

Our Animals Need To Detox Too!!

By Erin Zamzow, DVM

We live in a time of amazing medical advances, with a wealth of health information available literally at our fingertips. We are living in a world in which toxics are being introduced at an alarming rate. There is no burden of proof placed on the chemical industry to show that these chemicals are safe. The levels of toxins in our environment, our food and consequently, our organs, are increasing each year.

The toll of chronic heavy metal and chemical buildup in our bodies cannot be understated. While all body systems are compromised, the most dangerous consequences are seen in the immune, endocrine and nervous systems. And once these master systems are impaired, maintaining functional health becomes a constant and often impossible struggle.

Some of the proven consequences of body toxicity include almost all degenerative diseases; cancer, premature aging, compromised immune systems. But even prior to "major problems" of this nature, everyday life becomes complicated by heavy metal induced "mental fog", mood swings, depression, cravings, slowed recovery, weakness, weight gain. Until recently these "low-grade" issues have been either brushed off or treated with pharmaceuticals. Traditional treatment success has been limited and as more research and data emerge, many mainstream practitioners are concluding that organ toxicity is the major player in this unhappy cycle.

Sources of Toxics

Mom

The process of accumulating poisons starts *in utero* as toxins cross the placental barrier. Then mammalian milk, whether from human to infant or pug mom to pup, continues to channel these substances into young bodies.

Food and Water

We need no reminder of the recent pet food recall catastrophe to insure that we are diligent about our animals' food. Even organically grown ingredients cannot be protected from polluted air and rain. A study done by Gloria Dodd, DVM found heavy metals in even high quality canned pet food and unacceptably high levels of aluminum in many pet foods (www.planet-pets.com/drgloria).

In 42 states, some 260 contaminants were detected in public water supplies, 140 of which were unregulated chemicals! Bottled water is a potential solution, except that 25-30% of it comes from municipal tap systems (environmental working group, National Assessment of Tap Water Quality, www.ewg.org) Additionally, the plastics from the bottles can leach, contributing endocrine disruptors such as bisphenol A and phthalates.

Air - indoors and outdoors

Billions of tons of chemicals are put into the air every year including pesticides, dioxins, fumes from industrial processing and vehicles, and mercury from coal-fired power plants in the U.S. and traveling the jet stream from Asia and other countries. Amazingly, with as much as we spew into our outdoor air, our indoor air is *10 times more polluted* according to the EPA, contaminated with off-gassing flame-retardants, formaldehyde, paints, and household building materials. Household dust, which your pet breathes and licks, contains these and more.

Other

Pesticides in fly sprays are often toxic while grooming products may contain sodium laurel sulfate, phthalates, triclosan and preservatives that go directly on skin and into a animals internal systems, or are ingested as they clean themselves. Vaccines may also be a source of heavy metals such as aluminum and mercury or carcinogenic formaldehyde. Phthalates are used to soften plastic, and can be found in feed buckets, pet dishes, animal toys, and in the linings of canned foods destined for both human and animal consumption.

Effects of Toxics

Toxics affect the body in four general ways: by disrupting the production of ATP (classic poisons such as arsenate), by disrupting organs and membranes (free radicals), by disrupting cell function and signaling (pesticides with chlorinated hydrocarbons or organophosphates; endocrine disruptors; heavy metals), and by disrupting gene expression (cancer).

Neurological, immune, and metabolic problems

Heavy metals are known to be preferentially bound to receptors that are meant to receive minerals such as zinc; calcium or magnesium so thereby can interfere with immune function, muscle contraction, energy production and repair of bone. Arsenic binds to DNA.

- neurological and immune dysfunction results - what does that look like? Thyroid, adrenal (Cushings and Addisons), cell lines dividing out of control (the "C Word"), metabolic problems such as diabetes, obesity (linked to the former).

The kidneys are particularly vulnerable to heavy metals as they sequester divalent metals (such as cadmium) to prevent damage to vital enzymes. When the kidneys get overloaded, the pores in the organ get bigger and salts can no longer be regulated, resulting in kidney failure. Kidney failure is one of the major chronic diseases seen in pets and has a high fatality rate.

Endocrine system

Endocrine disruptors are chemicals that interfere with the action of natural hormones. Our hormones are responsible for cell communication, metabolic function, homeostasis such as calcium and salt balance, adrenaline release, and the regulation of testosterone and estrogen. An organ (thyroid, ovaries, thymus, etc) secretes the hormone molecule, which drifts along the blood stream until a receptor binds them. Molecules that look similar can "mimic" hormones, blocking the intended activity, and can disrupt the entire signaling system. Unfortunately, even molecules that do not have structures similar to hormones can also interfere with endocrine signals, making it extraordinarily difficult to tell which compounds may interfere.

