NEW MEXICO DEPARTMENT OF HEALTH
Building a Healthy New Mexico!
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Arsenic Exposure Information

What is arsenic?

Arsenic is a naturally occurring element widely present in the earth's crust. Because it occurs naturally in soil and minerals, it may enter the air, water, and land from windblown dust and may get into water from runoff and leaching. Groundwater in some parts of New Mexico contains higher levels of arsenic due to the effects of the regional geology. This is why some areas have higher levels of arsenic in drinking water. Also, the depth of a drinking water well can significantly affect the arsenic concentration. Because arsenic is widely present in the environment, it can also occur in plants and animals, and may accumulate in fish and other food sources. The form of arsenic that occurs in food products is an organic form meaning the arsenic is attached to carbon-containing molecules.

How does arsenic exposure occur?

Arsenic exposure primarily occurs by ingesting amounts that might be present in food and water. Inhaled sources of arsenic exposure include tobacco products or breathing sawdust or smoke from wood treated with arsenic. In addition, some herbal teas and remedies can contain high levels of arsenic. Adults in the US have an estimated average daily arsenic intake of 50 micrograms. About 80% of this is the less toxic organic form found in meat, seafood, and poultry. Consumption of seafood can raise urine arsenic to as high as 2000 micrograms per liter and urinary excretion can last for up to 5 days following ingestion.

Is there a test to show how much arsenic exposure someone may have?

There are tests available to measure arsenic in urine, blood, hair, and fingernails. The urine test is the most reliable for arsenic exposure within the past week. A factor in elevated arsenic in urine can relate to how concentrated the urine is based on how much water and fluids are consumed and the health condition of the person. Urine tests can include ways to correct for dilution by measuring and adjusting for creatinine. The urine test can also be performed in a way to determine if the arsenic is in the organic form. Tests of hair and fingernails can measure exposure to high levels of arsenic over the past 6-12 months. These tests can detect exposure to above average levels of arsenic, but generally cannot predict how the levels of arsenic will affect the health of an individual.

What are the health effects associated with arsenic?

The possible health effects of arsenic vary with the form of arsenic (the organic form in food is less toxic than the inorganic form in water or soil), as well as the amount of the exposure, the duration of the exposure, and the susceptibility of the person being exposed. Long-term exposure to elevated arsenic levels has the potential to cause many different health problems. Illnesses strongly linked to this type of exposure include certain cancers (bladder, lung, non-melanoma skin, kidney, prostate and liver); arterial thickening; fibrosis and cirrhosis of the liver; damage to peripheral nerves (sensation of pins and needles in hands and feet); and changes to the pattern of color or thickness of skin.

What is being done about arsenic in New Mexico?

The NMDOH is conducting a study of arsenic and metals in urine of residents across the state and recommending ways to reduce exposures. Elevated arsenic levels in urine have been found in about 5 – 10% of New Mexicans tested to date, typically in people who have consumed seafood/fish oil or use tobacco. Resampling of these individuals typically shows a substantial reduction in urinary arsenic if these products are avoided. The NMDOH study includes a questionnaire of dietary, tobacco, herbal products, occupational, and environmental sources of arsenic and metal exposures. Anyone interested in participating in this study to determine levels of arsenic and metals in their urine and drinking water, or anyone with questions related to arsenic exposure, can call Environmental Epidemiology Bureau at: **888-878-8992**