathered near the site. Plants that do take up small amounts of arsenic or polycyclic aromatic hydrocarbons into their roots do not move much of those contaminants into the parts of the plants that people eat. Based on arsenic and polycyclic aromatic hydrocarbons concentrations measured in soil and the estimated rates of uptake by plants, garden produce from North Birmingham communities should be safe to eat.

However, these additional measures will ensure garden crops are safe to eat:

- Wash and peel any root vegetables before cooking or eating
- Wash all leafy vegetables that grow close to the ground
- Add a little vinegar to the wash water to remove dirt from vegetables

## Is my health at risk?

ATSDR does not expect that exposure to arsenic in soil in this area will make people sick. A possible exception would be if a child ate soil from the yard with the highest measured arsenic levels. Although unlikely, a child who eats dirt and who eats a large amount of soil from the property with the highest measured arsenic levels could get temporary health effects such as stomach pain, diarrhea, nausea, or vomiting.

ATSDR does not expect that exposure to polycyclic aromatic hydrocarbons in soil will make people sick.

## Will arsenic and polycyclic aromatic hydrocarbons in soil in my yard cause me to get cancer?

If people are exposed to high amounts for a long time, arsenic and polycyclic aromatic hydrocarbons may cause cancer in people. The cancer risks from being exposed for 70 years to arsenic and polycyclic aromatic hydrocarbons in the soil for the property with the highest average concentration are within EPA's Superfund acceptable risk range and represent a low cancer risk.

## Are there any medical tests to find out if I have unsafe levels of arsenic and polycyclic aromatic hydrocarbons in my body?

Tests can measure arsenic in your blood, urine, hair, and fingernails. A urine test is best to find out if any exposure to arsenic has occurred within a few days before the test. Tests on hair and fingernails can measure exposure to high levels of arsenic over the past 6-12 months. These tests can also find out if you have been exposed to above-average levels of arsenic. But the tests **cannot** tell where the arsenic came from or if low levels of arsenic in your body will make you sick.

Once in the body, polycyclic aromatic hydrocarbons change into chemicals that can attach to other substances in the body. Some tests can find polycyclic aromatic hydrocarbons in body tissues or blood. But these tests **cannot** tell whether you might get sick. And they **cannot** find how much polycyclic aromatic hydrocarbons you have or where it came from.

## Will ATSDR check my or my child's health or on any of our medical issues?

ATSDR works with groups that do practice environmental and toxicological medicine. These groups help ATSDR teach and consult with the public about environmental issues. These groups have direct patient-care services. You will have to pay the cost of those patient care services. ATSDR can help you or your doctor by pointing you toward the groups that supply those services.

**For questions about ATSDR's work at the  
Collegeville, Fairmont and Harriman Park communities  
you can contact:**

**Sue Casteel**

Phone: 404-562-0637

Cell phone: 404-747-4185

E-mail: [casteel.sue@cdc.gov](mailto:casteel.sue@cdc.gov)

**Bob Safay**

Phone: 404-562-1782

E-mail: [safay.robert@cdc.gov](mailto:safay.robert@cdc.gov)

**Mark Evans**

Phone: 770-488-0770

E-mail: [evans.mark@cdc.gov](mailto:evans.mark@cdc.gov)