Free Radicals

Because metals easily gain and lose electrons, they can act to trigger the formation of free radicals. UV light will also generate free radicals from oxygen, chlorine, and other molecules in air or exposed cells. Molecules need pairs of electrons to be stable and, if missing one from the pair they are considered a "free radical" and will "steal" an electron from a neighboring molecule in order to re-stabilize themselves. The molecule that was robbed now becomes a free radical and a chain reaction of free radical formation can occur; if this chain reaction cannot be stopped by the anti-oxidants in the body, oxidative stress results.

Free radicals are actually necessary in normal physiology, and are required in normal enzyme reactions and in the work of the signaling molecule NO (nitric oxide). However, an excess of or abnormal free radical molecules results in irreparable damage. Free radical damage can affect lipids (cell walls and tissues), proteins, and DNA. Probably the most common free radical damage we see is to tissues. This damage occurs when the lipids (fat molecules) that make up cell membranes are disrupted by this electron stealing chain reaction. Eventually, these lipids break down into aldehydes, which then travel, to other tissues and cause further damage. Normally, an environmental chemical would have to pass through a series of lipid barriers to get to the nucleus of the cell. As cell membranes lose their ability to move good stuff in and keep bad stuff out, the cell is unable to function properly, resulting in a variety of problems, depending on where those cells are located: skin, heart, organs, etc.

Proteins and DNA may not experience the oxidative chain reaction; instead, free radicals bind permanently to them, causing a bulky bump in the DNA chain that causes the DNA to be copied incorrectly during cell replication and causing proteins to fall apart. In the case of DNA damage, this may be passed on to the next generation. Due to the short life spans of our pets, generational effects due to chemical exposures may be seen sooner than in humans.

Helping our Pets and Horses Detoxify

Combating toxins and the damage they create in the body can be accomplished by

- a) Removing the toxins and
- b) Replacing and boosting network anti-oxidants.

Removing toxics

One very effective and safe modality for removing heavy metals and toxins from the body is through the use of ingested zeolites. Zeolites are minerals formed when volcanic ash hits seawater. Tiny honeycomb-shaped cages are formed in a mineral matrix that has a very strong negative charge. Since heavy metals and many toxins have a positive charge, they are attracted to the little cages, trapped and passively removed so as not to create a greater burden on the kidneys or other organs of elimination. Other methods include acupuncture, homeopathy, herbal and nutritional modalities.

Replacing anti-oxidants

Network anti-oxidants are effective in scavenging free radical molecules and repairing tissues. They can also protect the body from the stress of infection, inflammation and aging; aging is basically oxidation of tissues and consequent degeneration. In this way, antioxidants are an integral part of detoxification. Some studies have indicated that excessive antioxidants are actually harmful to health. There is a fine line between benefit and toxicity of some antioxidants such as selenium. The answer is in balancing antioxidants and insuring the body is supported in the synergistic function of free radical scavengers. Hence the term “network antioxidants”. These nutrients work together to boost the actions of the other, balance free radical consumption and even “recycle” each other in some cases.

Key network anti-oxidants include: coenzymeQ10, alpha lipoic acid, vitamin E, vitamin C and glutathione. There are many others as well and many are found in abundance in fruits, vegetables, green tea, etc. A supplement that provides valuable antioxidants as well as supporting the body's endogenous production of these substances is ideal.

The body is designed to heal and the mechanisms are already in place. Removing the roadblocks to health and encouraging natural healing mechanisms is the most basic foundation we can lay for our animals long and happy lives.

Vivo Animals is extremely proud to introduce formulas that address these issues specifically. These are important products as they deal with detoxification of the body, which is something people are becoming increasingly aware of in this time of overwhelming environmental toxicity.

These products are not meant to compete with other vitamin/mineral mixes; they are designed to give as a top dress to remove heavy metals and environmental toxins from the body. The flagship product is VivoZeoComplete, a 2 in 1 product that has a mineral detox base and a blend of antioxidants, blood flow enhancers and immune modulating ingredients. This is a product comes recommended with powerful field study results in the nutritional support of conditions such as laminitis (chronic and acute), insulin resistance/EMS, arthritis, slow healing injuries, and general aging concerns. It is also indicated for such inflammatory conditions as periodontal disease and inflammatory bowel syndrome.

