

# Ettinger & Feldman – Textbook of Veterinary Internal Medicine

## Client Information Sheet

### Fleas and Flea Allergy Dermatitis

Catherine A. Outerbridge

#### What is flea allergy dermatitis?

Flea allergy is the most common cause of itching and scratching in dogs and cats. When a flea bites your pet, it injects a small amount of saliva into the skin. Dogs and cats can develop an allergic reaction to this saliva and will react to it with severe itching and scratching. This itching sensation may last for up to 2 weeks after the last flea bite.

In the dog, the most commonly observed symptom of flea allergy include biting and scratching around the rump, tail base, and groin areas, the creation of “hot spots;” and the development of secondary skin infections. Cats may manifest flea bite allergy more subtly. You may see many areas of hair loss and scratching, but more often you will feel small scabs and bumps around their neck and down their backs (military dermatitis).

It may seem confusing to be told that your dog or cat has flea allergy dermatitis if you never see fleas. This is mainly due to the fact that your pet has a remarkable capacity to chase and subsequently eat these fleas! You may find evidence of fleas on your pet by using a fine comb and brushing out the “flea dirt” that they leave behind. This “dirt” looks like small black dots and is the excrement of the flea. When placed on wet paper, it dissolves in red streaks since it contains partially digested blood. The adult cat flea spends most of the time living on cats and dogs. Fleas will lay eggs on the animals, but these eggs will rapidly fall off the pets and be distributed in the parts of the environment where the animals spend most of their time. The eggs will hatch into larvae; larvae evolve into pupae (cocoons) that emerge later as adult fleas. For one adult flea found on your pet there are at least one hundred immature fleas in the animal’s environment.

#### Flea Control on Your Pet

The only long-term effective and safe therapy for flea allergy dermatitis is to keep your pet from being bitten by fleas. This may seem like an impossible task, but it is not. Successful resolution of the flea allergic animal’s discomfort requires that you do everything possible to minimize the number of fleas that can contact your pet. Flea control must involve all areas of infestation. This means killing the fleas on your pets and in your house and yard. Treating only once kills the adults and some pre-adults, but will result in reoccurrence of infestation once the resistant eggs hatch or pupae leave their cocoons. The control of fleas is an on-going process, but once initiated, it is not difficult to sustain. The flea control program you use must be tailored to your individual situation.

## Dogs

The use of an adulticide product for flea-allergic pets or households with flea-allergic pets is the most important part of flea control. There are several new “spot-on” formulations available that offer more convenience of application. These products have been shown to be effective when used as instructed and are not absorbed into your pet’s bloodstream, (they stay in the skin), making them safe. Advantage (imidacloprid), Advantix (imidacloprid and permethrin), and Frontline Plus (fipronil and methoprene) are currently available. Accurate dosage is based on the pet’s weight. These products are applied by parting the hair between the shoulder blades down the back, and applying the small amount of liquid to the skin. Application frequency varies with the product and an individual pet’s bathing needs but most are applied every 3 to 4 weeks. Advantix cannot be used on cats. Revolution (selamectin), is a “spot on” product that is absorbed into the body. Revolution also provides protection against heartworm, scabies mites, and a variety of intestinal parasites in addition to protection from fleas. Reapplication is recommended monthly. A recently available, oral flea adulticide, Capstar (nitenpyram) is a safe, short acting, oral tablet that can be given whenever fleas are seen on the pet, or when the pet will be in a high-risk area. Capstar is safe to use daily but is designed for use as a “rescue” drug to kill fleas should they be seen. The use of a pyrethrin-based daily spray or foam product such as SynerKyl or Ectof foam may be recommended for your pet. These products are used when animals are being bathed often with therapeutic shampoos or are frequent swimmers. Pyrethrin sprays and foams, although extremely effective and safe, have little residual effect. These products may also have some repellent activity. If you have several pets and only one is allergic, the pets in your household must receive flea control to help control the clinical signs of flea allergy in the affected pet.

## Cats

If you own cats, they must be involved in the flea control program even if they are not exhibiting any problems, or they will carry the fleas to your house, yard, and dogs. Cats are much more sensitive to the chemicals in flea preparations, and organophosphates and high concentration permethrins cannot be used on them. For cats we recommend using Frontline Plus (fipronil and methoprene), Advantage (imidacloprid), or Revolution (selamectin) in the feline formulation. They are applied in a similar fashion as in dogs. Beginning at the base of the head, part the hair and spread the small amount of liquid down the top of the neck. Capstar (nitenpyram) is also safe for use in cats as a “quick kill” in the event fleas are seen.

