

Arsenic Toxicity

Patient Education and Care Instruction Sheet

Course: WBCBDV1576

Date: October 1, 2009

Expiration Date: October 1, 2011

Arsenic Overview	<p>Arsenic is a naturally occurring element widely distributed in the earth's crust. In the environment, arsenic is combined with oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds.</p> <p>Inorganic arsenic compounds are mainly used to preserve wood. Copper chromated arsenate (CCA) is used to make "pressure-treated" lumber. CCA is no longer used in the United States for residential uses; it is still used in industrial applications. Organic arsenic compounds are used as pesticides, primarily on cotton fields and orchards.</p>
How Can People Be Exposed to Arsenic?	<p>Some of the many possible ways of being exposed to arsenic include</p> <ul style="list-style-type: none">• drinking from a well contaminated by naturally occurring mineral arsenic,• sawing or handling lumber treated with arsenic-containing preservatives (exposed by direct skin contact and/or breathing in of sawdust),• burning lumber containing arsenic preservatives in a stove or fireplace, and• eating shellfish and other sea foods that contain "fish arsenic". This type of arsenic is not harmful to humans but can indicate arsenic exposure in certain lab work results.

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<p>How Can Arsenic Affect Health?</p>	<p>Effects of arsenic are not specific, and the same symptoms may be caused in a variety of other health conditions. Symptoms may include</p> <ul style="list-style-type: none"> • numbness, tingling, or pins and needles in the feet and hands with associated weakness, • stomach pain or diarrhea, • patch areas of increased skin pigment, • patchy areas of thickened outer skin layer, and • many others. <p>Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the U.S. Environmental Protection Agency have determined that inorganic arsenic is a known human carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic arsenic is carcinogenic to humans.</p>
<p>How Can Arsenic Affect the Health of Children?</p>	<p>There is some evidence that inhaled or ingested arsenic can injure pregnant women or their unborn babies, although the studies are not definitive. Studies in animals show that large doses of arsenic that cause illness in pregnant females, can also cause low birth weight, fetal malformations, and even fetal death. Arsenic can cross the placenta and has been found in fetal tissues. Arsenic is found at low levels in breast milk.</p>
<p>What Can be Learned from Test Results for Arsenic Exposure?</p>	<p>The most reliable test is a 24-hour urine collection for arsenic, measured after a period of at least 48 hours without eating seafood. Some seafood contain a nontoxic seafood arsenic that can increase total urine arsenic levels measured in the most commonly available arsenic test.</p> <ul style="list-style-type: none"> • The results of the 24-hour arsenic urine collection can

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	<p>determine if you have been exposed to above-average levels of arsenic.</p> <ul style="list-style-type: none"> • However, the test results alone cannot predict whether the arsenic levels in your body will affect your health.
<p>How Is Over-exposure to Arsenic Treated?</p>	<p>The primary treatment for arsenic exposure is to identify and remove individuals from the exposure sources.</p> <ul style="list-style-type: none"> • Recovery is usually gradual. • In some very severe exposures, an antidote, which must be given by intra muscular injection, is used to bind the arsenic and speed its removal from the body.
<p>How Can People Reduce Their Risk of Arsenic Poisoning?</p>	<p>If your source of drinking water is a private well and you suspect that your exposure to arsenic is associated with the water you drink, you should</p> <ul style="list-style-type: none"> • have your well tested and • use bottled water for drinking until the well is shown to be safe or until appropriate water filtration systems are put in place to remove the arsenic. <p>Water from public supplies must, by law, be tested for arsenic and be within regulated limits. However, drinking water from private wells, particularly in areas with known high arsenic in ground or well water, may need to be tested specifically for arsenic. Check with your health department regarding testing recommendations.</p> <ul style="list-style-type: none"> • Stop smoking. Smoking tobacco causes lung cancer. Tobacco may contain arsenic. Studies have shown that smoking, along with exposure to other sources of arsenic, further increases the risk for developing lung cancer. • Ensure a well balanced diet rich in selenium, other antioxidants, and folate. There is evidence that mal- or

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	<p>undernourishment affects the body's ability to protect itself from the effects of arsenic.</p> <ul style="list-style-type: none">• When using CCA-treated lumber in nonresidential applications, follow the warnings regarding the wearing of personal protective equipment such as gloves, eye, and respiratory protection.• Have children wash their hands after playing on CCA-treated lumber play equipment.• Consider annual sealant of any existing CCA-treated lumber surfaces.• Limit sun exposure and use sunscreen to help decrease the risk of skin cancer. Exposure to arsenic and UVB radiation together may further increase the risk of developing skin cancer.• Discuss your concerns regarding arsenic and prevention of hazardous exposures at the workplace with your employer and/or workplace health and safety representative• Contact the health department for assistance if a source of arsenic exposure is not identified.• Contact a doctor if you develop signs of health changes
Clinical Follow up Instructions	<p>Return for laboratory testing: _____</p> <p>Return to clinic: _____</p> <p>Other instructions: _____</p> <p>_____</p> <p>_____</p>