Does Your Flea and Tick Preventive Contain Carcinogens?

If you're using these popular (and vet recommended) flea and tick preventives, be aware. The insecticide they use is a possible human carcinogen. In addition, this other ingredient is linked to neurological adverse effects that don't stop with your pet. Here's what I recommend instead.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- Most conventional veterinarians still recommend the widespread use of chemical flea and tick preventives, despite their documented dangers to not only pets, but the environment as well
- I discourage the use of chemical pest preventives whenever possible, however, if you live in a flea or tick-endemic area and use of these agents is necessary, it's important to proceed very cautiously
- Before automatically reaching for chemical flea/tick preventives, consider safe, nontoxic alternatives

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Most conventional veterinarians continue to recommend the widespread use of chemical flea and tick preventives, never mentioning nontoxic alternatives or the possible side effects from using these pesticides.

This one-size-fits-all policy is not a good approach if the goal is to protect the health of dogs and cats. Fipronil, for example, is the insecticide found in Frontline, Sentry, Hartz and other flea/tick products, and has been classified as a possible human carcinogen.[1]

Spot-on flea/tick products for dogs are also the No. 2 poison involving cats according to the Pet Poison Helpline,[2] while neurologic adverse events have been reported in both dogs and cats treated with flea/tick products containing isoxazoline, a chemical insecticide.[3]

It's also important to understand that the risks of these products don't stop at your pet. The environment is also being impacted by chemical flea and tick products, with researchers finding that such chemicals are ubiquitous in waterways, with unknown effects on the ecosystem.[4]

Dealing With Fleas

Fleas feed on the blood of companion animals and their bites can lead to irritation and skin allergies. Sometimes these pests are no more than a nasty nuisance, but they have the potential to cause serious problems. Fleas can transmit tapeworms, bartonella bacteria, and can cause severe anemia in young animals.

They can also trigger a condition in pets called **flea allergy dermatitis** (FAD), which is characterized by a hypersensitivity reaction to flea bites. It's important to note that it's not the bite of a flea that makes your dog scratch; it's the flea saliva, which can cause overwhelming irritation disproportionate to the actual number of fleas on your canine companion.

I strongly discourage pet parents from automatically applying potentially toxic chemical agents to furry family members or around their home to repel or kill pests. If, however, you live in a flea-endemic area and have a family member with FAD or an infestation that requires that you use these chemicals, follow these precautions:

- Be very careful to follow dosing directions on the label, and if your pet is at the low end of a dosage range use the next lowest dosage. Be extremely cautious with small dogs, and do not under any circumstances apply dog product to your cat. Dr. Jean Dodds suggests the Spinosad class of drugs may have fewer side effects than isoxazoline products.
- Monitor your pet for adverse reactions after you apply a chemical product — especially when using one for the first time.
- Don't depend exclusively on chemical treatments. Rotate natural preventives with chemicals, including diatomaceous earth, pet-friendly essential oil products and natural deterrent collars. An every-other-month rotation works well for many pet parents in high-risk areas.
- Since your pet's liver will be tasked with processing the chemicals that make it into the bloodstream, it can be very beneficial to give her a supplement to help detoxify the liver. I recommend, at the very least, milk thistle, which is a general detox herb and helps to regenerate liver cells. Another product I recommend is chlorella, a super green food that is a very powerful detox agent.

  If you're using isoxazoline products, I also recommend giving GABA, glutathione, NAC (n-acetyl cysteine) and SOD (superoxide dismutase) to help decrease the potential for neurotoxicity.

Work with your integrative veterinarian to determine how much to give your dog or cat depending on her age, weight, and any medications she's taking.

Dealing With Ticks

In deciding how to best protect your dog or cat from ticks, I recommend you assess your pets just as you assess the rest of your family. If you're planning a hike in a high-risk area and plan to use chemicals to repel parasites on you or your kids, your dogs will also need the same level of protection (so you'll need to be prepared with products from your veterinarian).

You also need to consider when pest season begins and ends where you live, your pet's individual risk (e.g., do you go for long walks in the woods or do a lot of hiking? Does your furry family member have unrestricted access to the outdoors?), as well as the level of disease risk in your area.

Ticks are resilient and increasingly resistant to pesticides, and because they feed on many different animals (humans, dogs, cats, squirrels, mice, opossums, deer and more), and for long periods of time, they're quite good at acquiring and transmitting diseases, some of which can be life-threatening.

So even if you opt to use chemicals on your human and animal family members, it's still wise to do tick checks when you get home; don't rely solely on any product and assume you're protected. Common tick-borne diseases include:

- Lyme disease
- Cytauxzoonosis
- Rocky Mountain Spotted Fever
- Ehrlichiosis
- Anaplasmosis
- Hepatozoonosis
- Babesiosis
- Tularemia

Unfortunately, a single tick bite can expose your whole family to multiple diseases, but exposure is not the same as infection. In many cases, your healthy pet will be able to fight off tick-borne diseases with no treatment required. The immune system of most dogs and cats does exactly what it's supposed to do when a foreign bacterium enters the body — it mounts an effective immune response.

