



Lily Toxicity

By Lauren Baker, DVM
angell.org/emergency
emergency@angell.org
617-522-7282 (Boston)
781-902-8400 (Waltham)



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One of the joys of spring is the return of flowers after a long winter. Easter lilies and lilies of other species are common in seasonal floral arrangements. The Easter lily is a beautiful trumpet-shaped flower with waxy white petals and a distinctive scent. What a lot of florists and pet owners don't know is that **ingestion of lilies is often fatal for cats**. Unfortunately, these bouquets rarely come with a warning label about the dangers to cats. If you have lilies in the house, don't assume your cat will leave them alone. We likely will never know what motivates cats to eat things they should not, but boredom, curiosity and interesting texture or flavor likely contribute.

Between 1989 and 1990, a review of the National Animal Poison Control Center data showed a correlation between consumption of Easter lilies (*Lilium longiflorum*) and acute kidney failure in cats, but not dogs. Since that time, additional reports have implicated **Tiger Lily, Rubrum Lily, Stargazer Lily, Red or Wood Lily, Asiatic Lily, Japanese Show Lily and other Asian hybrid lilies (*Lilium* hybrids) and day lilies (*Hemerocallis* species)**. Current data indicate that any *Lilium* species or *Hemerocallis* species should be considered potentially toxic to cats. These groups include potentially hundreds of lily species and countless hybrids. These may be found in commercial floral or bridal arrangements or growing outdoors. Some plants commonly called lilies are not actual members of the *Lilium* or *Hemerocallis* genera; Calla Lilies (*Zantedeschia* spp) and Peace Lilies (*Spathiphyllum* spp) belong to a different classification. Calla and Peace Lilies most frequently cause irritation to the mouth and GI tract. In large quantities it is theoretically possible for Calla or Peace lilies to cause kidney failure, but reports of ingestion describe gastrointestinal irritation. Lily of the Valley (*Convallaria majalis*) belongs to the same family (different genus) as Easter lilies, but it causes heart arrhythmias instead of kidney failure.



Cats appear to be the only common pets to be affected by *Lilium* and *Hemerocallis* species. No reports of toxicity for rats or rabbits have been listed. Dogs can get a mildly upset stomach if they eat large quantities but have not been reported to develop kidney problems. Cats can be severely affected by ingestion of any amount of the vegetative parts (leaves, stem, flowers) of the plant. The root has not officially been reported to be

toxic. Acute kidney failure occurs secondary to death of some of the cells that make up the nephron, which are the microscopic filters of the kidney.

If your cat has eaten lilies, clinical signs are likely to develop rapidly. The initial signs you may notice within 2 hours of ingestion are vomiting, refusal to eat and lethargy due to stomach irritation from the plant. The initial symptoms may subside, but then cats will become symptomatic again within 24-96 hours as kidney failure develops. Later signs can include increased thirst and urination, vomiting, depression, dehydration, oral ulcers and halitosis, hypothermia, increased respiration rate and slowed heart rate.

Aggressive treatment within 6 hours of ingestion can prevent the development of kidney failure. Treatment includes decontamination (which can include activated charcoal and induction of vomiting, though induction of vomiting in cats can be very difficult) followed by intravenous fluids for at least 48 hours. If treatment is delayed for longer than 18 hours, kidney failure will develop. If not treated, death will occur within 3-7 days. Treatment after kidney failure develops is mostly supportive as there is no specific medication that will heal the kidneys. Treatment is focused on trying to reduce the accumulation of waste products in the blood that are normally excreted into the urine by the kidneys. Often intravenous fluids alone are not sufficient to “flush” the toxins out of the blood and dialysis is required.

Prognosis for cats who have ingested lilies depends on time until treatment. If treatment is implemented within 6 hours, the prognosis can be excellent. However, if treatment is delayed and kidney failure develops, the prognosis is guarded. There are a few reports of cats surviving with aggressive treatment, though some of these cats had chronic problems with their kidneys requiring special long-term treatments.

If you think your cat may have ingested lilies, please do not wait – seek emergency help! Both of Angell’s Emergency Services – in Boston and in Waltham – are open 24 hours, 7 days a week, including all holidays and inclement weather. You should also call the Animal Poison Control hotline (1-888-426-4435) on the way to the hospital.

If you are a cat owner and want to have flowers in the house or in your yard this spring, please consider not purchasing lilies. The Animal Poison Control website has a list of flowers safe to keep in the house with cats. Additionally, consider educating your local florist or grocer about the danger of lilies to cats. Ideally, these plants would come with warning labels so that pet owners can make informed decisions about risk. Even if you do not purchase lilies, keep all flower arrangements out of reach of nosy felines. Non-toxic fresh “cat grass” (usually sprouted wheat or oats) or fresh catnip plants are available at most pet stores if your kitty likes to chew on plants. We wish you and your kitty a safe and healthy spring!

For more information about Angell's Emergency/Critical Care service, please visit angell.org/emergency. The Emergency service can be reached at 617-522-7282 (Boston) or 781-902-8400 (Waltham).