

Antifreeze Poisoning

Every year, by some estimates, about 10,000 dogs and cats are victims of accidental poisoning by automobile antifreeze. A pet does not have to drink a lot of antifreeze to be poisoned. Most brands of commercial antifreeze consist of 95 percent ethylene glycol, an extremely toxic chemical. Even a few licks of this sweet-tasting liquid can be fatal to a cat or dog. (Ethylene-glycol-based antifreeze is also extremely hazardous to children. A few ounces are lethal.) For a medium sized dog, ingestion of about 2 ounces (3-4 tablespoons) is toxic. For cats, as little as 1/4 of an ounce (1-2 teaspoons) can be lethal. Antifreeze poisoning commonly occurs in spring and fall when car owners replace the old antifreeze with fresh antifreeze in their car radiators. However, poisoning can happen anytime, particularly when a car boils over or when a hose leaks, releasing the antifreeze. As mentioned above, this poisoning happens often to animals who are allowed to roam freely in their neighborhoods, but another high risk group are those dogs who are confined in garages and who may not always be provided with adequate fresh drinking water. These dogs may gain access to improperly or inadequately stored antifreeze or lick spilled or leaked antifreeze off the garage floor. If it is necessary to confine your pet(s) to your garage, make sure antifreeze containers are well secured and your animal has plenty of fresh water.



Another source of antifreeze are the decorative "snow globes" glassware. The liquid in these displays contain 2% antifreeze and are very toxic. I recently received a call of a young cat poisoned when ingesting some of the liquid from a shattered "snow globe".

Both cats and dogs are attracted to the smell and taste of ethylene glycol. Therefore, when you or a member of your household changes antifreeze in the driveway, be sure to collect all of the waste coolant and properly dispose of it. And never leave a bucket of ethylene-glycol coolant unattended - even for a moment. Also remember that your car can leak coolant at any time. If you see a puddle of greenish-colored liquid in your driveway, flush the area with plenty of water and don't delay locating and fixing the leak. Another method of quick clean-up is to spread cat litter on the spill, clean up with rags (which are bagged immediately) and then rinse. Antifreeze will biodegrade in the environment, but it takes weeks or months to do so, so removing the spill is absolutely essential.

Antifreeze poisoning occurs in two stages: In the first stage, the ethylene glycol in the antifreeze causes a drunken appearance in the animal within about 30 minutes which may continue for several hours. After passing through stage 1, the animal appears to recover. Stage 2 begins when the dog's liver begins metabolizing the ethylene glycol, changing it into more toxic substances. Within 12 to 36 hours of ingestion, these metabolites have reached such a level that the dog's kidneys stop functioning, and the animal slips into a coma.

Getting the dog to a veterinarian is critical within the first 9-12 hours following ingestion. After that length of time, the liver will have already begun metabolizing the ethylene glycol into substances that cause kidney failure and ultimately death. I have been asked the question by several people-What should be done immediately care for my pet. Should I induce vomiting or give activated charcoal to my pet? These are very short term fixes and not a cure. The faster your pet is treated by a veterinarian the better the chances of recovery. Again, this poison is extremely toxic.

Another source of help is the National Poison Control Center, 800-548-2423. This call will cost \$30.

Symptoms of antifreeze poisoning include a drunken appearance including staggering, lack of coordination, and apparent disorientation and vomiting. The animal may appear listless and depressed. Because early signs of antifreeze poisoning often mimic signs of other illness, neither you or your veterinarian may suspect antifreeze poisoning until it is too late. Fortunately, in house lab tests performed by your veterinarian can assist in the diagnosis of antifreeze toxicity.

In our practice we had a tragic incident involving two pets. One dog ingested antifreeze and then vomited the product. The other dog then licked up the vomit and also developed the toxicity. By the time the owner recognized the seriousness of the situation, it was too late and both pets died. We also had a situation involving a household of three cats. The same situation occurred. But, fortunately, the owner recognized the problem and we were able to save two of the three pets. As you can see, this is truly a horrible and tragic poison.

COMMON SUBSTANCES POISONOUS TO DOGS

Indoor & Outdoor Plants



Azalea - entire plant, Cardiotoxic. Can affect the heart, produce vomiting, drooling, diarrhea, weakness and central nervous system depression. Severe cases could lead to death from cardiovascular collapse.

Boxwood Leaves - Boxwood is a common hedge

Caladium - entire plant

Castor Bean - all parts, mostly the seeds can produce significant abdominal pain, vomiting, diarrhea and weakness, dehydration, tremors, seizures and even death.

