Grape, Raisin, and Currant Poisoning in Dogs

Recently, veterinarians discovered that grapes, raisins, and currants (fruits from Vitis species) can cause kidney failure in dogs. It is unclear whether this is a new problem, or if the toxic nature of grapes and raisins became recognized after the establishment of a computerized animal toxicity database about 25 years ago. Whatever the case, the number of identified cases of illness or death in dogs after they have eaten raisins or grapes is on the rise.

What types of grapes and raisins are toxic to dogs?

Poisoning has occurred in dogs following ingestion of seedless or seeded grape varieties, commercial or homegrown fruits, red or green grapes/raisins, organic or non-organic fruits, and grape pressings from wineries. Foods containing grapes, raisins, and currants (such as raisin bran cereal, trail mix, granola mix, baked goods) are all potential sources of poison.

What is the toxic dose?

Unfortunately, there is no well-established toxic dose for any of these fruits but two principles seem to prevail: 1) Dogs are more likely to become poisoned if they ingest large amounts of fruit and, 2) there is significant individual sensitivity amongst dogs. Some dogs appear to tolerate small doses of the fruit without consequence while other dogs may develop poisoning after the ingestion of just a few grapes or raisins. There is no way to predict which dogs may be more sensitive.

Why are raisins, grapes, and currants toxic?

Currently, it is not known why these fruits are toxic. Some researchers suspect that a mycotoxin (a toxic substance produced by a fungus or mold) may be the cause. Some suspect a salicylate (aspirin-like) drug may be naturally found in the grape, resulting in decreased blood flow to the kidneys. However, so far no toxic agent has been identified. Since it is currently unknown why these fruits are toxic, any exposure should be a cause for concern.

What should I do if my dog eats grapes or raisins?

If you suspect that your pet has eaten any of these fruits, please contact your veterinarian or Pet Poison Helpline, an animal poison control service, immediately. Do not waste any time. Since there are still many unknowns associated with this poisoning, it is better not to take any chances when it comes to your dog’s health. As with any toxin, the sooner the poisoning is diagnosed and treated, the less dangerous for your pet, and the less expensive therapy will be for you.
What are the symptoms of grape or raisin toxicity?

The most common early symptom of grape or raisin toxicity is vomiting, which is generally seen within 24 hours following ingestion. Lack of appetite, lethargy, and possibly diarrhea can also be seen within the next 12–24 hours. More severe signs are not seen for 24–48 hours after ingestion – often after acute kidney failure has already begun. Signs of acute kidney failure include nausea, lack of appetite, vomiting, uremic breath, diarrhea, abdominal pain, excessive thirst, and excessive urination.

As the poisoning progresses, the kidneys may shut down and the dog will not produce any urine. Following this, the dog's blood pressure will increase dramatically and the dog will usually lapse into a coma. Once the kidneys have shut down and urine output has dropped, the prognosis is poor.

How is grape/raisin poisoning diagnosed?

Unfortunately, the symptoms of grape or raisin poisoning are non–specific and are similar to kidney failure from many other causes. Your veterinarian will base a presumptive diagnosis of this poisoning on a history of eating grapes, raisins, currants, or the presence of pieces of grapes or raisins in the dog's vomit.

Your veterinarian will also recommend diagnostic tests such as a complete blood count (CBC), a serum biochemistry profile, and a urinalysis to assess the amount of damage to the kidneys. The test results will help determine the dog's likelihood of recovery.

Is there an antidote?

No.

How is this poisoning treated?

The goal of treatment is to block absorption of the toxins and prevent or minimize damage to the kidneys.

The best treatment is to decontaminate a patient right away via the induction of vomiting and administration of activated charcoal. This helps to prevent absorption of the toxin from the stomach or intestines. As grapes and raisins stay in the stomach for a prolonged period of time, inducing vomiting is of the utmost importance (even up to 4–6 hours after ingestion). Following decontamination, more treatment might be necessary including aggressive intravenous fluids to flush any absorbed toxins out of the body as quickly as possible and to help maintain kidney function. Drugs to control nausea or vomiting, to help maintain blood flow to the kidneys, and to control blood pressure will be administered as indicated.

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Ideally, dogs should be hospitalized on intravenous fluids for 24 to 48 hours following ingestion. Affected animals may need to be hospitalized for 2–7 days. During the course of treatment, your veterinarian will monitor the patient's kidney values daily to assess the response to treatment and determine whether the treatment needs to become more aggressive. Blood work should also be repeated 2–3 days after going home; this is to make sure the kidney blood values have not increased.

**What is the prognosis following poisoning from grapes or raisins?**

Prognosis depends on many factors, including how severe the poisoning was, how soon the patient was decontaminated, whether or not the patient has already developed kidney failure, how soon treatment was initiated, and whether the clinical signs and kidney values improved once treatment was started.

If a dog only ate a few grapes or raisins (depending on the size of the patient) and received immediate treatment, the prognosis is excellent. If the kidneys are damaged and no urine is produced, the prognosis is poor and fatality is likely. The kidneys have very little capacity to regenerate or repair themselves so once they are damaged, they will not function as well as they did before the episode. When in doubt, seek treatment right away by contacting your veterinarian or Pet Poison Helpline for advice. Your veterinarian will estimate the prognosis for your dog based on symptoms, individual situation, and response to treatment.

**How can I prevent this problem?**

Keep all grapes, raisins, currants, or foods containing these fruits, out of reach of your pets. Do not share any food that may contain grapes or raisins with your dog, and especially do not use grapes as treats for your dog. Some misinformed dog trainers still recommend this.

**What other common foods are toxic to dogs?**

Onions, garlic, alcohol, chocolate, cocoa, macadamia nuts, fattening foods, and foods containing the sweetener xylitol can also be fatal.

**Are other animals at risk?**

So far, grape and raisin poisoning has only been identified as a problem in dogs. That said, there have been anecdotal reports of cats and ferrets being potentially affected. Since there are still many unknowns associated with this poisoning, it would be prudent to avoid giving ANY grapes and raisins to your pet dog or any other pet.

*Pet Poison Helpline, is an animal poison control service available 24 hours, seven days a week for pet owners and veterinary professionals who require assistance treating a potentially poisoned pet – including birds! Pet Poison Helpline is available in North America by calling 800–213–6680. Additional information can be found online at www.petpoisonhelpline.com. Pet Poison Helpline is not directly affiliated with LifeLearn.

This client information sheet is based on material written by: Ahna Brutlag, DVM, MS, DABT, DABVT, Associate Director of Veterinary Services, Pet Poison Helpline

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