

## Fleas

Like the intestinal parasites, ectoparasites live at the expense of their host. External parasites live on the outside of the body. Examples are fleas and ticks, which plague both dogs and cats. Within the past decade, technologically advanced flea products for dogs and cats have significantly reshaped the way veterinarians and pet owners approach common ectoparasites. Today's flea products have set new performance standards, including broader-spectrum activity, longer duration of protection (even after water immersion or bathing), and pet-friendly application enhancements. However, even with these major strides, these pests remain a real threat to the health and well being of our pets. When we look at flea and tick control, it is important to take a preventive approach.

### Description

Fleas are bloodsucking parasites that live on the skin's surface. Fleas can make life miserable for a pet. Not only do they bite an animal, but they also run around on its dry, sensitive skin. They are not limited to attacking pets, however. They bite humans as well. If a flea has ever bitten you, you know that it causes an uncomfortable reactive condition — it itches! Many animals are allergic to the flea saliva that is injected with each bite. This allergic reaction makes the itching worse and some pets will develop serious skin infections. Fleas can also transmit disease. Animals that become severely infested with fleas can develop flea anemia. Pale gums and weakness are the main signs of anemia. This is more common in puppies, cats, and smaller dogs because of their size. However it can also occur in large dogs.

Fleas can be hard to find — many animals have thick fur, and fleas are small and run quickly when you are looking for them. Finding fleas, flea eggs, or flea feces (digested blood, which when dry looks like black pepper) on an animal is proof of flea infestation. Other signs of flea infestation include tapeworm infection (white segments about the size of a piece of white rice found crawling on the ground or on the hair near a pet's anus). Even though you may not be able to see a flea, flea dirt indicates that fleas are present. Generally, only adult fleas are found on pets. After ingesting blood from an animal, female fleas lay eggs inside the house in cracks and crevices or outside on damp ground. Over her life span, a female flea may lay several hundred eggs. Immature fleas called larvae hatch within two weeks. Larvae live in cracks and crevices and feed on organic material, including tapeworm eggs. Under warm, moist conditions, the entire life cycle may occur in as little as 16 days, or it may take as long as a year under unfavorable condition. This aspect of the life cycle explains how fleas survive from year to year in harsh climate.

In general a flea population is made up of approximately 50% eggs, 30% larvae, 15% pupae, and only 5% biting adults. Completion of the life cycle from egg to adult varies from 2 weeks to 2 months. Adult fleas cannot survive or lay eggs

without a blood meal, but once it is feeding on a dog or cat, the female can lay 20 to 40 eggs per day and up to 2,000 in a lifetime. If groomed from the host, egg production ceases and fleas die within 24 to 48 hours. Newly emerged previously unfed adult fleas, however, can live 1 to 2 weeks if a blood meal is not obtained. Warm temperatures and high humidity speed up the life cycle of the flea. The optimum temperature range for survival is 70° to 85° at an optimum humidity of 80%. The life cycle of the flea varies considerably in length.

### **Life Cycle**

1. Adult flea. \*
2. Adult flea lays eggs.
3. Eggs develop into larval stages. \*
4. Larvae become pupae with a cocoon (nothing kills the pupae at this stage).
5. Pupae develop into adult fleas.

\* These stages are susceptible to insecticides

### **Treatment**

Effective flea control involves two steps:

1. Eliminating fleas from the pet
2. Eliminating fleas from the environment

Severe flea infestations are best controlled by simultaneously treating fleas on the animal, in the house, and in the pet's outdoor environment on a regular basis.

Frequent vacuuming can help remove flea eggs and larvae from carpets and furniture. Vacuum bags should be disposed of immediately. Steam cleaning carpets is very effective, too. The pet's bedding should be washed and thoroughly dried. Insecticides can then be used to complete the in-home clean up. Insecticides selected for use in the home should combine instant and residual flea-killing power. Foggers are popular and effective; however, their mist does not penetrate underneath furniture, behind baseboards, and in closets. The area must be sprayed. Instead of being treated with a fogger, the entire house may be sprayed with appropriate insecticides.

Flea control outside the home should be aimed at areas where the pet spends most of its time. Grass and weeds should be mowed and the clippings removed. Within reason, areas where the pet spends its time under porches, in its doghouse, in the yard near the home, etc) should be sprayed or dusted with insecticides designed to kill fleas. Hand-held sprayers, garden hose attachments, and fertilizer spreaders are appropriate for insecticide application. Because of the flea's life cycle, insecticides used on the pet and on the premises may need to be applied more than once, be sure to follow package recommendations. There are a variety of flea products (insecticidal dips, shampoos, sprays, and powders) available at most retail stores. However, many of these products have been around for many years and are not without risk (e.g., marginally effective, short acting, some can be fatal). For a variety of reasons, including cost, some owners chose to use retail products without a

complete understanding of the relative risks because they simply do not read the label. One of the most significant misuses is that of permethrin dog-only products on cats. Permethrin use on cats can be lethal.

The flea products available here are:

**Advantage:** kills fleas, applied monthly

**Revolution:** prevents heartworms, fleas, intestinal parasites, ear/skin mites, moderate action on ticks, applied monthly

**Frontline Topical/Spray:** Kills fleas, ticks, applied monthly

**Sentinel:** Prevents heartworms, sterilizes fleas (prevents breeding)

**Capstar:** Kills fleas currently on pet up to 24 hours (a monthly preventative will be also be needed for control)

These products kill fleas rapidly, provide long-lasting action, and are safe. With the development of these new products (i.e., Advantage, Frontline, Sentinal, Capstar), flea control has become more effective and simple. As long as these products are used appropriately, the pets will act as the vector to “clean up” the environment. (Each pet must be treated monthly for complete control.)

*It is critical that any product be applied in accordance with label directions to optimize performance and help prevent adverse reactions. In the event that a pet has a reaction, owners should be strongly encouraged to have the pet examined. It is important that the original packaging be retained so that product identification can be made.*

**Prevention Is The Key...As someone once said, the best defense is a good offense, and this is true of flea control.**

