

# Chocolate Toxicity

By Dr. Karen Becker

Hi, this is Dr. Karen Becker. Today we're going to discuss chocolate toxicosis. 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.

Dogs are more often the victims of chocolate poisoning than cats, because dogs like sweet-tasting things, and they are indiscriminate eaters to begin with. Studies have shown that dogs are especially sensitive to theobromine compared to other domestic animals. This is because dogs metabolize the substance very slowly, which means it stays in their 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. Baker's chocolate and dark chocolate are the most common culprits, but other sources include chewable, flavored multivitamins, baked goods, chocolate-covered espresso beans, and cocoa bean mulch. 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.

## Symptoms

Clinical signs of chocolate poisoning may not appear for several hours after ingestion. However, the onset of symptoms usually occurs within 4 to 5 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.

A dose of 250 to 500 milligrams of theobromine per kilogram of bodyweight is considered a potentially lethal dose for dogs; the lethal dose in cats ranges from about 200 milligrams per kilogram of bodyweight and above.

Symptoms can include vomiting, diarrhea, elevated body temperature, increased reflex responses, rigid muscles, rapid breathing, increased heart rate, a drop in blood pressure, seizures – and in very advanced cases – heart failure, weakness, as well as obviously death.

## Diagnosis and Treatment

Your veterinarian will want to perform a physical exam and order a chemical blood profile 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 or her to a veterinarian. En route, try to keep your pet calm and quiet to prevent symptoms from escalating too quickly. At your vet or the

emergency animal hospital, they 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 care 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 this crisis.

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 stashed away in households with pets.

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