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## **POISON PREVENTION MONTH** **Raises Awareness Of Toxin Concerns For Pet Caregivers**

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**W**hile everyone is waiting to see how their March Madness bracket turns out, there is another important event occurring in March that veterinary professionals and the pet loving community should take note of. March is Poison Prevention Month and the experts at Pet Poison Helpline love to take this opportunity to educate the public on various toxins you should be mindful of with pets as well as what steps caregivers can take to minimize the risk of their pets being exposed to something potentially toxic. **As the saying goes in toxicology, the dose makes the poison, and that can't be truer for our pets.**

While a dog or cat may ingest something that could potentially harm them, there is typically a minimal amount needed to be consumed before an issue would be expected. In an ideal world, pets would automatically have a sixth sense and know what to avoid or caregivers would always be around to keep their pets out of trouble. Unfortunately, neither of these are realistic, so educating caregivers on ways to help keep their pets safe can minimize the risk of a pet having an unfortunate interaction with a toxic substance. **Below are tips you can share with your clients to help them keep their pets safe.**

- Always keep human medications and supplements out of reach of pets. This includes over the counter and prescription medications as well as seemingly benign supplements. Animals do not always metabolize medications in the same manner and many human medications have an extremely narrow margin of safety in pets. Over the counter supplements may contain flavor enhancers, such as xylitol, or contain ingredients such as alpha lipoic acid or caffeine, all of which have a narrow margin of safety in pets. Animals also require varying amounts of essential nutrients such as vitamin D3 compared to humans, and consuming large quantities of formulations intended for a human can have fatal consequences.

- o Remember that pets may jump up on tables and countertops, so keeping these products high out of reach and ideally behind a door is ideal.

- **Never leave medication sitting on a nightstand, low table, or kitchen table.** It doesn't take much time for a quick cat or dog to decide they want a taste of your medication and low areas are easy access for pets. If you mix your medication in a flavored drink or food, that provides more of an invitation for your pet to take a taste. Medications should only be mixed with food and drinks when necessary and consumed right away.

- **Take medications and supplements in a separate room away from your pet.** Having a caregiver drop their medication is stressful enough. When the family pet darts in and swallows whatever was dropped can equal a trip to the veterinarian. Certain medications like baclofen fall into our one pill can kill category, so ensuring pets are far away when medications are taken is advised.

- o Pet caregivers who use pill organizers should also keep pets in a different room when it is time to fill the organizer to avoid ingestion of any spilled medication.

- **Choose the use of rodenticides carefully.** The three main types of ingredients for rodenticides, long-acting anticoagulants, bromethalin, and cholecalciferol, have varying margins of safety and very different consequences. Rodenticides made with corn cellulose, however, do not cause harmful effect if ingested by a pet and are safer options.

- o Live traps are safer options for a pet and should be kept in an area that doesn't have a risk of being found by a curious pet.

- **Baby and toddler-proof the home!** The same concepts for keeping a home safe for infants and toddlers apply for keeping a home safe for pets. Consider latches on cabinet and pantry doors, keep medications, supplements, cleaning products, and other chemicals up and out of reach. Avoid using rodenticides and other pest control products around pets whenever possible.
- **Determine if a plant/flower is a potential danger to pets before bringing them into a pet's environment.** Renal toxic lilies are a common addition to fresh cut bouquets and outside landscaping. These include Asiatic, Oriental, Stargazer, Roselily, Tiger, Daylily, and Easter lilies, to name a few. Not all plants with lily in the name are renal toxic to cats, however, identifying which plants are a concern can help caregivers avoid having them in their home. Waiting to discover that a plant is toxic after the pet has already ingested the plant can result in a medical emergency for the pet.



**Lilies are such an important topic in veterinary toxicology, we've dedicated an entire section on lilies and pets. The following information helps to break down some of the differences with many plants that share the lily name.**

## Lilies

**Alissa Gallagher, Associate Veterinarian, Clinical Toxicology**

There are many plants commonly referred to as lilies, but they do not all contain the same toxins. True lilies, *Lilium* spp., and *Hemerocallis* spp. cause nephrotoxicity. Lily imposters are those that do not cause nephrotoxicity but have lily in the common name such as Peruvian lilies (*Alstroemeria* spp.), calla lilies, peace lilies, lily of the valley, and amaryllis lilies. It is important to obtain an identification along with the scientific name, if possible, as different plants may have the same or similar sounding common names. This allows the highest likelihood of determining the correct concern and developing an appropriate treatment plan.