Chinaberry Tree - berries, flowers, leaves

Cocoa Bean Mulch - see below

Cycads - can result in liver failure

Daffodil - bulbs

Dieffenbachia - entire plant

Elephant Ear - entire plant

English Ivy - berries and leaves

Fertilizer - see below

Foxglove - Cardiotoxic, can affect the heart

Holly - berries

Hyacinth - bulbs

Hydrangea - entire plant

Lily - certain species can cause kidney failure

including Easter lily, tiger lily, rubrum lily, Japanese show lily and some day lilies if ingested. Lilies rank # 1 in the most common pet poisoning statistics. Signs of toxicosis, such as vomiting, lethargy and loss of appetite, may appear within a few hours of ingestion, and will continue to worsen as damage to the kidneys progresses. If left untreated, kidney failure can develop in 36 to 72 hours.

All parts of the lily are considered toxic to cats, and consuming even small amounts can be life-threatening.

Lily of the Valley - Cardiotoxic, can affect the heart

Mistletoe - berries

Mushrooms - both toxic and NONTOXIC can cause liver failure

Oleander - entire plant, Cardiotoxic, can affect the heart and can cause irritation of the gastrointestinal tract or hypothermia

Philodendron - entire plant

Poinsettia - entire plant

Rhododendron - Cardiotoxic, can affect the heart

Rhubarb Leaves - can cause kidney failure

Sago Palm - can potentially produce vomiting, diarrhea, depression, seizures, liver failure and even death.

Wisteria - seeds

Yew - Cardiotoxic, can affect the heart



Some items in everyday life:

Antifreeze - all kinds, even the ones that claim nontoxic - they all kill, some slower than others.

Avocado - Guacamole, produce cardiac tissue damage, respiratory distress and mammary gland damage

Bread Dough - As alcohol is produced, the dough expands. Pets experience abdominal pain, bloat, vomiting, disorientation and depression.

Chocolate - Theo bromine can induce irregular heartbeat, irritate gastrointestinal tract, and trigger epileptic seizures

Cocoa, Cocoa Powder & Baking Chocolate - more intense than chocolate

Cocoa Bean Mulch - vomiting, diarrhea, tremors, seizures and death

Fertilizer - can cause severe gastric upset & gastrointestinal obstruction

Flea Control products- read the label and follow the directions (dog flea control can be lethal to felines)

Grapes - and raisins enough of them can cause kidney failure

Herbicides - read the label

Insecticides - read the label Disulfoton (see below)

Onions / Onion Power / Onion flavoring - thiosulphate in the onions can cause hemolytic anemia

Rasins and grapes - enough can cause kidney failure



Canine Heartworm Disease

What is it? Canine heartworm disease is a serious and potentially fatal disease of dogs. Long white worms, technically known as *Dirofilaria Immitis*, are the cause. Adult worms, which reach a length of 6-14 inches, live in the right side of the heart and in the adjacent large blood vessels (heartworm). A dog may have several hundred of them in its system, although the number is usually much less.

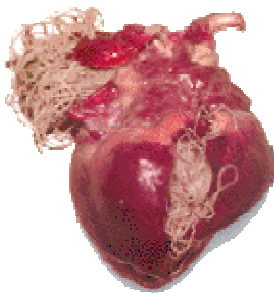
Occasionally canine heartworms are found in other animals such as foxes, wolves, cats, and ferrets. In a few instances they have been reported in people, as small nodules in the lungs. Such human cases are considered biological oddities.

What do they do?

Adult heartworms in the heart and adjacent large blood vessels cause extensive damage to some of the dog's vital organs. The lungs are the first organs affected, and just a few worms can cause a considerable amount of damage. As the disease progresses, the heart becomes enlarged and does not function normally. Later, the liver and kidneys may also be damaged. The important thing for dog owners to remember is that a great deal of damage can occur before any outward signs of heartworm disease are noticed.

Where does it come from?(illustration of heartworm cycle, thanks to Hill's Pet Foods)

Until recently canine heartworm disease was considered to be a problem only in warm climates, but in the past few years it has been found in almost all areas of the United States and Canada. Since dogs travel widely with their owners, and infected dogs can carry heartworms for several years, heartworm disease may be a problem anywhere in the nation.



Heartworm infection is transmitted by mosquitoes. When a mosquito bites an infected dog, it takes up blood which may contain microfilariae. These incubate in the mosquito for about two weeks, during which they become infective larva. Then, when the mosquito bites another dog, the infective larvae are passed into the second dog, infecting it. The infective larvae migrate through the tissues of the body for 2-3 months. They develop into several stages called L1, L2, and L3 stages. The L1 stage only lasts for 1-2 days. The L2 and L3 stages last for approximately two months. They then enter the heart where they reach adult size approximately 3 months after infecting your pet.

The mosquito is the only natural vector of transmission for canine heartworms, and about 70 species are capable of carrying the disease. As you might expect, heartworm infection is more common in areas where mosquitoes are numerous, and outdoor dogs constantly exposed to

mosquitoes are the most frequent victims.