VivoZeoComplete - Ingredients list and mechanism of use.

Zeolite (clinoptilolite) – an effective safe chelation method for removal of heavy metals and many environmental toxins, increased nutrient uptake, balances pH, supports proper immune function by allowing zinc to function normally in the body. Our proprietary air filtered zeolite has a high absorption capacity and falls under the FDA GRAS status.

Organic Reishi (grown in United States) - an anti-allergenic, anti-viral, anti-bacterial, antioxidant, has adaptogenic properties, supports healthy immune function, blood sugar regulation

Organic Cordyceps - aids respiratory function, an adaptogenic, aids in blood sugar regulation (increases the livers' output of the glucose regulating enzymes), has been used in traditional Chinese medicine to treat kidney, lung, and heart ailments, fatigue, cancer, to relieve pain, to restore general health and appetite, and to promote longevity, strengthens resistance to infection.

Mangosteen Pericarp (the outer rind of the fruit) - has compounds known as xanthenes with antioxidant, anti-bacterial, anti-fungal, and anti-tumor activity. Mangosteen also appears to have anti-histamine and anti-inflammatory properties.

Mature Green Papaya - contains enzymes including papain that help digest proteins, carbohydrates and fats. Green papaya completely digests protein and allows for quick absorption of amino acids into the body. Performs, as well in all pH mediums so are ideal for animals with weak digestion or enzyme deficiencies. Antiseptic qualities help prevent proliferation of abnormal bacteria in the intestines.

Citrus Bioflavonoids - also anti-inflammatory and participate in collagen cross linking

Cinnamon - blood sugar regulation (contains a polyphenol that mimics insulin, activates its receptor and works with insulin in the cells), enhances peripheral blood flow, anti-inflammatory, anti-oxidant, anti-microbial.

Australian Lemon Myrtle, Australian Mountain Pepper, Australian Anise - antibacterial, anti-fungal, anti-viral

Turmeric - anti-oxidant activity, immune modulating, anti inflammatory, anti-infective against salmonella and protozoa. Active ingredient is the polyphenol, curcumin that has been shown in studies to have anti-tumor and COX-2 inhibition capabilities.

Horse Chestnut - strengthens veins to reduce fluid leakage and swelling/edema

Network Antioxidants

Vitamin C - vitamin C is also responsible for producing collagen, aids in bone and ligament repair, and essential to the immune system

Vitamin E - essential nutrient and anti-oxidant

Alpha Lipoic Acid – is made by the body and needed for energy production, supplemental lipoic acid is a potent antioxidant that can cross the blood brain barrier, is liver protective and has been shown to increase cellular uptake of glucose. Helps to regenerate Vitamin C and Vitamin E in the body.

Glutathione - a tri-peptide antioxidant protects cells from free radicals and is an important detoxifier in the body.

Quercetin - a flavonoid that acts as an anti-inflammatory inhibits histamine and other allergic mediators and is vitamin C sparing in the body. Thought to be cancer protective.

ProCoQ10 – is an essential enzyme that diminishes with age, infection, injury and stress. ProQ10 is water soluble, and an extremely bioavailable form of CoenzymeQ10. Studies have showed this form to increase blood levels of CoQ10 **18 times** more than other ‘absorbable’ brands. This fact makes it affordable to obtain therapeutic levels in horses. CoQ10 is important in the function of the heart and other high-energy organs such as the lung and liver. 95% of all our body’s energy requirements (ATP) is converted with the aid of CoQ10.

Randy Kidd, DVM, PhD has observed and stated:

"Our world has become laden with toxins, many of which are carcinogens. Our dogs are exposed to an even higher toxic load than we are; their noses are constantly sniffing the ground, where toxins accumulate. We throw even more toxins into the mix every time we use pesticides or medications to kill internal parasites, and when we feed them foods heavy with artificial preservatives, colors, and flavors. By the time they are a few years old, our pets have been so exposed to the plethora of toxins that exist in their (and our) world, I think every holistic, long-term health maintenance protocol needs to include an entry period of detoxification"

We couldn't agree more whole-heartedly with this statement and diligently try to educate the loving pet owner in disease prevention as their main health objective.

Dr. Zamzow is a consultant for Vivo Animals. Vivo Animals provides innovative, cutting edge natural health solutions for the animal companions in our lives. www.AnimalDetox.com