

## RAISINS & GRAPES Update

### Based on report provided by VMRCVM Vet Notes

Animal Poison Control Center has documented multiple cases of grape and raisin poisoning in dogs within the last couple of years. Presumably, this has occurred in the past but attributed to other causes.

### What Kind of Grapes & Raisins?

The source of the problem has been varied. Grapes of **all** varieties and growing conditions (*including* homegrown) have been implicated. Raisins are usually made from white seedless grapes, but **all raisins of any source should be considered kidney toxic** (chocolate covered raisins as well).

### Why?

The toxic principle is unknown. Grapes contain low amounts of tannins compared to acorns, a known kidney toxicant in large animals. Grapes lack significant amounts of Vitamin D, another known kidney toxicant. It is unlikely pesticide residue is involved due to the wide variety of grape types involved. So far the majority of toxicosis reports have been in dogs. However, feeding grapes or raisins to cats and ferrets should also be discouraged, as poisonings have been reported in these species as well.

### How Many Would Poison Your Dog?

The minimum toxic dose is approximately 0.3 oz/kg body weight. This would correspond to about 2 grapes per kg body weight, or roughly 1 grape per pound of body weight.

15 lb dog = 12-14 grapes could be deadly

25 lb. dog = 23 grapes could be deadly

50 lb. dog = 50+ grapes could be deadly

75 lb. dog = 75 grapes could be deadly

**Raisins**, having lost their water content **are considered more toxic** at 6 raisins per kg of body weight, or 2-3 raisins per pound of body weight. Think how many raisins are in ONE small snack pack of raisins – maybe enough to kill your dog.

15 lb. dog = 30-45 raisins could be deadly

25 lb. dog = 50-75 raisins could be deadly

50 lb. dog = 100-150 raisins could be deadly

75 lb. dog = 150-225 raisins could be deadly

### What are the symptoms?

Symptoms appear 6-24 hours after the dog eats raisins or grapes (average is 12 hours). Initially, symptoms are gastro-intestinal signs, followed by kidney problems.

Vomiting is usually the primary sign, with diarrhea, depression/lethargy, anorexia, colic, dehydration and sharply decreased urine output. The course of the toxicosis is anywhere from 3 days to 3 weeks. Dogs with kidney problems have a guarded to poor prognosis.

Diagnosis is based on history of recent exposure and clinical signs. On bloodwork, the kidney values are increased. Typically BUN, creatinine, phosphorus and potassium are elevated (sometimes serum calcium as well). The urine sediment will have hyaline casts and the urine specific gravity will be either hyposthenuric or isosthenuric (diluted to the concentration of water of less concentrated than water) at SG 1.006 to 1.010.

### Treatment

**If the raisins or grapes have been ingested within 2-3 hours, vomiting should be induced followed by activated charcoal to limit further absorption.** Treatment is based on preventing further absorption if appropriate and maintaining urine output & electrolyte balance. The vet may also give an osmotic cathartic (to speed up GI passage of toxin without absorption). The animal should receive an isotonic saline solution IV at twice maintenance rates for 48 hours. Anti-nausea medication, diuretics and peritoneal dialysis may be needed in some cases.