## Juvenile Flea Stages

Several life stages occur before a flea becomes a biting adult. These juvenile stages are an ideal area to target for flea control. Decreasing the numbers of immature (juvenile) fleas can be an excellent way to help prevent adult fleas and thus flea bites. Recent research has led to development of several products that interrupt the life cycle of the flea. Synthetic juvenile flea growth hormone imitators are found in many flea products. Methoprene is contained in many of the indoor area treatments. Also available now is photo-stabilized Methoprene for outdoor use. Knockout collars contain pyriproxifen, a similar flea growth regulator that is effective for 13 months. Unlike other flea collars, these collars can control the juvenile flea stages and are quite effective and convenient. All of these synthetic hormones are safe to use on animals and around humans. They prevent the adult female flea from laying viable eggs and prevent immature fleas from developing into adults. Lufenuron (Program) is a pill available for both dogs and cats that is given monthly with food. As the adult female flea feeds on the dog or cat, she lays eggs that cannot hatch and larvae that will not survive. This product is safe, but flea-allergic animals also need protection from the biting adults. When used properly, it may take several months for the flea problem in your environment to be eliminated unless you combine the use of a product on the animal. Another formulation available is Lufenuron in combination with a monthly heartworm pill (Sentinel).

Many other forms of flea control on your pet have been scientifically shown to be ineffective. Flea shampoos will only kill the adult fleas but have virtually no residual effect and will not prevent re-infestation once they are rinsed off. Flea collars alone are ineffective because they are not able to sustain high enough concentrations of insecticide over the animal's entire body. Electronic flea collars, brewer's yeast, garlic, vitamin B tablets, and extracts of eucalyptus, tea tree oil, or pennyroyal are not flea repellent and provide no protection for your pet. Lastly, flea combs, although helpful, are similar in effect to the use of flea shampoos alone; they do not prevent re-infestation.

## Signs of Toxicity

All flea control products are potentially toxic or may produce unexpected side effects. Toxicity may result from accidental overdose or unexpected sensitivity. Not all products safe for dogs are safe for cats; read labels closely! Known side effects, particularly to organophosphate pesticides, are vomiting, diarrhea, drooling, sluggishness, weakness, or abnormal behavior. If you suspect that your animal is reacting adversely to a flea control product, stop using the product and consult your veterinarian immediately. If the reaction occurs immediately after application, the product should be rinsed off thoroughly and your pet should be brought to the veterinarian for evaluation. Adverse reactions may occur from minutes to days following application. Insecticides can be toxic to people; all products should be handled carefully, avoiding direct contact as much as possible. Keep all products out of the reach of children. Cats may occasionally exhibit various degrees of hypersalivation (drooling) as a result of a reaction to alcoholic components present in some flea sprays. In case of doubt, please consult your veterinarian.

## Flea Control in Your House

House treatments need to be concentrated on “source points,” which are areas where your pets spend most of their time. This typically would include the bedding areas, the paths between the rooms, the feeding location, etc. You may choose to utilize a professional exterminator service for the treatment of fleas in your home. The exterminators should use a combination of an adulticide to kill the adult fleas as well as an insect growth regulator for the juvenile stages such as methoprene or pyriproxifen.

If you choose to do your own environmental control, a premise spray, which contains an adulticide and an insect growth regulator is recommended. These products need to be used in all areas of the house where the pet(s) reside. Flea bombs and foggers may be inadequate as they do not go around corners or under furniture – places where the fleas hide. The control of fleas in the house should be repeated as instructed on the product label. Other ways to lessen the flea burden in the home include thorough vacuuming of all source points in the house followed by disposal of the vacuum bag and washing all animal bedding weekly in hot water with drying at high heat for 20 minutes.

## Flea Control in Your Yard

In environments that permit year-round flea survival and reproduction, if the use of products on the animal have been insufficient to control the problem it may be necessary to treat the yard. It is important to principally focus on areas where your pets spend most of their time and where immature fleas may develop. Typically, fleas survive and reproduce in shaded, moist areas that contain plant or organic debris (under the decks, bushes, etc.). Fleas do not reproduce well in sunny, open areas of lawn or patio. Either a professional exterminator or you must treat for fleas in your yard. You can treat the yard yourself by purchasing Malathion or diazinon from your local lawn and garden center. Yard treatments with these chemicals should be performed as instructed on the product label. Another product available for outdoor use is a parasitic nematode (Bioflea) that can be applied to areas of damp soil. These nonpathogenic worms will seek and destroy flea larvae. Label directions must be followed closely for these to work.

## Special Considerations

Households with small children, pregnant women, or debilitated individuals should not use the organophosphate family of insecticides. The pyrethrin-based products as well as the insect growth regulators for juvenile stages and the newer spot-on treatments are appropriate in these situations. However, no matter how safe the product or situation is, all pesticides need to be used correctly. The type of chemicals used environmentally may also be modified. Strict cleanliness, such as daily vacuuming, steam cleaning of rugs, and elimination of yard debris will be helpful to reduce flea numbers. As a reasonable precaution, pregnant woman and small children should never be involved in the application of chemicals on animals. Professional exterminators, with appropriate modification of their programs, are highly recommended for all treatments in these households.

### **Specific Recommendations for Flea Control for Your Pet**

Area Treated	Product	Frequency of Use
House		
Yard		
Dog		
Cat		
Other animals (in the household)		

## Contacts for Further Information



**Animal Health  
Care Center**  
*of Hershey*

**948 E. Chocolate Ave  
Hershey, PA 17033  
(717) 533-6745**