

Red Alert: Just One of These Pills Can Harm a Pet

Misguided pet parents think that because these are OK for them to use, giving one to their pet won't do any damage. Not so, as these over-the-counter pills for humans can bind to protein in your pet's bloodstream and damage his kidneys, gastrointestinal tract and even his nerves.

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STORY AT-A-GLANCE

- A recently published retrospective study demonstrates that a therapeutic plasma exchange (TPE) procedure can save the lives of dogs who've ingested human nonsteroidal anti-inflammatory drugs (NSAIDs) that have already been absorbed into the bloodstream
- The study involved 62 dogs, all of whom had all ingested a toxic dose of ibuprofen, carprofen, or naproxen; 61 of the dogs survived after undergoing a TPE procedure
- NSAIDs, acetaminophen, and antidepressants are among the most common medications involved in pet poisonings
- If you're a pet parent, play it safe and take steps to store all medications and supplements out of your animal companion's reach
- If you suspect your pet has ingested a human over-the-counter or prescription medication call your veterinarian, a local emergency animal hospital, or a pet poison hotline immediately

Year in and year out, nonsteroidal anti-inflammatory drugs (NSAIDs) such as Advil and Motrin remain the #1 human medication most often ingested by pets, according to the Pet Poison Helpline.¹

Cats and (much more often) dogs usually get hold of these drugs in one of two ways: they find a pill, or several, or a bottle full unattended and help themselves, or they are given them deliberately by misguided pet owners who mistakenly assume all over-the-counter human drugs are safe for pets.

However, as veterinarian Dr. Emmanuelle Butty of the Cummings School of Veterinary Medicine at Tufts University explains in an interview with the Telegram & Gazette, one tablet can easily reach toxic levels in small dogs.²

It's not uncommon for a pet parent to return home to a chewed-up bottle or pills scattered all over the floor, and no clue as to how much their pet swallowed or when. When a dog ingests NSAIDs, there's only about a one-to-two-hour window to induce vomiting. Beyond that timeframe, it's too late for vomit induction.

According to Butty, NSAIDs rapidly bind to protein in the bloodstream, specifically liquid plasma, and ulcers and damage to the kidneys, gastrointestinal (GI) tract or even nerves can occur before the drug passes through the dog's system.

Study Investigates Novel Treatment for NSAID Intoxication

Butty and Tufts colleague Dr. Mary Labato decided to conduct a study of a procedure called therapeutic plasma exchange (TPE) to provide the veterinary community with more comprehensive data on treatment options for situations in which NSAIDs have already been absorbed into a dog's bloodstream.

TPE only became widely used starting in 2015, so documentation on the procedure is still scarce, and in fact, the last major study was also done in Tufts in 2019, with only 10 dogs. Butty and colleagues published their findings, titled "Outcomes of nonsteroidal anti-inflammatory drug toxicosis treated with therapeutic plasma exchange in 62 dogs," in September 2022 in the *Journal of Internal Veterinary Medicine*.³

The retrospective study was a collaborative multi-center effort among six veterinary universities and hospitals including Cummings. As the title suggests, it involved 62 dogs treated with therapeutic plasma exchange. TPE involves pulling out all the plasma containing the protein the NSAIDs are bound to, then infusing clean plasma from a donor. The process differs from a blood transfusion in that the machine separates the plasma from the red blood cells.

61 of 62 Dogs Survived Potentially Fatal NSAID Poisoning

The dogs in the study had all ingested a "gastrointestinal, renal, and neurological toxic dose" of ibuprofen, carprofen, or naproxen. The median time between ingestion and treatment was 4 hours, with a range of 1 to 20 hours. The median TPE session lasted 2 hours, with a range of 1 to 4.5 hours.

The median duration of hospitalization was 2.25 days, with a range of 1 to 11 days. Of the 62 dogs, 61 survived, and none were re-hospitalized. In their conclusion, the study authors wrote:

*"This population of dogs managed with TPE had excellent outcomes, even in cases of high NSAID dose ingestion. When TPE is available and the time frame is appropriate, this extracorporeal modality should be considered for the management of NSAID overdose."*⁴

According to Butty, the goal of the study was to increase understanding of the procedure and add to the evidence-based data in scientific literature.

*"We had the clinical experience and wanted to put that in the literature," she said. "We wanted it to be more than a clinician's opinion saying, 'I use this treatment and it works,' but a peer-reviewed article showing that we had great success with 62 dogs that had severe intoxication going through this treatment."*⁵

It's of course important to note that while toxicosis treatments are improving, prevention is always the best treatment. "We're always getting better," said Butty, "but the best treatment for your dog is to just not let them get intoxicated."

Top 10 Human Medications That Can Poison Your Pet

The Pet Poison Helpline lists the following 10 human medications as most often involved in pet poisonings.⁶ If you have any of these drugs in your home, be sure they are kept safely out of your pet's reach at all times.

1. **Nonsteroidal anti-inflammatory drugs (NSAIDs)** — Topping the list of human medications that can get into the mouths of pets are nonsteroidal anti-inflammatory drugs or NSAIDs. Brand names include Advil, Motrin,

and Aleve.

Your pet is extremely sensitive to compounds in these medications and can become very ill from even a very small dose. Cats can suffer kidney and liver damage, and any pet that ingests NSAIDs can develop ulcers of the digestive tract.