**Asiatic lilies, Easter lilies, roselilies, stargazer lilies, and other true lilies (*Lilium* spp.) and daylilies (*Hemerocallis* spp.) contain a toxin which causes nephrotoxicity in cats and GI signs in dogs. The water-soluble toxin is unknown but is present in all parts of the plants (petals, leaves, stems, and pollen).** In cats, GI signs and lethargy develop within 12 hours and acute kidney injury within 24-48 but may potentially be delayed up to 96 hours after ingestion. Rarely, pancreatitis and seizures have also been reported. Clinical signs in later phases include lethargy, vomiting, and anorexia. Diagnosis is made on witnessed or suspected

exposure to a renal toxic lily. Diagnostics include blood work and urinalysis. Treatment consists of decontamination, IV fluids, and supportive care for GI signs. *If exposure or ingestion to these plants is suspected, cats need veterinary care as soon as possible as these plants are highly toxic and can cause chronic, irreversible kidney damage or be fatal.* Prognosis is excellent if treated early and guarded to poor in patients that present once kidney injury is present or have a delay in treatment.

**Peruvian lilies** (*Alstroemeria* spp.) are commonly found in bouquets and often in bouquets that contain renal toxic lilies. These may cause GI upset in dogs and cats, but no systemic poisoning is expected.

**Calla lilies** (*Zantedeschia* spp.) and peace lilies (*Spathiphyllum* spp.) contain insoluble calcium oxalate crystals. Insoluble calcium oxalate crystals when ingested in both dogs and cats, cause oral and esophageal irritation and result in signs such as hypersalivating, oral pain, swelling, vomiting, change in voice, and possible airway compromise if severe swelling is present. If ocular exposure occurs, photophobia, eye pain, blepharospasm, and periocular swelling are expected. Treatment includes decontamination, analgesia, GI and hydration support, and supportive and symptomatic care as needed for ocular or respiratory changes. Prognosis is almost always excellent; however, rarely death can occur from respiratory compromise and CNS stimulation occur.

**Lily of the valley** (*Convallaria majalis*) and impala lilies (*Adenium obesum*) contain cardiac glycosides. Ingestion of a small amount of plant material may result in severe clinical signs. Clinical signs include GI upset (typically seen first but not always) and weakness, followed by various types of cardiac arrhythmias that may be fatal. Bradyarrhythmias are seen more commonly than tachyarrhythmias and AV block. A recent meal delays and decreases absorption of cardiac glycosides and renal dysfunction may slow elimination due to renal excretion of toxins. Treatment consists of decontamination, ECG and blood work monitoring, and supportive and symptomatic care for hyperkalemia or arrhythmias as needed. Prognosis is guarded due to potential for severe cardiac effects.

**Amaryllis lilies** (*Hippeastrum* spp.), Amazon lilies (*Eucharis grandiflora*), blood lilies (*Scadoxus* spp.), and fire lilies (*Clivia miniata*) are in the *Narcissus* group. These plants contain two toxins, phenanthridine alkaloids and insoluble calcium oxalate crystals. The highest concentration of these toxins are in the bulbs. Phenanthridine alkaloids are found in all parts of the plants and are strong GI irritants, causing vomiting and diarrhea (which may be severe and/or contain blood), which occurs with a rapid onset. Ingestions of large quantities of bulbs may result in arrhythmias, respiratory depression, dyspnea, CNS signs and hepatotoxicity. The insoluble crystals are only found in the bulbs and can cause the same clinical signs as described above for calla and peace lilies. Treatment varies depending on severity of clinical signs and quantity/part of plant ingested but may include decontamination, GI and hydration support, blood work monitoring, and other supportive and symptomatic care based on clinical signs present. Generally, the prognosis is good but may require aggressive supportive care.