Warning, Using This on Your Pet Could Cause Seizures and Tremors

A new governmental alert is warning against using these common products on dogs and cats if they contain this ingredient. These products have been reported to cause neurological symptoms, including muscle tremors, decreased muscle control, and even seizures. Check your product labels today.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- The FDA has issued an alert to pet owners and veterinarians about flea/tick products containing isoxazoline
- These products have been reported to cause neurologic symptoms in dogs and cats, including muscle tremors, loss of muscle control and seizures
- Other toxic flea/tick products for pets include those containing metaflumizone, amitraz, fipronil and tetrachlorvinphos
- Chemical spot-on flea/tick products can be extremely dangerous for cats
- Every chemical flea/tick product on the market has the potential to cause adverse events in pets; if possible, avoid these chemicals and opt for safe, nontoxic alternatives

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The U.S. Food and Drug Administration (FDA) has issued an alert to pet owners and veterinarians about the potential for neurologic adverse events in dogs and cats treated with flea/tick products containing isoxazoline, a parasiticide (chemical insecticide).[1] The quite serious side effects pets have experienced after being given products containing isoxazoline include muscle tremors, ataxia (loss of muscle control) and seizures.

The implicated products have received FDA approval for “treatment and prevention of flea infestations, and the treatment and control of tick infestations,” and include:

- Bravecto
- Nexgard
- Simparica
- Credelio (just recently approved)

The FDA doesn’t provide any specifics in its alert about the number of adverse events reported or whether they involved primarily cats, dogs or pets under a certain weight. The agency is asking the manufacturers of these products to change the labeling “… in order to provide veterinarians and pet owners with the information they need to make treatment decisions for each pet on an individual basis.” The FDA also suggests that:

> *"Veterinarians should use their specialized training to review their patients' medical histories and determine, in consultation with pet owners, whether a product in the isoxazoline class is appropriate for the pet."*

Most veterinarians who routinely prescribe chemical flea/tick products would only consider pets with a previous history of neurologic issues to be at risk. After all, there's no way to predict a potential problem in healthy animals, and yet the FDA warns that, "… seizures may occur in animals without a prior history."[2]

More Toxic Flea/Tick Chemicals

Virtually every chemical flea/tick product on the market has the potential to cause adverse events in pets. The purpose of these products is to kill things, which makes all of them toxic on some level. It also explains their sketchy history.

- **Metaflumizone and amitraz (ProMeris, discontinued flea/tick products) —** Several years ago, Pfizer stopped producing ProMeris, a topical flea/tick treatment for dogs and cats. ProMeris for dogs, also called ProMeris Duo, contained two active insecticides — metaflumizone and amitraz. ProMeris for cats contained only metaflumizone. Metaflumizone is intended to kill fleas; amitraz kills ticks.

  Veterinary use of metaflumizone can result in loss of muscle coordination (same problem noted earlier with products containing isoxazoline), gene mutation, weight loss, blood and bone abnormalities, liver toxicity and reproductive developmental toxicity.[3]

  The second ingredient in ProMeris Duo, amitraz, is toxic to horses, toxic for cats and rabbits, and should not be used on **Chihuahuas** or dogs suffering from heat stress. Older dogs, those in debilitated health, and very small breeds are more likely to have an adverse reaction to amitraz.[4]

  There are several potential side effects of amitraz, one of which is, unsurprisingly, loss of muscle coordination. In addition, a study published in the journal Veterinary Dermatology indicated dogs being treated with ProMeris Duo ran the risk of acquiring a variant of the condition **pemphigus foliaceus** (PF).[5]
- **Fipronil (Frontline, Sentry, Hartz for cats, Parastar flea/tick products)**[6] **—** Fipronil is an adult flea insecticide found in some flea/tick products (e.g., Elanco's Parastar for dogs), and has been classified by the U.S. Environmental Protection Agency (EPA) as a group C (possible human) carcinogen based on an increase in thyroid tumors in both male and female rats.[7] Fipronil acts by disrupting the central nervous system of insects. From the journal Biomarkers in Toxicology:

  > *"In laboratory animals, fipronil administration by the oral route can produce the signs of neurotoxicity, including convulsions, tremors, abnormal gait, and hunched posture. Similar signs can be produced following inhalation exposure.*
  >
  > *Poisoned dogs and cats usually show signs of tremors, convulsions, seizures, and death. Following dermal exposure, fipronil toxicity is more pronounced in rabbits than in rats and mice. Humans exposed to fipronil by ingestion may show symptoms of headache, tonic-clonic convulsions, seizures, paresthesia, pneumonia, and death."*[8]

It seems clear that insecticide side effects in animals (including people) consistently involve neurologic symptoms.

- **Tetrachlorvinphos (Hartz, Zodiac, Biospot flea/tick products)**[9] — Studies of this pesticide have produced strong evidence of carcinogenicity in animals. This toxin is banned in the European Union, but is still in use in the U.S. on livestock and companion animals, including in flea collars for pets.

