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Arsenic Poisoning

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What is inorganic arsenic?

Inorganic arsenic is metallic or a metalloid element that forms a number of poisonous compounds. In industry, it can be found in a gaseous form termed arsine gas that is very toxic when inhaled. Inorganic arsenic is found in nature at low levels mostly compounded with oxygen, chlorine, and sulfur. These are called inorganic arsenic compounds. Inorganic arsenic compounds are much more poisonous to most biologic systems (animals, plants, humans) than organic arsenic (see below). Inorganic arsenic occurs in nature in the soil, copper and lead ore deposits, and water, but usually in low concentrations. However, it can become more concentrated when industrial processes use it to make wood preservatives, metal compounds, or organic arsenic-containing compounds such as insecticides, weed killers, and other compounds. If such compounds are burned, inorganic arsenic can be released into the air and later settle on the ground or in water and either remain in the inorganic form or combine with organic material.

What is organic arsenic?

Organic arsenic is any compound that is made from a chemical combination of the element arsenic with any organic compound (compounds containing a large amount of carbon). These are often termed arsenical organic compounds. Most frequently organic arsenic is a component used in making insecticides and weed killers and other compounds. Organic arsenic usually is not poisonous to humans but may be poisonous to humans in high concentrations. In general, organic arsenic is usually far less poisonous than inorganic arsenic.

What are the symptoms of arsenic poisoning?


People can be exposed to arsenic by inhaling it, by consuming contaminated foods, water, or beverages *IQ*, or by skin contact. We are normally exposed to trace amounts of arsenic in the air and water, and in foods. People may be exposed to higher levels if they live near industrial areas that currently or formerly contained arsenic compounds. Areas with known high concentrations of arsenic in the drinking water are also associated with greater exposure.

Acute or immediate symptoms of a toxic level of exposure to arsenic may include the following:

- Vomiting
- Abdominal pain

- Diarrhea
- Dark urine (termed black water urine)
- Dehydration
- Cardiac problems
- Hemolysis (destruction of red blood cells)
- Vertigo
- Delirium
- Shock
- Death

Long-term exposures to arsenic lower than toxic levels can lead to skin changes (darkening or discoloration, redness, swelling and hyperkeratosis (skin bumps that resemble corns or warts). Whitish lines (Mees' lines) may appear in the fingernails. Both sensory and motor nerve defects can develop. Additionally, liver and kidney function may be affected.

Arsenic exposure over the long-term has also been associated with the development of certain cancers, and arsenic has been classified as a carcinogen by the Environmental Protection Agency (EPA). Studies of people in parts of Southeast Asia and South America where there has been a high level of arsenic in the drinking water have reported an increased risk of developing cancers of the bladder, kidney, lung, and skin. Organic arsenic compounds are not as toxic as inorganic compounds and are not believed to be linked to cancer  . **Continue Reading**

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