

Practical Toxicology

Lab 10

Lead poisoning

Assist. Lecturer:

WATBAN ABDULLAH AHMED

Lead is a naturally occurring poisonous metal found in small amounts in the earth's crust. It's a toxic element that can cause serious health effects in humans and animals. Lead is especially dangerous to babies and young children. It can harm them even before they're born.

Sources and routes of exposure

Where is lead found?

Lead is most commonly found in lead paint. Children who live in older houses with peeling lead paint or lead pipes are often affected. Lead can also contaminate:

ingestion of lead-contaminated dust, water (from leaded pipes) and food (from lead-glazed or lead-soldered containers) and from hand-to-mouth behaviour

Symptoms and Causes

What are the signs and symptoms of lead poisoning in children?

Often, children who have lead poisoning have no symptoms. Even healthy-looking children can have high levels of lead in their bodies. Symptoms of lead poisoning in children can include:

Cramps.

Hyperactivity (restlessness, fidgeting and talking too much).

Learning problems.

Changes in behavior.

Headaches.

Vomiting.

Fatigue.

Anemia (not enough hemoglobin in their blood).

What are the signs and symptoms of lead poisoning in adults?

**Adults can be exposed to lead at work or other places.
Symptoms that may develop in adults include:**

Headaches.

Abdominal pain.

Personality changes.

Anemia.

Numbness in feet and legs.

Loss of sex drive.

Infertility.

Diagnosis

A simple blood test can detect lead poisoning. A small blood sample is taken from a finger prick or from a vein. Lead levels in the blood are measured in micrograms per deciliter (mcg/dL).

Treatments

Treatment

The first step in treating lead poisoning is to remove the source of the contamination. If you can't remove lead from your environment, you might be able to reduce the likelihood that it will cause problems.

For instance, sometimes it's better to seal in rather than remove old lead paint. Your local health department can recommend ways to identify and reduce lead in your home and community..

For children and adults with relatively low lead levels, simply avoiding exposure to lead might be enough to reduce blood lead levels.

Treating higher levels

For more-severe cases, your doctor might recommend:

Chelation therapy. In this treatment, a medication given by mouth binds with the lead so that it's excreted in urine. Chelation therapy might be recommended for children with a blood level of 45 mcg/dL or greater and adults with high blood levels of lead or symptoms of lead poisoning.

ethylenediaminetetraacetic acid (EDTA) chelation therapy. Health care providers treat adults with lead levels greater than 45 mcg/dL of blood and children who can't tolerate the drug used in conventional chelation therapy most commonly with a chemical called calcium disodium ethylenediaminetetraacetic acid (EDTA). EDTA is given by injection.

Thanks for Listening