

# LEAD POISONING

## Overview

Lead poisoning occurs when lead builds up in the body, often over months or years. Even small amounts of lead can cause serious health problems. Children younger than 6 years are especially vulnerable to lead poisoning, which can severely affect mental and physical development. At very high levels, lead poisoning can be fatal.

Lead-based paint and lead-contaminated dust in older buildings are common sources of lead poisoning in children. Other sources include contaminated air, water and soil. Adults who work with batteries, do home renovations or work in auto repair shops also might be exposed to lead. There is treatment for lead poisoning, but taking some simple precautions can help protect you and your family from lead exposure before harm is done.

## Symptoms

Initially, lead poisoning can be hard to detect — even people who seem healthy can have high blood levels of lead. Signs and symptoms usually don't appear until dangerous amounts have accumulated.

### Lead poisoning symptoms in children

Signs and symptoms of lead poisoning in children include:

- Developmental delay
- Learning difficulties
- Irritability
- Loss of appetite
- Weight loss
- Sluggishness and fatigue
- Abdominal pain
- Vomiting
- Constipation
- Hearing loss
- Seizures
- Eating things, such as paint chips, that aren't food (pica)

## Causes

Lead is a metal that occurs naturally in the earth's crust, but human activity — mining, burning fossil fuels and manufacturing — has caused it to become more widespread. Lead was also once used in paint and gasoline and is still used in batteries, solder, pipes, pottery, roofing materials and some cosmetics.

### Lead in paint

Lead-based paints for homes, children's toys and household furniture have been banned in the United States since 1978. But lead-based paint is still on walls and woodwork in many older homes and apartments. Most lead poisoning in children results from eating chips of deteriorating lead-based paint.

## Water pipes and imported canned goods

Lead pipes, brass plumbing fixtures and copper pipes soldered with lead can release lead particles into tap water. Lead solder in food cans, banned in the United States, is still used in some countries.

## Other sources of lead exposure

Lead sometimes can also be found in:

- **Soil.** Lead particles from leaded gasoline or paint settle on soil and can last years. Lead-contaminated soil is still a major problem around highways and in some urban settings. Some soil close to walls of older houses contains lead.
- **Household dust.** Household dust can contain lead from lead paint chips or from contaminated soil brought in from outside.
- **Pottery.** Glazes found on some ceramics, china and porcelain can contain lead that can leach into food served or stored in the pottery.
- **Toys.** Lead is sometimes found in toys and other products produced abroad.
- **Cosmetics.** Tiro, an eye cosmetic from Nigeria, has been linked to lead poisoning. Kohl is another eye makeup that may contain lead.
- **Herbal or folk remedies.** Lead poisoning has been linked to greta and azarcon, traditional Hispanic medicines, as well as some from India, China and other countries.
- **Mexican candy.** Tamarind, an ingredient used in some candies made in Mexico, might contain lead.
- **Lead bullets.** Time spent at firing ranges can lead to exposure.
- **Occupations.** People are exposed to lead and can bring it home on their clothes when they work in auto repair, mining, pipe fitting, battery manufacturing, painting, construction and certain other fields.

## Risk factors

Factors that may increase your risk of lead poisoning include:

- **Age.** Infants and young children are more likely to be exposed to lead than are older children. They might chew paint that flakes off walls and woodwork, and their hands can be contaminated with lead dust. Young children also absorb lead more easily, and it's more harmful for them than it is for adults and older children.
- **Living in an older home.** Although the use of lead-based paints has been banned since the 1970s, older homes and buildings often retain remnants of this paint. People renovating an older home are at even higher risk.
- **Certain hobbies.** Making stained glass and some jewelry requires the use of lead solder. Refinishing old furniture might put you in contact with layers of lead paint.
- **Living in developing countries.** Developing countries often have less strict rules regarding exposure to lead than do developed countries. American families who adopt a child from another country might want to have the child's blood tested for lead poisoning. Immigrant and refugee children also should be tested.

Lead can harm an unborn child. If you're pregnant or planning a pregnancy, be especially careful to avoid exposure to lead.

# **Asbestosis**

## **Overview**

Asbestosis (as-bes-TOE-sis) is a chronic lung disease caused by inhaling asbestos fibers. Prolonged exposure to these fibers can cause lung tissue scarring and shortness of breath. Asbestosis symptoms can range from mild to severe, and usually don't appear until many years after initial exposure.

## **Bronchioles and alveoli in the lungs**

In your lungs, the main airways, called bronchi, branch off into smaller and smaller passageways. The smallest airways, called bronchioles, lead to tiny air sacs called alveoli. Asbestos is a natural mineral product that's resistant to heat and corrosion. It was used extensively in the past in products such as insulation, cement and some floor tiles. Most people with asbestosis acquired it on the job before the federal government began regulating the use of asbestos and asbestos products in the 1970s. Today, its handling is strictly regulated. Getting asbestosis is extremely unlikely if you follow your employer's safety procedures. Only trained and accredited asbestos professionals should manage asbestos products. Treatment focuses on relieving your symptoms.

## **Symptoms**

The effects of long-term exposure to asbestos typically don't show up until 10-40 years after initial exposure. Symptoms can vary in severity.

## **Clubbing of fingers**

Clubbing of the fingers, in which the fingertips spread out and become rounder than usual, is often linked to heart or lung conditions.

Asbestosis signs and symptoms may include:

- Shortness of breath
- A persistent, dry cough
- Chest tightness or pain
- Dry and crackling sounds in your lungs when you inhale
- Fingertips and toes that appear wider and rounder than usual (clubbing)

## **When to see a doctor**

If you have a history of exposure to asbestos and you're experiencing increasing shortness of breath, talk to your health care provider about the possibility of asbestosis.

## **Causes**

If you are exposed to high levels of asbestos dust over a long period of time, some of the airborne fibers can become lodged within your alveoli — the tiny sacs inside your lungs where oxygen is exchanged for carbon dioxide in your blood. The asbestos fibers irritate and scar lung tissue, causing the lungs to become stiff. This makes it difficult to breathe.

As asbestosis progresses, more and more lung tissue becomes scarred. Eventually, your lung tissue becomes so stiff that it can't contract and expand normally.

Smoking appears to increase the retention of asbestos fibers in the lungs, and often results in a faster progression of the disease.

## **Risk factors**

People who worked in mining, milling, manufacturing, and installation or removal of asbestos products before the late 1970s are at highest risk of asbestosis. Examples include:

- Asbestos miners
- Aircraft and auto mechanics
- Boiler operators
- Building construction workers
- Electricians
- Railroad workers
- Refinery and mill workers
- Shipyard workers
- Workers removing asbestos insulation around steam pipes in older buildings

Risk of asbestosis is generally related to the amount and the duration of exposure to asbestos.

The greater the exposure is, the greater the risk is of lung damage.

Secondhand exposure is possible for household members of exposed workers, as asbestos fibers may be carried home on clothing. People living close to mines may also be exposed to asbestos fibers released into the air.