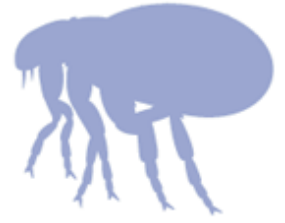




Flea Guide

Fleas – they make pets' lives miserable, and people itch at the mere thought of them. But how exactly do pets become infested? And how can we effectively prevent and treat them? To start off, we need to examine the biology and lifecycle of the flea. Then we will look at the different ways to break the lifecycle, prevent, and treat them.



A Flea's Life

There are actually many hundreds of species of fleas. However, the one we're most bothered by is the cat flea, *Ctenocephalides felis*. It is the most common species of flea found in the U.S. and it will readily infest dogs, cats, birds, humans, and other mammals. Fleas thrive in warm, moist environments and climates. Their main source of food is blood from the host (cat, dog, etc.). Flea saliva (like other biting insects) contains an ingredient that softens (or "digests") the host's skin for easier penetration and feeding. The saliva is very allergenic and irritating, which causes the characteristic itchiness seen in infested animals.

The 4 Life Stages

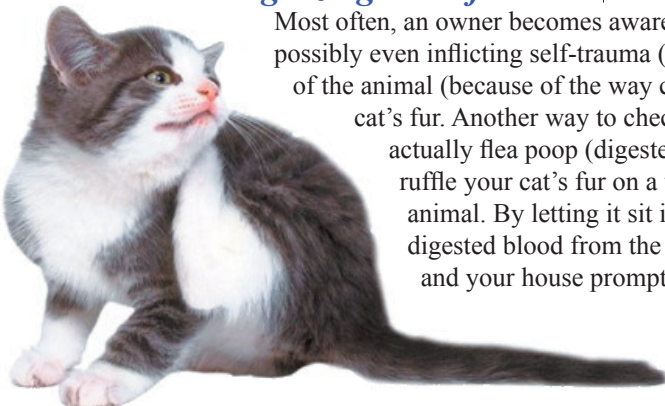
Which came first – the flea or the egg? For simplicity's sake, we'll start with the egg.

- 1. EGG** – The female flea lays white, roundish eggs (up to about 50 eggs per day! That's 500-600 eggs over a several month period). The eggs are not sticky like some parasite eggs. Actually, they readily fall off the host into the carpet, bedding, floorboards, and soil. The egg can take anywhere from 2 days to a few weeks to hatch, depending on environmental conditions.
- 2. LARVA** (plural = larvae) – The larva emerges from the egg with a chitin tooth (a hard spine on top of the head that disappears with age). It is about ¼" long and semi-transparent white in color. It will eat the feces (dried blood or "flea dirt") of adult fleas, along with some organic material found in carpet, bedding, and soil. The larval stage lasts from 5-18 days, depending on environmental conditions. Then the larva spins a silken cocoon and pupates.
- 3. PUPA** (plural = pupae) – The larva will stay as a pupa in the cocoon for a variable amount of time, as short as 3-5 days, or as long as a year. Stimuli such as warm temperatures, high humidity, or even the carbon dioxide and vibrations from a passing animal will speed up the pupa stage, causing the flea to emerge from the cocoon sooner.
- 4. ADULT FLEA** – The adult flea emerges from the cocoon when the time is right and will search out food. It prefers to live on the animal with a diet consisting of blood meals from the host. The adult is very flat side to side and has hair-like bristles on its body that helps it navigate through pet hair. A flea has 3 pair of legs; the hind-most is used for jumping extraordinary distances. Actually, fleas are very well-known for their jumping abilities. They accelerate 50 times faster than a space shuttle, and can jump distances of 7" high and 13" long (about 150 times its own length). Without their exoskeleton, they would be smashed from the velocity of a jump, and especially on the landing.

The flea's life cycle is quite variable, as you can see, depending on environmental conditions. In Michigan, however, our flea season kicks off around April and concludes around November – the worst part of the season being fall (when many indoor-only cats become infested).

Recognizing an Infestation

Most often, an owner becomes aware of a problem after the cat has started licking or scratching excessively, possibly even inflicting self-trauma (like raw skin or scabs). We see most fleas around the head-end and rear-end of the animal (because of the way cats sleep curled up). You may even see adult fleas diving in and out of your cat's fur. Another way to check for fleas is by parting the cat's fur and looking for "flea dirt" – which is actually flea poop (digested blood). Flea dirt can look like flecks of ordinary dirt. To tell the difference, ruffle your cat's fur on a white surface and put a few drops of water over the dirt that falls off the animal. By letting it sit in water drop or by smearing it, you will see a red color tinge (which is the digested blood from the flea). This is a definitive diagnosis of fleas, and you should treat your cat and your house promptly.





Flea Guide

Flea Prevention and Treatment

Methods of prevention and treatment differ depending on the species being treated; however, we will focus primarily on the cat and The Cat Practice's general recommendations.

Prevention

Early prevention is key to keeping your cat from infestation. Starting a regular flea control regimen like Advantage® or Revolution® before the beginning of flea season allows cats to be healthy and happy all year. Especially in the fall months, we see several indoor-only cats becoming infested with fleas; therefore, it's important to make sure your cat is treated before fleas become a problem. Trust us, it's 100 times easier to prevent them than to kill them all after an infestation (which includes treating all the microenvironments in your house with foggers and sprays).