The only way to know if a pet has effectively eliminated the bacteria (was exposed but not infected) or is currently infected is to run a QC6 (Quantitative C6) test that differentiates exposure from infection. Sadly, large numbers of dogs and even some cats each year are unnecessarily treated with extensive antibiotic therapy because their veterinarians panic after seeing a positive exposure on a screening test. Please don't let this happen to your pet!

Up to 90% of dogs in certain areas (and substantially fewer cats)[5] may have been exposed to tick-borne pathogens, but most are able to fight off infection on their own. In those that do not, quickly identifying the problem and creating an appropriate treatment plan is crucial. I recommend that my clients who live in tick-endemic areas or who have pets who receive multiple tick bites each year have them screened for exposure every six months.

How do you make sure you're catching possible tick-borne infections before they take hold? Ask your veterinarian to replace the standard heartworm test with a more comprehensive annual blood test that identifies several tick-borne pathogens long before pets show symptoms.

The SNAP 4Dx Plus (from Idexx Labs) and the Accuplex4 tests (Antech Diagnostics) that screen for heartworm, Lyme disease and two strains each of ehrlichia and anaplasma should be screening tests for animal companions in tick-endemic areas, in my opinion. Completing one of these simple blood tests every 6 to 12 months is the best way to:

- Avoid unnecessary chemical preventive application
- Identify infections before chronic disease occurs
- Catch cases of dogs infected as a result of pesticide resistance (a growing problem)

I also recommend that pets living in tick-infested areas who test positive on the SNAP 4Dx Plus or the Accuplex4 also be screened for babesia exposure. The best way to detect exposure to this parasite is with a PCR (polymerase chain reaction) test that checks for the presence of babesia DNA. Unfortunately, there isn't a quick in-house test that checks for feline tick-borne diseases, probably because they occur in much lower frequency, compared to dogs.

Safe, Nontoxic Alternatives to Chemicals

There are safe, nontoxic alternatives for pest control for pets, and they don’t have side effects, unlike virtually all forms of chemical pesticides. Alternatives I recommend include:

- A safe, natural pest deterrent (see recipes below)
- Cedar oil (specifically manufactured for pet health)
- Natural, food-grade diatomaceous earth, topically (not on the head)
- Fresh garlic (1/4 teaspoon of freshly chopped garlic per 15 pounds of body weight)
- Feed a nutritionally optimal, species-specific fresh food diet
- Bathe and brush furry family members regularly and perform frequent full-body inspections to check for parasite activity
- Use a flea comb daily during flea season to naturally exfoliate you're the skin while removing or exposing pests
- Make sure both your indoor and outdoor environments are unfriendly to pests

All-Natural Homemade Pest Deterrent for Dogs

You can make an all-natural pest deterrent for your dog very easily at home. It will help him avoid a good percentage of the pests he encounters, though not all of them. The recipe: mix 8 ounces of pure water with 4 ounces of organic, unfiltered **apple cider vinegar** and 20 drops of neem oil.

Neem oil is not an essential oil. It's expelled or pressed oil and is effective because fleas and ticks are repelled by it. It's also great for pets who are very sensitive to odors. Catnip oil can also be used as a pest deterrent, since it has been proven to be as effective as diethyltoluamide (DEET), the mosquito and tick spray humans use that has several toxic side effects.

If you want to add some extra punch to your dog's pest deterrent recipe and he’s not sensitive to high quality essential oils, go with five drops of lemon, lemongrass, eucalyptus or geranium essential oil. I use geranium oil quite a bit because I find it very effective. If you have a dog who comes in contact with ticks, adding the extra punch of one of the essential oils I listed can be very beneficial.

You can store your homemade pest deterrent in the fridge, which is what I do. Before your dog goes outside, give the bottle a good shake, then mist him with it, being careful to avoid the eyes. The active ingredients, especially the oils in the recipe, dissipate in about four hours, so you may need to reapply it several times throughout the day.

All-Natural Homemade Pest Deterrent for Cats

My recipe for cats is very similar to the one for dogs. Mix 8 ounces of pure water with 4 ounces of organic, unfiltered apple cider vinegar, plus 10 drops of neem oil and 10 drops of catnip oil.

Cats and essential oils can be tricky, so we want to leave essential oils out of the kitty recipe. Neither neem nor catnip oil are truly essential oils — they're distillates, so we're safe using those. Catnip oil works to deter mosquitoes as well. Cats aren't prone to heartworm, which is a mosquito-borne disease, but dogs are.

As a bonus, these recipes also make your dog or cat smell wonderful! Sometimes I add five drops of organic vanilla to my dog and cat sprays to make the spray smell extra good. Many people swear vanilla is also naturally repelling to pests, as professional organic pest companies often use vanilla as a base for many of their outdoor lawn and garden formulas.

You can use these sprays during flea season, tick season and all summer long, and feel good that you're not using pesticides on your pet.

Sources and References

[1] National Pesticide Information Center

[2] Pet Poison Helpline

[3] Fact Sheet for Pet Owners and Veterinarians about Potential Adverse Events Associated with Isoxazoline Flea and Tick Products, 8/13/2021

[4] Science of the Total Environment February 10, 2021, Volume 755, Part 1, 143560

[5] Hegarty, B.C. et al. Parasit Vectors. 2015; 8: 320