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TOXICOVIGILANCE

and your dog



Learn how
**HEAVY
METALS**
are IMPACTING
HIS
HEALTH,
and what
YOU CAN DO
about it.

By Noa Martinsen and Julie Casper, LAc

It's a fact that our air, soil, water and food are contaminated with manmade toxins that have a negative impact on our health – and on our dogs'. Indeed, our canine companions are on the frontline in the battle against environmental toxicity, because their bodies absorb higher levels of contamination than ours do. In the first study of its kind, the Environmental Working Group found that American companion animals are polluted with higher levels of many of the same synthetic industrial chemicals that researchers have recently found in people, including newborns. The research results show that our dogs are serving as involuntary sentinels of the widespread chemical contamination that scientists increasingly link to a growing array of health problems across a wide range of animals – wild, domesticated and human.

"Like humans, pets are also exposed to toxic chemicals on a daily basis, and as this investigation found, are contaminated at higher levels," says Jane Houlihan, vice president for research at the Environmental Working Group. "The presence of chemicals in dogs and cats sounds a cautionary warning for the present and future health of children as well. This study demonstrating the chemical body burden of dogs and cats is a wake-up call for stronger safety standards from industrial chemical exposures that will protect all members of our families, including our pets."

Heavy metals are major culprits

Some of the most physically and neurologically damaging toxins are the metals: aluminum, lead, mercury, arsenic and cadmium. They contribute to everything from tooth problems and bad breath, to worsening allergies and skin diseases, and serious life-threatening illnesses such as cancer, arthritis, kidney failure, congestive heart disease, liver diseases and diabetes. They damage the immune system, reducing defenses against infections as well as bacterial, viral and fungal diseases.

Toxic metals are abundant in the environment. Canine toxicity results from exposure to a multitude of industrial and common household chemicals coming from coal smoke, metal smelting, mining, exhaust fumes, landfills, chemicals, fertilizers, pharmaceutical drugs, vaccines, pesticides, herbicides, fungicides, even house dust and drinking water – just to name a few.

The excessive production and use of heavy metals in our environment can cause acute cases of heavy metal poisoning in dogs, but this article is not about that. Instead, we're focusing on the health impacts of persistent exposure to low levels of heavy metals, because nearly all dogs are victims of this insidious type of exposure.



The most common heavy metals causing health problems for dogs are directly toxic to cells, meaning their presence in the body is always negative. They also compete with nutritional minerals in the body. An interesting phenomenon occurs when the proper nutritional minerals are not available in adequate amounts: the body will actually substitute them with toxic metals (minerals). If levels of toxic metals are too high in the body's soft tissues, they will displace vital nutrient minerals, leading to cellular dysfunction, disease and death.

Toxicovigilance explained

Toxicovigilance is the active process of identifying and evaluating toxic risks, based on an in-depth medical assessment of acute

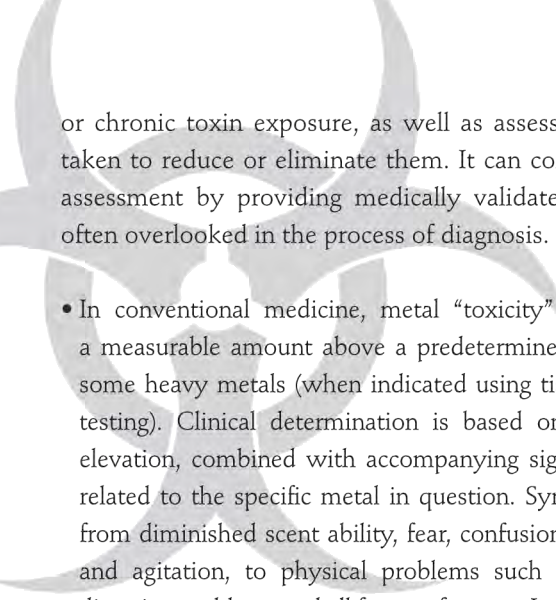
Heavy metals and dental health

The bones and teeth are storage areas for calcium, magnesium and phosphorus. When there is a deficiency of these minerals in the body, it extracts them from these storage sites and distributes them elsewhere via the blood.

Both the calcium to phosphorus and calcium to magnesium ratios are important for overall bodily health, and not just the bones, teeth and gums. Toxic heavy metals can interfere with the absorption and retention of these important minerals. For example, lead can displace calcium and antagonize magnesium.

With chronic exposure, tissue levels of heavy metals will often become elevated. Lead and cadmium are attracted to bone tissue, so eventually these metals will be sequestered into bones and teeth. Over time, as bone turnover occurs, lead and cadmium will be released back into circulation.