How is it detected?

Heartworm infection may be detected by examining the dog's blood for the presence of circulating microfilariae (microscopic baby forms) or by examining the blood for antigens that are produced by the adult worms. Some dogs have adult worms in the heart but have no circulating microfilariae. To diagnose the disease in these dogs antigen tests are used. Chest x-rays are also helpful in making a diagnosis and may also give some indication of the amount of damage caused by the infection. Ultrasound is also very useful in determining the severity of infection.

Signs of heartworm disease that dog owners are most likely to notice include frequent coughing, sluggishness, rapid tiring, and labored breathing. These signs are most easily noticed in hunting and working dogs. Ascites (accumulation of fluid in the abdomen) may occur in advanced heartworm infection. When the disease reaches its critical stages, the victim is usually weak, has difficulty breathing, and may faint. At this stage, damage to vital organs is so severe that treatment is much more difficult and the possibility of complete recovery much lower.

We also know that the worm as well as the microfilariae can cause a severe vasculitis (an inflammation to the lining of the arteries and veins) adding to the sickness of an infected dog.

Can infected dogs be treated?

Most dogs can be successfully treated for heartworms if the disease is detected early. Two commonly accepted treatment regimens are available to treat the disease. An older treatment involves the use of an organic arsenical drug. This drug is carefully administered intravenously through a series of injections. This treatment does potentially have many side effects.

A newer medication used in the treatment of adult heartworm is Melarsomine dihydrochloride, "Immiticide", which is given intramuscularly into the lumbar muscles. This appears to be a much safer approach to treatment of the disease and has fewer side effects.

A few days after treatment, the worms die and are carried by the bloodstream to the lungs where they lodge in small blood vessels. There they decompose and are absorbed by the body over a period of several months. Fatalities resulting from treatment are rare among dogs that are otherwise in good health. The patient should be given a thorough physical and laboratory exam prior to treatment. These tests should include a blood count, blood chemistry analysis, and a chest x-ray as a minimum data base. Any other problems that might cause complications should be corrected before heartworm treatment begins.

Following treatment, complete rest is required to prevent lung damage from the dead and decomposing worms. Excitement and exercise should be avoided for at least a month, followed by gradual return to normal activity.

Microfilarial treatment

After all adult heartworms are eliminated, another drug must be given to rid the bloodstream of microfilariae which are not affected by the drug to kill adult heartworms. These medications are administered 3-4 week after the adulticide treatment has ended. Medications use to eliminate the microfilariae include the use of ivermectin and milbemycin oxime. Careful observation is required after an initial dose in order to treat potential systemic side effects. There have been some neurological side effects in rough coated collies and some other pure breeds at high doses of ivermectin.

Prevention

Prevention has proven to be highly successful in controlling heartworm infection. Several different types of prophylactic heartworm medication are available:

The most commonly used method of prevention is the monthly administration of products made for this purpose. These are available in tablet and chewable forms (Heartguard, Interceptor) administered monthly. A topical product (Revolution) also applied monthly. These products come in several sizes given according to the weight of the dog. This medication eliminates either the L2 and L3 stages of the microfilariae. That is why it is effective as a monthly medication, due to the length of time the larvae is in the dogs body. The medication is begun with puppies and is given throughout the life of your dog. The medication is started within a month after mosquito exposure and is continued throughout exposure and the last dose is given within one month after the end of the mosquito season. In areas where mosquitoes occur all year, the medication is given throughout the year. It is advisable to test all dogs over 7-9 months of age and to have a blood test performed every year or two depending on the incidence of the disease in your area.

A new preventative (Proheart 6- www.proheart6.com) has recently by made available. This product is an injectable administered every 6 mos. and takes away the burden of remembering to give the monthly tablets to your pet. It is only approved for dogs only and not for heartworm prevention in cats or ferrets.

Another method of prevention is administered daily. Diethylcarbamazine (D.E.C) has been use successfully as a heartworm preventative for over twenty years. The small amount of the drug is given according to the weight of the dog. It must be started at the time of mosquito exposure, continued daily throughout exposure and for two months afterwards. Its effectiveness is severely reduced if there is any interruption in the daily dosing. This particular medication is effective in only eliminating the short lived L1 larvae and consequently has a narrow time of effectiveness. It is essential that the dog be free of heartworm microfilariae before starting this medication. Severe and even fatal reactions may occur if D.E.C. is given to a dog with microfilariae before starting the D.E.C. preventative.

Outdoor dogs are most susceptible to heartworm infection. Even dogs kept indoors seldom can be completely protected from mosquitoes. Remember that infected dogs which aren't properly treated serve as a constant source of infection, making it essential to test dogs regularly for heartworm.

Taken from:

<http://www.cah.com>

