

## **HEALTH RISKS OF ARSENIC**

### **What is arsenic?**

Arsenic is a naturally occurring gray metal found in the environment, typically combined with other elements. These combined compounds tend to be white or colorless powders. Arsenic is odorless and tasteless, limiting its detection in food and water to laboratory analysis. Arsenic is used in industry as a wood preservative and in insect and weed killers.

### **How does arsenic enter the environment?**

Arsenic enters water sources through erosion of natural deposits in rocks. It is also present from industrial output, such as burning of arsenic containing compounds, and agriculture waste by-products. Arsenic dissolves in water and may be present in groundwater, lakes, and rivers.

### **How might I be exposed to arsenic?**

If you live in an area with naturally high levels of arsenic or near a hazardous waste site, you may ingest arsenic with your water or from food grown in the soil. Occupational exposure is possible through inhalation; workers in copper or lead smelting wood treatment processing plants may be at risk when proper safety equipment is not used. Arsenic-containing pest control media may be unknowingly inhaled or swallow.

### **Is arsenic in my drinking water?**

The only way to determine if you are consuming drinking water with unsafe levels of arsenic is to have a water sample tested by a Certified Drinking Water Laboratory. Unsafe levels of arsenic exist in drinking water if sample results indicate a concentration greater than 10 µg/L or .010 mg/L. A list of laboratories and the procedure to sample water are available on the Indiana State Department of Health Website with details below.

### **Can I continue to use my water source if arsenic levels are above safe levels?**

Drinking water contaminated with arsenic for long periods of time can result in adverse health outcomes. Consuming water with elevated levels of arsenic may be hazardous to the health of all users, with increased risk for children, pregnant women, the elderly, and individual with compromised immune systems. Proper inline treatment of a water supply can provide safe, clean drinking water.

### **How can arsenic affect my health?**

Because arsenic is a natural part of the earth, low levels of arsenic are present in soil, water, food, and air environments. Higher levels arsenic may cause symptoms ranging from nausea, vomiting and diarrhea to dehydration and shock. Long-term exposure to high levels of inorganic arsenic in drinking water has been associated with skin disorders and increased risks for diabetes, high blood pressure, heart disease, and several types of cancer including skin and lung. The Environmental Protection Agency (EPA) has classified inorganic arsenic as a human carcinogen.

## **HEALTH RISKS OF ARSENIC** continued

### **Is there a medical test to determine whether I have been exposed to arsenic?**

There are tests that can measure arsenic in your blood, urine, hair or fingernails. None of these tests are routinely available at your doctor's office. Additional resources below.

### **Additional Resources**

#### **Indiana State Department of Health (ISDH)**

- 1.) Arsenic – Indiana State Department of Health - <http://www.in.gov/isdh/18887.htm>
- 2.) Indiana Certified Drinking Water Chemistry Laboratories - <http://www.in.gov/isdh/22452.htm>
- 3.) Submission Forms and Containers, Laboratories - <http://www.in.gov/isdh/24550.htm>
- 4.) Instruction for Arsenic in Water Sample Collection - [http://www.in.gov/isdh/files/Arsenic\\_In\\_Water\\_Sampling\\_2014.pdf](http://www.in.gov/isdh/files/Arsenic_In_Water_Sampling_2014.pdf)

#### **Indiana Department of Environmental Management (IDEM)**

- 1.) Arsenic Fact Sheet, Drinking and Groundwater - [http://www.in.gov/idem/files/factsheet\\_arsenic.pdf](http://www.in.gov/idem/files/factsheet_arsenic.pdf)
- 2.) Statewide Ground Water Monitoring Network - <http://in.gov/idem/cleanwater/2453.htm>

#### **Center for Disease Control and Prevention (CDC), United States of America**

- 1.) Arsenic and Drinking Water from Private Wells - <http://www.cdc.gov/healthywater/drinking/private/wells/disease/arsenic.html>
- 2.) Well Water Testing - <http://www.cdc.gov/healthywater/drinking/private/wells/testing.html>

#### **United States Geological Survey (USGS)**

- 1.) Arsenic in Groundwater of the US, Trace Elements National Synthesis Project - <http://water.usgs.gov/nawqa/trace/arsenic/>
- 2.) Arsenic in Midwestern glacial deposits— Occurrence and relation to selected hydrogeologic and geochemical factors - <http://pubs.usgs.gov/wri/wri034228/>

#### **Environmental Protection Agency (EPA), United States of America**

- 1.) Drinking Water Treatability Database, Arsenic - <https://iaspub.epa.gov/tdb/pages/contaminant/contaminantOverview.do?contaminantId=1175876466>
- 2.) Arsenic Chemical Assessment Summary, Integrated Risk Information System (IRIS), National Center for Environmental Assessment - [https://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance\\_nmbr=0278](https://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance_nmbr=0278)
- 3.) Human Health Effects from Chronic Arsenic Poisoning, Freedom of Information Act - <http://www.epa.gov/foia/human-health-effects-chronic-arsenic-poisoning-review>