

Lead and Other Heavy Metal Poisoning

Although the focus of this page is lead poisoning, other heavy metals of importance include cadmium, antimony, chromium, mercury and arsenic, as those are also of environmental concern as they can cause illness in both humans and animals. Dogs, cats and cattle are most likely to be affected by lead poisoning.

DISEASE IN ANIMALS

Clinical signs: Signs of lead poisoning depend on the species involved and the dosage. Acute disease is characterized by sudden death, muscle tremors, frothing at the mouth, colic, head pressing, apparent blindness and seizures. In subacute or chronic disease, there is anorexia, weight loss, depression, dysphagia, vomiting or diarrhea, central nervous system excitation or depression, aggressive behavior, or constipation followed by diarrhea.

Reporting: Lead and other heavy metal poisonings are not a required reportable illness in animals. Voluntary reporting to the [local health department](#) (LHD) is encouraged so people who may have also been exposed to the potential source of contamination be assessed for toxicosis and the source can be controlled or eliminated. In particular, pets are valuable as sentinels for household environmental lead contamination as small children in the household are particularly sensitive.

Transmission: In pets, ingestion of dust during regular grooming is the most common mode of transmission. Lead-based paint was used in many homes built before 1978 and lead dust is created when the paint is chipping, peeling, rubbed or otherwise deteriorated or when home renovations disturb the painted surfaces. Other sources of lead exposure include ingestion of lead-containing items, such as fishing sinkers, lead shot and paint. Ingestion of other heavy metals is often the result of insecticides, environmental contamination or improperly prepared feed.

Diagnostics:

- Lead Levels: in blood or tissue (liver and kidney by biopsy or post-mortem)
- CBC: anemia and basophilic stippling of red blood cells
- Radiographs: long bones of the legs may show lead lines (chronic); abdomen may reveal ingested lead paint or lead objects (acute)

DISEASE IN HUMANS

Reporting: Lab results on human blood, urine or other bodily substance of an Ohio resident that detect any levels of lead, cadmium, mercury, or arsenic must be reported to the Ohio Department of Health. Because of the serious long-term adverse health affect of lead poisoning in children, some public health agencies have environmental testing and remediation programs. Therefore, contacting the local health department is also encouraged.

Human symptoms: Symptoms are non-specific and may include fatigue, changes in mood, confusion, nausea, stomach distress, headache, tremors, vision problems, weight loss, peripheral neuropathy, anemia, reproductive failure, encephalopathy, memory loss, seizures and coma. Lead can be passed from mothers to their unborn children and can cause miscarriages and premature births.

Many children have no symptoms at the time of the exposure, but potentially permanent damage can still be occurring. In an infant, lead can cause permanent cognitive impairment, behavioral disorders and developmental delays such as growth failure, anemia, sleep problems, hearing loss, or speech, language or attention deficits. In older children, lead poisoning can cause hyperactivity, language deficiency, hearing loss, aggression and learning disabilities.

Transmission: Acute and chronic exposures typically occur through ingestion of dust during hand-to-mouth activities, though inhalation is also possible.

FOR MORE INFORMATION

Disease in Animals

[Merck Veterinary Manual - Heavy Metal Toxicology](#)

Disease in Humans

[ODH Lead Poisoning Prevention](#)

[ODH Childhood Lead Poisoning Prevention](#)

[CDC Lead Poisoning Prevention](#)

[U.S. Environmental Protection Agency](#)