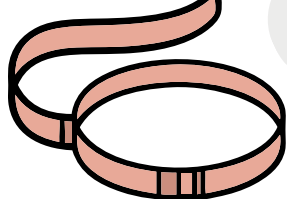




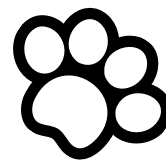
Relative Cost of Treatment

Costs vary depending on geographic location & the type of veterinary clinic, here are some general estimates:

- Physical exam = \$70-140
- Blood & urine testing = \$200-400 per day
- Abdominal ultrasound = \$300-500
- IV fluid therapy = \$150-250 per day
- Hospitalization = \$1000-2000 per day
- Emergency fee = \$200-300



Contact



Pet Poison Helpline

- 24-hour animal poison control service available throughout Canada, USA, and the Caribbean for pet owners & veterinary professionals who require assistance with treating a potentially poisoned pet
 - Website: info@petpoisonhelpline.com
 - Phone: 1-855-764-7661

WCVM Veterinary Medical Centre

- Small Animal Clinic
 - Phone: 306-966-7126
 - Address: 52 Campus Drive, Saskatoon, SK S7N 5B4

Additional Resources

Merck Manual

- <https://shorturl.at/tIkZP>

VCA Animal Hospitals

- <https://shorturl.at/7zdEV>

What should I do if my dog drinks antifreeze?

- <https://shorturl.at/ICFm5>

A Guide to Ethylene Glycol Toxicosis in Dogs & Cats

- <https://shorturl.at/eIm4K>

Antifreeze Poisoning (Ethylene Glycol Toxicosis) in Dogs

- <https://shorturl.at/RIALq>

Antifreeze Poisoning in Dogs

- <https://tinyurl.com/3rb47xrf>

Antifreeze Poisoning



Prevention

- Frequently check for vehicle radiator leaks
- Supervision of animals in areas where ethylene glycol could be present (garages & driveways)
- Careful storage & waste disposal of antifreeze containers
- Immediate clean-up of any possible spills
 - Cover spills with absorbent material (i.e. sawdust) to discourage the animal from licking any residue
- Choose propylene glycol products over ethylene glycol when possible
 - It is a less toxic alternative
 - It is also less attractive because it does not taste as sweet

Ethylene Glycol

- The toxin in antifreeze is called ethylene glycol.
- All species are susceptible to ethylene glycol poisoning but it often primarily affects dogs & cats.

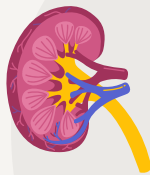
Factors that Increase Risk of Poisoning

- Widespread availability of antifreeze
- Sweet taste
- Small minimum lethal dose
- Improper storage, use and disposal of antifreeze



Pathogenesis

- Ingested ethylene glycol is metabolized by the liver & kidneys into toxic metabolites
 - Aldehydes
 - Glycolic acid & glyoxylic acid
 - Oxalic acid
 - Oxalic acid binds to calcium in & forms calcium oxalate crystals in the kidneys
- Toxic metabolites cause
 - Severe metabolic acidosis
 - Kidney damage

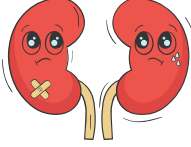


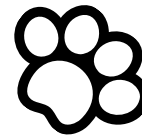
Clinical Signs

Cats & dogs 30 min to 12 h after ingestion:

- Vomiting 
- Excessive thirst & urination 
- Hypothermia (low body temperature) 
- Neurologic signs:
 - Depression
 - Stupor
 - Ataxia
- Brief recovery may occur ~12h after ingestion
 - Giving a false sense of security that they are getting better when they are not

Cats (12-24 h) and dogs (36-72h) after ingestion:

- Acute kidney failure 
 - Painful abdomen
 - Minimal to no urine production
- Fast heartbeat 
- Panting
- Gastrointestinal signs: anorexia, vomiting, diarrhea, oral ulcers, salivation
- Neurologic signs:
 - Lethargy
 - Seizures
 - Coma
 - Death
- Dehydration 



First Aid Response



- Early & rapid intervention, before kidney damage, is crucial for a favorable prognosis
 - Longer you wait to seek treatment the more likely it is for a worse outcome
- Bring your pet to the nearest veterinary clinic ASAP!
- Right after ingestion of antifreeze (up to 1-2 hours after):
 - Induce vomiting using 3% hydrogen peroxide
 - 1 teaspoon 3% hydrogen peroxide per 5lb
 - Do not exceed 3 tablespoons!
 - DO NOT induce vomiting in a dog or cat exhibiting neurologic signs

Veterinary Clinic Treatment

- IV fluid therapy
- 4-methylprazole or ethanol boluses
 - Prevents oxalate formation
- Supportive care
 - Including treatment of metabolic acidosis
 - Sodium bicarbonate
 - Dextrose
- Gastrointestinal Support

