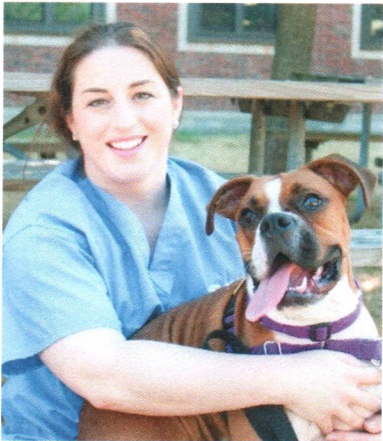


## Lily Toxicity: The Potentially Fatal Danger to Cats



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To play off the famous words of William Shakespeare, “What’s in a name? That which we call a lily, by any other name would it be less toxic?” Many flowers are given the generic classification of lily. However, there are only two specific species, *Lilium spp* and *Heimerocallis spp*, which are fatally toxic to cats. The other species of lilies either cause mild toxicities or are non-toxic. In this article we will focus on True Lilies and Day Lilies, as these are the types of lilies which can lead to fatal kidney failure if ingested (or even if the pollen is inhaled) by cats and at the end we will briefly touch on the other types of lilies.

### True Lilies (*Lilium spp*) and Day Lily (*Heimerocallis spp*) Toxicity

True Lilies, which include the **Tiger**, **Stargazer**, **Easter**, and **Oriental** varieties, and Day Lilies are highly toxic to cats. Every part of the plant, even the water contained in the vase, is toxic if ingested and only a small amount can be fatal. While it is not fully understood why, it is believed that when cats digest lilies their bodies create a toxic metabolite which results in severe kidney injury. This is why cats are the only animal susceptible to life-threatening lily toxicity. Dogs are known to develop gastrointestinal upset following ingestion of these flowers, but no other species has been found to be affected by these plants.

### Symptoms

The effects of lily toxicity are rapid. Within 1-3 hours of ingestion, cats become nauseous leading to a decreased appetite, drooling and vomiting as well as display signs of depression and lethargy. Vomiting is typically self-limiting and resolves within 2-6 hours, but don’t be fooled into thinking Fluffy is getting better. Within 12-30 hours your cat will develop excessive thirst and urinations as the kidney damage progresses. This places cats at risk for severe dehydration, which further compounds the effects of the kidney damage, and within 24-48 hours the kidneys may completely shut down and your cat will no longer be able to produce and void urine (i.e. anuric renal failure). As the kidneys shut

### The Most Dangerous Lilies for Cats

#### True Lilies (*Lilium spp*)

- Easter
- Tiger
- Stargazer
- Oriental

#### Day Lily (*Heimerocallis spp*)





down, metabolic waste products build up in the body causing vomiting to restart as well as the development of profound weakness typically seen within 30-72 hours post ingestion. Within 3-7 days of ingestion, as symptoms progressively become worse, death will occur.

### What to Do: Prevention and Treatment

So how do we protect our cats from this awful fate? The best and most effective way is to prevent exposure to True Lilies and Day Lilies by not bringing these flowers into our homes. But what happens if we didn't realize the lovely bouquet of flowers our aunt sent us for the holidays contained lilies? And, what should we do if we come home to find our furry friend covered in pollen or chewing on the plant?

- **Clean your pet's face:** First, clean your pet's face with warm water and try to remove as much pollen as possible.
- **Bring your cat and the flower to a veterinarian:** Second, bring your pet and the flower to your primary care veterinarian or your local veterinary emergency clinic for further decontamination through the induction of vomiting and administration of activated charcoal.
- **Treatment:** Once decontamination is complete, treatment focuses on protecting and monitoring the kidneys during the 48-72 hour period it takes to clear the toxin from the body. Thus, admission to the hospital for aggressive IV fluid therapy along with urine testing and serial blood work to monitor kidney function is strongly advised.

### Hemodialysis

An alternative treatment course during the initial phase of toxicity, prior to the development of severe kidney injury, is hemodialysis. Hemodialysis used to be reserved for cats already suffering from late stage lily toxicosis as it was the only successful treatment available for these critically ill cats. In this manner, hemodialysis assumes the role of kidney function while allowing the kidney to recover from the toxicity. However, more recently, hemodialysis has been shown to successfully treat cats immediately after lily exposure by clearing the toxic metabolite from the blood and thereby reducing or even preventing the toxic effects on the kidneys. Thus, immediate use of hemodialysis would be the ideal course of action in treatment of cats exposed to lilies. Angell Animal Medical Center is now pleased to be able to offer hemodialysis to our veterinary patients. In the unfortunate event of lily exposure, our medical team may consider this therapy option to provide the best possible outcome.

If lily exposure is caught early and immediate medical intervention is sought, prognosis for a full recovery with no long term kidney damage is excellent. However, if the toxicity goes undiagnosed and untreated for several days, the chances for a successful outcome become unlikely.

### Other Types of Lily Toxicity:

There are many flowers that contain the word "lily" in their name, but are not true lilies. Some of these flowers, like the Peruvian Lily, are non-toxic, while other lilies cause toxicity to other parts of the body. For instance, Lily of the Valley contains the toxin called cardiac glycoside which results in weakness, high or low heart rates, abnormal heart rhythm and gastrointestinal signs. This specific flower is toxic to both dogs and cats. Another example is the Calla Lily and Peace Lily which contain calcium oxalate crystals which are released from the plant when chewed or ingested, resulting in an intense burning sensation of the oral cavity and gastrointestinal tract. These plants affect dogs and cats equally and are treated by dissolving the crystals with dairy products.



Photo Gallery:

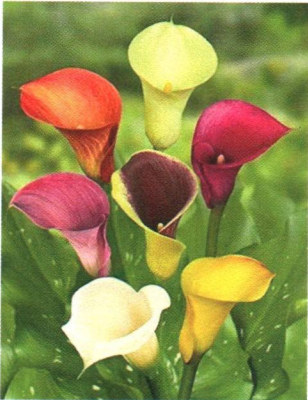
Easter Lily, Stargazer Lily, Tiger Lily, and Day Lily –



Lily of the Valley –



Calla Lily –



Peace Lily –



Peruvian Lily –

