

## This Human Food Favorite Poses a Major Dilemma for Dogs

Even tiny amounts can cause a major reaction, especially if it's this worst of the worst variety. Clinical signs may not occur for several hours, but cardiac failure or death can occur fairly rapidly, up to a few days after ingestion. And this odd, related garden threat can also be fatally toxic.

Reviewed by Dr. Becker

### STORY AT-A-GLANCE

- Chocolate contains two stimulants, caffeine and theobromine, that are toxic for pets. Dogs are more often the victims of chocolate poisoning than cats
- The darker the chocolate, the more theobromine it contains. Baker's chocolate, semisweet chocolate, cocoa powder and gourmet dark chocolates are common culprits
- Symptoms of chocolate toxicity usually appear within a few hours of ingestion, and include vomiting, diarrhea and elevations in body temperature and heart rate
- The goals of treatment are to prevent further absorption of theobromine, and to provide supportive care to address the patient's symptoms
- Cocoa bean mulch in your garden can also poison your pet, so it's a good idea to choose a pet-friendly alternative such as a cedar-based product

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According to veterinary journal dvm360, here's the extent of what most pet parents know about the dangers of chocolate: Chocolate + Dog = Big trouble. This is actually a good, if simplistic way to frame the issue.

Dogs are much more often the victims of chocolate poisoning than cats, because dogs like sweet-tasting things, and they're indiscriminate eaters. They make up 95% of chocolate emergency calls according to the Pet Poison Helpline, and in some dogs, even the wrappers from candy can result in secondary obstruction in the stomach or intestines.<sup>1</sup> But why, exactly, is a favorite human treat such a problem for furry family members?

### Chocolate Poisoning Primer

Chocolate is made from the roasted seeds of the *Theobroma cacao* or cocoa tree. The seeds have certain properties that can be toxic for dogs (and cats), including caffeine and theobromine, which are naturally occurring stimulants. Both theobromine and caffeine stimulate the central nervous system and heart muscle. They also relax smooth muscles, especially the bronchial muscles, and increase production of urine by the kidneys.

Studies show dogs are especially sensitive to theobromine compared to other domestic animals. This is because they metabolize the substance very slowly, which means it stays in the bloodstream for an unusually long time. This may also be true of cats, but because kitties don't commonly overdose on chocolate, there isn't a lot of research on feline chocolate toxicosis.

Even small amounts of chocolate can cause adverse reactions in pets, and the darker the chocolate, the more theobromine it contains. Baker's chocolate, semisweet chocolate, cocoa powder and gourmet dark chocolates are more dangerous than milk chocolate.

Other sources include chewable flavored multivitamins, baked goods, chocolate-covered espresso beans and cocoa bean mulch. White chocolate has very little theobromine and won't cause poisoning in pets. Though not commonly seen, the worst of the worst is dry cocoa powder, which contains the highest amount of theobromine per ounce — 800 milligrams per ounce versus Baker's chocolate at 450 milligrams per ounce.

## How Much Is Too Much?

"It's the dose that makes the poison," according to the Pet Poison Helpline. For example, a few M&Ms or a bite of a chocolate chip cookie are unlikely to cause a problem for your dog. Standard guidelines for chocolate poisoning in dogs include:<sup>2</sup>

- For milk chocolate, any ingestion of more than 0.5 ounces per pound of body weight may put dogs at risk for chocolate poisoning.
- Ingestion of more than 0.13 ounces per pound of dark or semisweet chocolate may cause poisoning.
- Almost all ingestions of baker's chocolate can result in poisoning and are considered emergencies.
- Young animals, geriatric animals and animals with an underlying disease must be treated more conservatively as they're more at risk for poisoning than healthy adult animals.
- Due to the large amount of fat in chocolate, some pets may develop pancreatitis (inflammation of the pancreas) after eating chocolate or baked goods containing chocolate.

## Signs to Watch For

Clinical signs of chocolate poisoning may not appear for several hours after ingestion. However, the onset of symptoms usually occurs within four to five hours, and continues for 12 to 36 hours. The signs of chocolate poisoning usually progress rapidly. Death from respiratory and/or cardiac failure can occur up to several days after the chocolate was consumed. Symptoms of chocolate poisoning can include:

- Vomiting
- Increased reflex responses
- Increased heart rate
- Diarrhea
- Rigid muscles
- Drop in blood pressure
- Elevated body temperature

- Rapid breathing
- Seizures

In very serious cases, there can be weakness, coma, cardiac failure and death.

## **Diagnosing and Treating Chocolate Toxicity in Pets**

Your veterinarian will perform a physical exam and order a chemical blood profile, an electrolyte panel and a urinalysis — all of which can help determine if there is a chocolate or caffeine overdose. Your pet's blood can also be tested for theobromine concentrations, and an electrocardiogram (ECG or EKG) should be performed to check for **heart rhythm abnormalities**.

If you suspect your pet has ingested chocolate, you should get him to a veterinarian or emergency animal hospital immediately. En route, try to keep him calm and quiet to prevent symptoms from escalating too quickly. Your veterinarian or emergency clinic staff will probably induce vomiting right away if the chocolate was recently ingested. Activated charcoal may also be given to prevent or limit absorption into the bloodstream.

The goal of treatment beyond preventing further absorption of theobromine is supportive in nature. Necessary medications and other care will be given depending on the patient's symptoms, which may include seizures, respiratory distress and/or heart abnormalities.

Intravenous (IV) fluids can speed up excretion of theobromine in urine. In addition, it will keep your pet hydrated through the crisis. Since theobromine can be reabsorbed into the bloodstream across the bladder wall, a urinary catheter or frequent walks are needed to keep the bladder empty.

Even with immediate veterinary intervention, it can take pets several days to recover from chocolate poisoning. And sadly, not all of them survive, which is why it's so important to keep all forms of chocolate and products containing chocolate carefully stored out of reach of pets.

## **A Toxic Chocolate That Could Be Hiding in Your Garden**

While most dog parents are aware of the dangers of chocolate, many don't realize that cocoa bean mulch used for gardening can be fatally toxic as well. Cocoa bean mulch can be purchased at most garden centers. It has a sweet smell, which is probably what attracts dogs. The mulch is made from the shells of cocoa beans, which contain the same stimulant substances found in chocolate: theobromine and caffeine.

Symptoms of cocoa bean mulch poisoning in dogs include abdominal pain, vomiting, diarrhea, rapid heart rate, muscle tremors, seizures and ultimately, death. The risk to your dog depends on her size, how much mulch she swallowed and the level of theobromine in the mulch, which varies widely by brand. Puppies and small-breed dogs are at highest risk.

As an example, if your 50-pound dog eats 2 ounces of cocoa bean mulch, he'll probably experience some GI upset such as abdominal pain, vomiting or diarrhea. If he eats 4 ounces, his heart rate will speed up. At 5.5 ounces, he could develop seizures, and ingestion of 9 ounces or more can prove fatal.

If you know or suspect your dog has eaten cocoa bean mulch, take her to your vet's office or the nearest emergency animal clinic immediately. Once there, she will likely receive doses of activated charcoal, IV support, tremor control and cardiac monitoring.

Treatment will vary depending on how much mulch she ingested, when it was eaten and her symptoms. Fortunately, most dogs make a complete recovery with appropriate treatment. Cocoa bean mulch is also frequently treated with pesticides and mycotoxin-producing mold, so skip this type of mulch altogether. Opt instead for a completely safe mulch like a cedar-based product.

## Sources and References

[dvm360, January 8, 2018 \(Archived\)](#).

<sup>1,2</sup> [Pet Poison Helpline](#)

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