

Health Effects of Lead Exposure

Lead is a known health hazard in mining, smelting, ammunition production, radiator shops and battery recycling. The information that follows explains how lead can enter your body, what the health effects are, and what you can do to protect your health.

How Do You Get Exposed To Lead?

Lead can enter your body in two ways: you can breathe it, or you can swallow it. Lead sulphide, for instance, is found in mine ore dust (3 to 6% lead) and is formed during crushing, grinding and transfer points in mines. Concentrate dust (about 60% lead) is present in the dryers and loadout. Lead Sulphide ore dust or lead concentrate enter the body through the nose and/or mouth when you breathe. Very fine dust particles go into the lungs and the lead is absorbed into the bloodstream. When products that are contaminated with lead sulphide are heated, such as in welding, you can inhale lead fumes. If lead dust settles on your lips, moustache, or beard, you might swallow it. You also swallow lead if food or cigarettes are handled with lead-contaminated hands. The lead fumes you inhale and the lead you swallow also get absorbed into the bloodstream.

Once lead is in the bloodstream, it is circulated through all parts of the body. Lead can be stored in bones, liver, and kidneys. When lead no longer enters the body (that is, when exposure stops) the body gets rid of the storage deposits. The amount of time it takes to get rid of deposits depends on a person's length of exposure, the amount of stored lead, and the efficiency of a person's kidney function. Not everyone is able to excrete lead at the same rate.

Health Effects

Too much lead can affect the nervous system and cause headaches, dizziness, irritability, memory problems, and disturbance in sleep. It can affect the digestive system and

cause nausea, vomiting, constipation, appetite loss, and abdominal pain. Lead also affects formation of blood and can result in anemia. Over time, the nervous and muscle systems can be damaged; this causes muscle weakness, decreased feeling in hands and feet, and a metallic taste in the mouth. Damage to the kidneys may lead to high blood pressure. Too much lead can also cause miscarriages and stillbirths when pregnant women are exposed to lead. In men, the sperm can be affected and this may result in infertility.

Although there are many possible symptoms, you may have too much lead in your body without noticing any change in your health. Some of these changes take a long time to develop. The best thing you can do is to protect yourself before your health is affected.

Your family's health may be at risk if you take lead dust home on your clothes, boots, or in your hair. Children are much more affected by lead than adults.

Protecting Your Health

The best way to prevent lead from affecting you or your family's health is by using safe personal and work habits. You can do this as follows.

1. Develop safe personal habits at work:
 - a. keep hands away from your lips and mouth;
 - b. don't eat or smoke in the work area;
 - c. don't rub your sleeves on your face;
 - d. always wash your hands and face thoroughly with soap and water before breaks;
 - e. rinse your mouth before eating or smoking.

2. Wear appropriate work clothes:
 - a. wear coveralls, work boots, and a washable or disposable cap;
 - b. remove work clothes before eating or smoking and before leaving work;
 - c. use a change area separate from the work area;

- d. keep work and street clothes separate;
 - e. keep work clothes clean. (If work clothes have to be taken home to be cleaned, put them in a plastic bag, wash them separately from any other clothes, and rinse the washing machine afterwards.)
3. Control dust levels at work:
- a. always use the ventilation system which will control the lead dust and fumes;
 - b. wear the mask when necessary;
 - c. make sure your mask fits properly;
 - d. keep your mask in good shape: inspect it every day, replace it when necessary, keep it clean and dry, and store it in a clean area when not in use.

If you are not sure about something, ask your supervisor. Both you and your employer have a legal responsibility to ensure your health and safety at work.

Medical Tests

Since you don't always feel "sick" with lead in your body it is a good idea to have regular check-ups by a family doctor to find out if you have any of the health problems mentioned above. In addition to some questions and a physical exam, a blood sample can be taken to see how much lead is entering your body. Employers with lead dusts and fumes in the workplace must provide regular monitoring of employees. This is done by having a health professional perform blood lead level screening testing. If your blood lead level is higher than that in the Health Regulations, you should not be exposed to lead dust or fume until your lead level returns to normal. Because a developing baby is very sensitive to damage by lead, pregnant women working with lead or women planning a pregnancy should see their doctor. Recommended blood lead levels for pregnant women are lower to protect the unborn baby.