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Chocolate Poisoning in Dogs

I've heard that chocolate is toxic to dogs? Is this true?

Yes, chocolate is toxic to dogs (and cats!). While rarely fatal, chocolate ingestion can result in significant illness. Chocolate is toxic because it contains a chemical called theobromine, as well as caffeine. Theobromine is the predominant toxin in chocolate and is very similar to caffeine. Both chemicals are also used medicinally as a diuretic, heart stimulant, blood vessel dilator, and a smooth muscle relaxant. Dogs cannot metabolize theobromine and caffeine as well as people can. This makes them more sensitive to the chemicals' effects.

How much chocolate is poisonous to a dog?

The amount of toxic theobromine varies with the type of chocolate. The darker and more bitter the chocolate, the more dangerous it is to dogs. Baking chocolate and gourmet dark chocolate are highly concentrated and contain 130–450 mg of theobromine per ounce, while common milk chocolate only contains about 44–58 mg/ounce. White chocolate barely poses any threat of chocolate poisoning with only 0.25 mg of theobromine per ounce of chocolate (that said, dogs can still get sick from all that fat and sugar, which can cause pancreatitis). To put this in perspective, a medium-sized dog weighing 50 pounds would only need to eat 1 ounce of baker's chocolate, or 9 ounces of milk chocolate, to potentially show signs of poisoning. For many dogs, ingesting small amounts of milk chocolate is not harmful.



"The amount of toxic theobromine varies with the type of chocolate."

Toxic doses of theobromine are reported to be as low as 20 mg/kg, where agitation, hyperactivity and gastrointestinal signs (such as drooling, vomiting, and diarrhea – all which may smell like chocolate) can be seen. At doses over 40 mg/kg, cardiac signs can be seen, and include a racing heart rate, high blood pressure, or even heart arrhythmias. At doses of more than 60 mg/kg, neurologic signs can be seen, including tremors, twitching, and even seizures. Fatalities have been seen at around 200 mg/kg (approximately 100 mg/lb), or when complications occur.

What are the clinical signs of chocolate poisoning?

Clinical signs depend on the amount and type of chocolate ingested. For many dogs, the most common clinical signs are vomiting and diarrhea, increased thirst, panting or restlessness, excessive urination, and a racing heart rate. In severe cases, muscle tremors, seizures, and heart failure can be seen. In older pets that eat a large amount of high quality dark or baking chocolate, sudden death from cardiac arrest may occur, especially in dogs with preexisting heart disease.

Complications (such as developing aspiration pneumonia from vomiting) can make the prognosis for chocolate poisoning worse. When in doubt, immediate treatment by your veterinarian is warranted if a poisonous amount of chocolate is ingested.

"Clinical signs of chocolate poisoning can take hours to develop and last for days."

Clinical signs of chocolate poisoning can take several hours to develop, and can last for days, due to the long half-life of theobromine. The theobromine can even be re-absorbed from the bladder, so IV fluids and frequent walks to encourage urination may be necessary. It is important to seek medical attention by calling your veterinarian or Pet Poison Helpline* as soon as you suspect that your dog has eaten chocolate.

What should I do if my dog eats chocolate?

When in doubt, contact your veterinarian or Pet Poison Helpline to see if a poisonous amount of chocolate was ingested. If a toxic amount is ingested, you should have your dog examined by a veterinarian immediately. The sooner the theobromine is removed from the body or the dog is stabilized, the better your dog's prognosis.

What is the treatment for chocolate poisoning?

Treatment depends on the amount and type of chocolate eaten. If treated early, removal of the chocolate from the stomach by administering medications to induce vomiting and administration of activated charcoal to block absorption of theobromine into the body may be all that is necessary. Activated charcoal may be administered every four to six hours for the first twenty-four hours to reduce the continued resorption and recirculation of theobromine.

It is very common to provide supportive treatments such as intravenous fluid therapy to help stabilize your dog and promote theobromine excretion. All dogs ingesting chocolate should be closely monitored for any signs of agitation, vomiting, diarrhea, nervousness, irregular heart rhythm, and high blood pressure. Often, medications to slow the heart rate (e.g., beta-blockers) may be necessary to treat the elevated heart rate and arrhythmia.

I saw a treat made for dogs that contained chocolate. Isn't that dangerous?

Many gourmet dog treats use carob as a chocolate substitute.

"Carob looks similar to chocolate and the two are often confused."

Carob looks similar to chocolate and the two are often confused. Some specialty dog bakeries will use a small amount of milk chocolate in their treats. Since the amount of theobromine is typically low, this may be safe for most dogs. However, most veterinarians recommend that you avoid giving your dog chocolate in any form. Remember, ingredients in food are listed in order of concentration in the product, so hopefully carob is lower on the list!

*Pet Poison Helpline, is an animal poison control service based out of Minneapolis available 24 hours, seven days a week for pet owners and veterinary professionals who require assistance treating a potentially poisoned pet. Pet Poison Helpline is available in North America by calling 800-213-6680. Additional information can be found online at www.petpoisonhelpline.com.



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