  Three years ago, the International Agency for Research on Cancer (IARC), which is part of the World Health Organization (WHO), reported that **organophosphate pesticides are carcinogenic**.[10]

  A summary of the IARC study was published in the journal The Lancet Oncology in May 2015.[11] The 17 experts from 11 countries who prepared the report rated tetrachlorvinphos as "possibly carcinogenic to humans," and there is sufficient evidence the remaining four chemicals are carcinogenic to animals.[12]

Spot-on Products Present Significant Risk to Cats and Small Dogs

Despite the constant drumbeat from veterinary drug manufacturers, conventional veterinarians and increasingly, print and broadcast ads promoting flea and tick preventives, these chemicals aren't as harmless as their advocates would have us all believe. This is especially true for cats, and in fact a few years ago in the Pittsburg, PA area, in a four-week period four cats died after being treated with spot-on products intended for dogs.[13]

In one tragic case, the pet parents noticed fleas on both their cats, so they applied "just a drop" of a topical spot-on flea treatment on each kitty. Within hours both cats were very sick and one was having convulsions. The owners immediately took both kitties to a veterinary clinic, but neither survived.

The cats' guardians knew the flea treatment was intended for dogs, but figured a small amount would be safe for kitties. Several years ago, the Environmental Protection Agency (EPA) issued an advisory on approximately 70 spot-on flea and tick control products due to a dramatic increase (50%) in reports of adverse events during 2008.[14] Reactions included skin irritation, skin burns, seizures and death.

Since 2010, there had been over 44,000 reports of adverse reactions, including 600 deaths. In March 2010, the EPA published the results of a year-long study of spot-on products. Their findings included the following:

- Most adverse reactions were seen in dogs weighing between 10 and 20 pounds.
- Reactions in mixed breed dogs were most commonly reported, however, the Chihuahua, Shih Tzu, Miniature Poodle, Pomeranian, Dachshund, Maltese, Yorkshire Terrier and Bichon Frise seem particularly at risk.
- Products containing cyphenothrin and permethrin were especially problematic for small breed dogs.
- Most incidents occurred in dogs under 3 years old, likely at their first exposure to a spot-on product.
- Dosage ranges were considered to be too wide in some cases and product labeling was identified as needing a revamp in many cases.

Based on their findings, the EPA determined that spot-on product labels needed to provide clearer warnings against using treatments meant for dogs on cats. The agency also recommended that manufacturers lower recommended dosages for some pets to prevent over-medicating.

Issues with spot-on products continue today based on a veterinary client handout titled "Don't use your dog's flea and tick medicine on your cat!"[15] The handout warns:

> *"Many prescription and over-the-counter flea and tick medications that are labeled for dogs (usually ones you apply topically rather than have your dog swallow) contain a synthetic compound called permethrin, which is safe for dogs but toxic to cats. If a product containing permethrin is mistakenly applied to a cat or eaten by one, it can cause seizures, coma and even death."*

The handout explains that flea and tick products containing permethrin have warnings to never use them on cats, "… but these warnings are sometimes small and hard to read." It also suggests storing flea and tick products for dogs separately from cat products, since "… they have similar packaging and small print," making it easy "… to grab the wrong product by mistake."

The handout also recommends keeping dogs who've just received a flea/tick preventive away from cats, "… as even close contact with permethrin can harm your cat."

How to Avoid Chemical Flea/Tick Preventives Altogether

There are safe, nontoxic alternatives for flea and tick control for pets, and they don't have side effects, unlike virtually all forms of chemical pesticides. It's important to realize that just because a chemical spot-on product is applied to the outside of your pet doesn't mean it can't make its way inside. Any substance applied to your pet's coat and skin can be absorbed into the body.

Natural pesticides work best at preventing infestations from occurring, rather than treating infestations after they happen. It can be difficult to effectively treat an infested house naturally, so the key is to prevent parasite issues in the first place. Recommended alternatives include:

- A safe, natural pest deterrent
- Cedar oil (specifically manufactured for pet health)
- Natural, food-grade diatomaceous earth, topically
- Fresh garlic (work with your **integrative veterinarian** to determine a safe amount for your pet's body weight)
- Feed a nutritionally balanced, species-appropriate diet (the healthier your dog or cat is, the less appealing she'll be to parasites; also, a biologically appropriate diet supports a strong immune system)
- Bathe and brush your pet regularly and perform frequent full-body inspections to check for parasite activity (if you spend a lot of time outdoors, it's important to check your pet and yourself for ticks every night during tick season)
- Use a flea and tick comb to naturally exfoliate your pet's skin while pulling off or exposing pests (absolutely nothing takes the place of physically checking for ticks)
- Make sure both your indoor and outdoor environments are unfriendly to pests

Sources and References

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[13] Pittsburgh Post-Gazette September 28, 2013 (Archived)

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