

Acetaminophen Toxicity

- Acetaminophen can be toxic to dogs and cats, but cats are 7 to 10 times more susceptible to acetaminophen toxicity than dogs are.
- Once swallowed, acetaminophen reaches the blood stream within 30 minutes; toxic effects are rapid and damage the liver and red blood cells.
- Never give a medication intended for people to your pet unless instructed to do so by your veterinarian.

What Is Acetaminophen Toxicity?

Acetaminophen is the active ingredient in Tylenol and some other related medications that are used to treat pain and fever in people. Unfortunately, this drug can be extremely toxic (poisonous) to cats and dogs. Acetaminophen toxicity occurs when a cat or dog swallows enough of the drug to cause damaging effects in the body.

Acetaminophen is mostly metabolized (broken down and eliminated from the body) by the liver. Some of the substances that are created during this process can have harmful effects on cats and dogs. Cats are at much greater risk of toxicity than dogs because they lack certain proteins necessary for the liver to safely metabolize acetaminophen.

How Does Acetaminophen Toxicity Occur?

Many cases of acetaminophen toxicity in dogs and cats are accidental. A pet may find and chew on a bottle of pills or eat a pill that has fallen on the floor. Sadly, some cases occur because pet owners give medication intended for people to their pets without being instructed to do so by a veterinarian.

Acetaminophen is a drug meant for people. However, there are situations in which your veterinarian may prescribe a specific dosage of acetaminophen for your dog. Be sure to follow your veterinarian's dosage directions very carefully and report any vomiting or other problems right away. Cats are 7 to 10 times more susceptible to acetaminophen toxicity than dogs are. Because cats are extremely sensitive to the drug's toxic effects, acetaminophen is not given to cats.

What Are the Clinical Signs of Acetaminophen Toxicity?

Once swallowed, acetaminophen is rapidly absorbed from the stomach and intestines and can achieve significant levels in the blood within 30 minutes.

The main toxic effects take two forms:

- **Liver damage:** One of the substances produced by the breakdown of acetaminophen binds to liver cells, damaging them. Severe damage can lead to liver failure.
- **Damage to red blood cells:** One of the substances produced by the breakdown of acetaminophen binds to red blood cells. Once bound, this substance changes hemoglobin (the protein in red blood cells that enables them to carry oxygen) into a molecule that is no longer able to carry oxygen. This means that the blood can no longer supply adequate amounts of oxygen to the body's vital organs. The altered hemoglobin molecule is called methemoglobin; its lack of oxygen-carrying ability changes the color of blood from red to brown.

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Cats and dogs can develop both forms of acetaminophen toxicity. However, cats are more likely to suffer hemoglobin damage while dogs are more likely to suffer liver damage. The main clinical signs associated with acetaminophen toxicity that result from liver injury and an inability of the blood to carry oxygen include:

- Vomiting
- Decreased appetite
- Lethargy (tiredness)
- Difficult or rapid breathing

- Abdominal pain
- Brown discoloration of the gums (a result of methemoglobin)
- Brown urine
- Blue gums (known as cyanosis, indicates inadequate oxygen supply)
- Swelling of the face or paws
- Shock, collapse, death

How Is Acetaminophen Toxicity Diagnosed?

Diagnosis of acetaminophen toxicity is commonly based on a history of recently chewing or swallowing pills. Your veterinarian may recommend diagnostic testing, such as a chemistry panel and complete blood cell count (CBC), to assess the extent of the damage.

What Are the Treatment and Outcome for Pets Suffering From Acetaminophen Toxicity?

Acetaminophen is absorbed and metabolized very quickly. If you realize right away that your pet has swallowed acetaminophen, vomiting can be induced

to remove the drug from your pet's stomach before the body can absorb it. Another option may be to anesthetize your pet in order to flush out the contents of the stomach. Your veterinarian may also administer a special preparation of liquid activated charcoal to slow absorption of toxic material from the stomach and intestines.

There is a specific antidote for acetaminophen toxicity. This medication, *N*-acetylcysteine, limits formation of the toxic substance that damages the liver and red blood cells. Additional treatments may include blood transfusions, intravenous fluid therapy, and other medications to help support and stabilize the patient.

Acetaminophen toxicity can be fatal. However, pets can survive if the condition is recognized, diagnosed, and treated quickly.

Most cases of acetaminophen toxicity are preventable. Never give medications meant for people to your pet unless instructed to do so by your veterinarian, and keep all medications in the home secured to help prevent accidental swallowing.