Symptoms of poisoning include digestive upset, vomiting, bloody stool, increased thirst, increased frequency of urination, staggering, and seizures.

2. **Acetaminophen** — Next on the list is another anti-inflammatory called acetaminophen, the most well-known of which is Tylenol. Other drugs, including certain types of Excedrin and several sinus and cold preparations, also contain acetaminophen.

Cats are at particular risk from acetaminophen, as just two extra-strength tablets can be fatal. If your dog ingests acetaminophen, permanent liver damage can be the result. And the higher the dose, the more likely that red blood cell damage will occur.

Symptoms of acetaminophen poisoning are lethargy, trouble breathing, dark-colored urine, diarrhea, and vomiting.

3. **Antidepressants** — If your dog or cat ingests an antidepressant, symptoms can include listlessness, vomiting, and in some cases, a condition known as serotonin syndrome. This condition can cause agitation, disorientation, and an elevated heart rate, along with elevated blood pressure and body temperature, tremors, and seizures.

The drugs Cymbalta and Effexor topped a recent list of antidepressant pet poisonings. For some reason, kitties are drawn to these medications, which can cause severe neurologic and cardiac side effects. Other common brand names of antidepressants include Lexapro and Prozac.

4. **ADD and ADHD drugs** — Prescription attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD) drugs are amphetamines and are very dangerous for pets. Ingesting even minimal amounts of these medications can cause life-threatening tremors, seizures, elevated body temperature, and heart problems. Common brand names include Concerta, Adderall, and Ritalin.

5. **Benzodiazepines and sleep aids** — Benzodiazepines with brand names like Xanax, Klonopin, Ambien, and Lunesta are designed to reduce anxiety and help people sleep better. However, in pets, they sometimes have the opposite effect.

About half the dogs who ingest benzodiazepines become agitated instead of sedated. In addition, these drugs may cause severe lethargy, incoordination, and a slowed breathing rate. In cats, some forms of benzodiazepines can cause liver failure.

6. **Birth control (e.g., estrogen, estradiol, progesterone)** — Birth control pills often come in packages dogs find irresistible. Thankfully, small ingestions of these medications typically do not cause trouble. However, large ingestions of estrogen and estradiol can cause bone marrow suppression, particularly in birds. Additionally, intact female pets are at an increased risk of side effects from estrogen poisoning.

7. **Ace inhibitors** — Angiotensin-converting enzyme (ACE) inhibitors such as Zestril and Altace are commonly used to treat high blood pressure in people and, occasionally, pets. Though overdoses can cause low blood pressure, dizziness, and weakness, this category of medication is typically safe.

Pets ingesting small amounts of this medication can potentially be monitored at home, unless they have kidney failure or heart disease.

8. **Beta-blockers** — Even taken in very small quantities, beta-blockers (e.g., Coreg, Tenormin, Toprol) used to treat high blood pressure can cause serious problems for pets. Overdoses can trigger life-threatening decreases in blood pressure and a very slow heart rate.
9. **Thyroid hormones** — Pets — especially dogs — get underactive thyroids too. However, the dose of thyroid hormone (e.g., Armour, Nature-Throid and WP Thyroid, Synthroid) needed to treat dogs is much higher than the human dose. Therefore, if dogs accidentally get into thyroid hormones at home, it rarely results in problems.

However, acute overdoses, especially in cats can cause significant symptoms, including muscle tremors, nervousness, panting, a rapid heart rate and aggression.

0. **Cholesterol lowering agents (e.g., Lipitor, Zocor, Crestor)** — These popular medications, often called “statins,” are commonly used in the U.S. While pets do not typically get high cholesterol, they may still get into the pill bottle. Thankfully, most “statin” ingestions only cause mild vomiting or diarrhea. Serious side effects from these drugs come with long-term use, not one-time ingestions.

How to Keep Your Pet Safe From Medication Poisoning

To prevent your dog or cat from getting into your medications, always keep them safely out of reach and never administer a medication to your pet without first consulting with your veterinarian.

- Never leave loose pills in a plastic sandwich bag — the bags are too easy to chew into. Make sure all family members and guests do the same, keeping their medications out of reach.
- If you keep your medication in a pillbox or weekly pill container, make sure to store the container in a cabinet, as your dog might think it’s a plastic chew toy.
- Never store your medications near your pet’s medications. Pet poison hotlines receive hundreds of calls every year from concerned pet owners who have inadvertently given their own medication to their pet.
- Hang up your purse or backpack. Curious pets will explore the contents of your bag and simply placing it up out of reach solves the problem.

It’s important to realize that even seemingly benign over-the-counter herbal medications, and human vitamin and mineral supplements may cause serious poisoning in pets.

If your pet has ingested a human over-the-counter or prescription medication, call your veterinarian, your local emergency animal hospital, or Pet Poison Helpline’s 24-hour animal poison control center at 855-764-7661 immediately.

Sources and References

^{1, 6} [Pet Poison Helpline](#)

^{2, 5} [Telegram & Gazette, March 29, 2023](#)

^{3, 4} [Butty, E.M. et al. Multicenter Study, Journal of Veterinary Internal Medicine, 2022 Sep;36\(5\):1641-1647](#)