Heavy metals and other toxins can also cause inflammation of the soft tissues, leading to gum disease.



or chronic toxin exposure, as well as assessing the measures taken to reduce or eliminate them. It can contribute to health assessment by providing medically validated data, which is often overlooked in the process of diagnosis.

- In conventional medicine, metal “toxicity” is designated by a measurable amount above a predetermined clinical level for some heavy metals (when indicated using tissue sampling and testing). Clinical determination is based on this tissue level elevation, combined with accompanying signs and symptoms related to the specific metal in question. Symptoms can range from diminished scent ability, fear, confusion, behavior swings and agitation, to physical problems such as skin disorders, digestive problems and all forms of cancer. In fact, cancer is now the leading cause of death in dogs two years of age and older.
- In contrast, a “toxic burden” actually falls below a defined limit and exists without the signs and symptoms commonly associated with that specific metal. Under these circumstances, it should be termed a burden or increased burden and not regarded as a toxicity. This doesn’t mean a particular metal is not having a metabolic impact, or that it should not be addressed. A dog can have a heavy metal burden but still manifest many signs and symptoms due to an adverse or allergic reaction to that metal.

Tissues used to test for toxic levels of heavy metals in dogs include blood, urine, hair, claws and fecal samples. Most veterinary offices are not equipped to perform these tests, so samples must be sent to laboratories that perform such testing. To measure effects due to acute exposures, blood, urine and fecal analyses are the most accurate. For long term and cumulative body burden effects, hair and claw (toenail) tests are most accurate.

Managing toxicity in your dog

It’s important to take proactive measures to minimize toxin exposure wherever you can. Detoxification is a normal physiological process and is occurring all the time. But in today’s environment, the body’s natural defense mechanisms are overwhelmed, so we need to support the detoxification process.

1 Chelating agents are typically administered in cases of acute toxicity. The removal of heavy metals through chelation therapy can be extremely difficult for a dog’s body and must be done under the care of a qualified physician familiar with the process of toxin removal. The tests and therapy can be expensive and risky, and the therapy’s progress must be properly monitored for signs of complications.

Chelation therapy can be effective, and is often necessary for acute poisoning. But what about therapy for the chronic toxin exposure your dog faces every day? Nutritional therapy guided by a laboratory hair Tissue Mineral Analysis (hTMA) is a safe and effective way to detoxify and manage toxicity.

2 Since poor diet is associated with more heavy metal accumulation, clinical therapeutic nutrition can relieve and prevent low level metal toxicities and the disorders that accompany them. When nutrient minerals are available at optimal levels and ratios, they help protect against the absorption of toxic metals, and also hasten their removal. Start with the highest quality dog food you can afford – one that’s free of by-products, chemical preservatives, colors and flavors – and check to see where the company sources its ingredients and how it processes the food.

Nutrients known to protect against heavy metal accumulation include:

- a) Calcium, magnesium, iron, copper, zinc, selenium, vitamins A, C, E, B6 and B12, pectin, lecithin, glutathione and other antioxidants.
- b) Essential amino acids found in whole unprocessed foods.
- c) Foods like kelp, garlic and brewer's yeast.

Giving your dog protective nutrients in optimal amounts and ratios will prevent him from becoming undernourished and susceptible to the accumulation of toxic metals in his body tissues.

A biologically appropriate diet, balanced biochemistry and manageable levels of toxins all directly impact your dog's ability to remain well, from the cellular level on up. Avoid or minimize obvious sources of toxicity and feed him a good diet with properly balanced mineral ratios. That way, your dog can stay as healthy as possible, and express himself with optimal physical and emotional health. 🐕

Toxins accumulate over time

Heavy metals can easily enter the body through inhalation, intestinal absorption and even through the skin. Once inside the body, heavy metals are widely distributed to various organs and glands and throughout the central nervous system. Some metals are bone seekers and ultimately settle into the teeth and skeletal system. Others have an affinity for the central nervous system or specific organs and glands. Heavy metals can then effectively poison enzyme systems, increase free radical production, and compete with the absorption of nutritional minerals.

Toxin levels in body tissues increase with every generation, even when exposure levels stay the same. This is because the growing fetus is far more vulnerable than the adult, and most toxins pass through the placenta in-utero. Since dogs have a much shorter lifespan than humans, this increased concentration over generations happens much more quickly than in people. Dogs also live close to the ground; they roll around, and lick and eat toxins and heavy metals that have settled on lawns, floors, streets and parks.



On top of this persistent environmental exposure, most commercial pet foods, when tested, show high levels of toxins from both ingredients and processing.