

# HARDWARE DISEASE AND HEAVY METAL TOXICOSIS IN CHICKENS

## What is this?

**Hardware disease is a condition where a bird ingests a metal object which can sit within the gastrointestinal tract and cause problems in two different ways:**

It can lead to localized trauma to the inner lining of the gastrointestinal tract and, if it is a sharp object, it can even penetrate through tissues.

If it contains heavy metals such as lead, zinc or copper, heavy metal toxicosis may develop as the object is digested and absorbed into the blood.

## What signs will a bird show with this condition?

Birds can have variable signs ranging from mild to severe.

Some possible signs include lethargy, inappetence, wobbliness while walking or perching, limb paresis (weakness), seizures, crop stasis, pale mucous membranes, vomiting/regurgitation, and diarrhea.

## How is this diagnosed?

Radiographs can be done to identify metallic objects within the body.

Testing blood for levels of heavy metals may be necessary due to the fact that absorbed toxins may remain in the blood and organs even after the metallic objects have passed through the gastrointestinal tract.

## How is it treated?

If an object is still present within the gastrointestinal tract and causing clinical disease, it needs to be removed through the use of various techniques:

- Flushing the crop or stomach with saline
- Administering cathartics or grit to help the object(s) pass
- Endoscopically retrieving objects
- Surgery to remove difficult to reach, embedded or penetrating objects

For treatment of toxic metal levels within the blood, chelation therapy should be performed:

- CaEDTA, DMSA or D-penicillamine can be used

Rechecking blood levels and radiographs to determine if treatment has been successful is an important part of the treatment plan.

Additional supportive care may be needed if secondary problems have occurred.

- Antibiotics, gastroprotectants and/or pain medications

If a metallic object is present within the gastrointestinal tract but is not made of toxic substances and is not sharp or causing mechanical discomfort, then no treatment may be needed.

## How can this be prevented?

Chickens are attracted to shiny things such as nails, screws, coins, hooks, bits of wire, staples, etc.

Make sure your flock's environment is free of metal objects that they might try to eat. A weekly inspection of the coop and range is a good place to start.

Be especially careful after any construction projects in the yard or home. A magnet may be used to locate small metallic objects after construction projects have been completed.

## Public health concerns

Valid concerns have been raised that there is a potential health risk for humans consuming eggs or meat from birds that have lead toxicity.

Chickens with toxic levels of lead in their system have been found to have lead detected in their eggs.

At this time it is generally recommended that eggs and meat not be consumed from birds that have had lead toxicity.

Some medications used in the treatment of heavy metal toxicity have not been studied in chickens and their use may be prohibited by certain governing bodies.

## For more information

For more information on birds, ask your veterinarian for copies of the following AAV Client Education Brochures:

- Basic Care
- Behavior: Normal and Abnormal
- Avian Chlamydiosis and Psittacosis
- Digital Scales
- Feather Loss
- Feeding
- Health Exam
- Injury Prevention and Emergency Care
- Signs of Illness
- When Should I Take My Bird to a Vet

## Looking for an avian veterinarian near you?

For help finding a qualified avian veterinarian in your area, go to [www.aav.org](http://www.aav.org) and click "Find a Vet."