

# Pyrethrins: Toxicity of over the counter flea and tick medications



## Which flea products are most dangerous?

Flea and tick preventative that are sold without prescription can contain various active ingredients, sometimes in combination. The efficacy and safety of these products will vary greatly between companies but also between products of the same company.

Pyrethrins and their derivatives, pyrethroids or permethrins, are insecticides that are frequently found in these products and are one of the most common toxicities seen in dogs and cats worldwide. High concentration pyrethrins spot-ons are the cause of toxicity in a vast majority of cases. However, serious symptoms are also reported with other formulations.

## Are cats and dogs equally affected by pyrethrin toxicity?

Cats are much more sensitive than dogs to pyrethrins. This is because of a different metabolism in the liver.

The majority of severe cases presented to the emergency room are cats that have been applied a spot-on for dogs, containing a higher concentration than in the products meant for cats. However, it is important to note that a cat living with a dog which received the correct dog treatment can also develop problems from simply sleeping by the dog or grooming between the animals. Finally, it is also possible to see problems in certain individuals that were administered the correct product at the indicated dose.

## What are the symptoms of pyrethrin toxicity?

Neurological signs can be seen, including drooling, shacking, tremors, agitation or lethargy, muscle fasciculation, dilated pupils, and even seizures. Signs will usually start shortly after the contact with the product, but can also be delayed up to 3 days.

**It is imperative to contact a veterinarian without delay if you suspect that your animal is showing signs of toxicity to a flea product.**



### Are there treatments for animals with pyrethrin toxicity?

Decontamination is very important and your animal should be bathed in warm water with gentle liquid dish soap or unmedicated shampoo to prevent further exposure to the product. It is important not to submerge your animal in a way to have him or her swallow or choke on water. If your animal is agitated or very ill, you probably should let the professionals at your veterinary hospital take care of the bathing.

Hospitalisation will be recommended for IV fluids and other supportive care. The prognosis for recovery is excellent with appropriate and timely veterinary care. A 1 to 4 days hospital stay is to be expected.

### Is there an antidote for pyrethrins?

There is no antidote for pyrethrins. However, the administration of IV lipid emulsion can prove to be efficacious in resolving clinical signs if the conventional treatments fail or are insufficient. Treatment with lipid emulsion is inexpensive, and has proven life-saving in much toxicity by “removing” the toxic agent from the tissues and other less well understood mechanisms.

**Always consult your veterinarian prior to giving any drug to your animal!**





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