We do not recommend using over-the-counter (OTC) flea prevention products (including medications and collars), for several reasons. Some of these products are not developed using the important safety guidelines set up by the Food and Drug Administration (FDA). We have seen many cats come in with severe reactions, hair loss, or other problems as a result of using these OTC treatments. Also, since they are not available by prescription, they just don't work as well – so why waste your time and money?

Treatment

Once your cat is infested with fleas, they must be treated. This includes killing the fleas on the animal, preventing them from coming back by disrupting the life cycle, and by treating the microenvironments in your house. Microenvironments are the places in your house that fleas are being hatched and are growing through their life cycle – where eggs may have fallen off your cat and are hatching in carpet, bedding, etc.

As with any medication, vaccination, or product, and even when labels are read and directions are followed, reactions can occur. If your cat experiences any vomiting, labored breathing, or lethargy following application of any flea treatment, contact your veterinarian or emergency center immediately.

Topical Treatments

There are a number of topical or oral treatments available for cats, however The Cat Practice's favorites include Advantage® and Revolution®, both topically applied monthly to kill existing fleas and disrupt the flea life cycle. These products are applied to the base of the back of the cat's head (high enough up that the cat cannot turn its head and lick the spot). The liquid has a bitter taste if licked and can cause excessive salivation (which is self-limiting and completely benign and will not cause and other reactions).

Advantage® (produced by Bayer Healthcare®) kills fleas and keeps further populations from developing, because it effectively breaks the flea life cycle, attacking it in multiple stages. Advantage® stops fleas from biting in 3 to 5 minutes after application, and starts killing them within one hour, and all are killed within two hours. After 12 hours, 98-100% of existing adult fleas are dead. Re-infesting fleas start dying within one hour and all are killed within two hours. Advantage® also kills larvae within 20 minutes of contact. Once Advantage® is applied to your cat, it spreads on the surface of the skin, aided by body movement, to provide whole body coverage. The product's chemistry causes the flea's nervous system to become impaired, and the flea dies. Advantage® is water resistant so it's effective even after bathing or exposure to rain. Advantage is so gentle that it is safe for kittens as young as 8 weeks. Bayer® has always had the policy of selling Advantage® only through licensed, practicing veterinarians with a doctor-client-patient relationship. This is done to ensure you and your cat are getting the best counsel from the person who knows pets and their healthcare best – your veterinarian. A single Advantage® treatment will provide flea control for up to one month on cats. The cat may be treated as often as once weekly, if necessary.

Revolution® (produced by Pfizer Animal Health®) is a broad spectrum treatment that not only kills adult fleas and prevents their eggs from hatching, but also treats and controls ear mites (*Otodectes cynotis*), roundworms (*Toxocara cati*), hookworms (*Ancylostoma tubaeforme*). Revolution® can be used in kittens at least 8 weeks of age, and should be used monthly (like Advantage®) to treat and prevent flea infestations. It works similarly to Advantage® and is also available by prescription only through your veterinarian.



Flea Guide

Oral Medications

Flea “pills”, such as Program® and Sentinel® work by stopping the larva from emerging from the flea egg. Fleas ingest the blood of animals on these medications, and the female fleas then lay eggs that are *unable to hatch*. They do NOT kill adult fleas. These medications merely break the flea life cycle and stop the flea problem when used in conjunction with adult-killing treatments (such as Advantage® and Revolution®).

Shampoos and Dips

Shampoos or dips may be used to treat an ongoing infestation on your cat. However, shampoos have no residual effect and unless you use a topical preventative (like Advantage® or Revolution®), the fleas can (and will) come right back. Shampoos are used mostly in kittens that are too young or debilitated to safely apply Advantage® or Revolution®.

Collars

There are basically two types of flea collars. One type emits a toxic gas that kills fleas in the head and neck area, and the second type contains a substance that is absorbed into the subcutaneous fat layer of the animal that is supposed to kill the fleas. Which much experience with cats and fleas, we at The Cat Practice have concluded that collars are useless in prevention or treatment of fleas. Probably the best use for them is to place the type that emits the gas inside your vacuum bag to kill any fleas or eggs that you may vacuum up when treating the microenvironments in your house.

Treating Microenvironments in Your House

Flea control doesn't stop after your pet has been taken care of! Only about 10% of the flea population (mainly the adults) are on your pet. The flea eggs, larvae, pupa, and the few adults that reside in the carpeting, bedding, and living areas (called microenvironments) make up approximately 90% of the flea population. Neglecting this population of fleas will ensure a re-infestation in no time.

Foggers and Sprays

There are a few commercially available products that act as “bug bombs” to fumigate your house – however, these are very inconvenient seeing as you need to completely vacate the premises for a certain amount of time while the product works. We recommend a premise spray (called Siphotrol®) that can be used safely on carpet, hard surfaces, bedding, pet sleeping areas, rugs, etc. to kill adult fleas, eggs and larvae.

Vacuuming and General Decontamination

Daily vacuuming is very important for picking up adults, eggs, larvae and pupae before they develop. Putting a flea collar in the vacuum bag and emptying the bag frequently are also important; otherwise, the fleas will hatch, develop, and leave the vacuum to re-infest the living quarters. Wash all bedding, clothing, and removable furniture covers in hot water. Spray all carpets, rugs, and mats with a premise spray – these easily over-looked spots are perfect for fleas to lay eggs and hatch.

As you have read, flea prevention is the key. Why go through all these decontamination procedures if you don't have to? Flea prevention through your veterinarian is relatively inexpensive and is completely worth not having to mess around with cleaning up an infestation.

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