

Fleas

Dogs, cats and rabbits may be infested with the cat flea, *Ctenocephalides felis*.

Consequences of flea infestations: though fleas certainly are a nuisance, they can be much more. Fleas can cause the following diseases:

- *Plague:* though many people think plague is a thing of the past, rodents in many parts of California do carry plague. Cats that hunt and contact these rodents (either outdoors or within the home) may acquire fleas infected with *Yersinia pestis*, the bacterium that causes plague. Plague is treatable with antibiotics, but can progress to a fatal illness if untreated.
- *Flea bite allergies/flea allergic dermatitis:* some dogs and cats are allergic to the bite of an adult flea; in these patients, a single flea bite can cause up to two weeks of very severe itching. This itching can cause breaks in the skin that allow bacteria to invade and establish an infection.
- *Flea anemia:* in heavy infestations, fleas can deplete the host of red blood cells, resulting in an anemia that can be deadly
- *Feline infectious anemia (FIA):* this is caused by a bacterium that invades the red blood cells, *Mycoplasma hemofelis*, formerly called hemobartonella. FIA can cause severe systemic disease or even death.
- *Cat scratch fever/bartonellosis:* this is caused by multiple species within the *Bartonella* genus; it does not make the cat sick in most cases, but can be spread to humans and cause severe systemic disease.
- *Tapeworm infestation:* fleas may carry the larval stages of *Dipylidium caninum*, which the pet ingests when chewing at the fleas. Within the dog or cat the tapeworm matures, and three weeks later tapeworm segments appear at the pet's rear end. These segments are similar in appearance to grains of rice; though these are not a serious problem, it is unsightly and treatment is recommended.

Lifecycle: the flea life cycle is constantly active; it is three weeks in length on average, though is more rapid in warmer conditions. About one third of an infestation is in the egg stage. Adult females lay eggs on the host, which then fall off and hatch in the environment. Just over one half of an infestation is in the larval stage; larvae feed on flea feces ('flea dirt') that fall off of the host, and may pick up tapeworm eggs. After three molts, larvae spin a cocoon and pupate. When it senses a host nearby, the adult flea emerges from the cocoon to find the host and take a blood meal. If a home has been empty for a period of time, all of the cocoons will be lying in wait for the pet's return.

Common misconceptions: many people think their pet is unlikely to have a flea infestation because they are indoor-only, because the human members of the family do not have bites or because no fleas are visible. However, fleas thrive in warm indoor environments, they will not bite people until they saturate the animals in the house and, as cats and dogs are adept at grooming, fleas may be very hard to detect. Many people also think it is safe to stop flea preventatives in the winter- however, fleas can easily survive the winter indoors, and as the temperature is cooler during this time of the year (and thus the flea life-cycle is slower) this is the best time to eradicate an infection. It can be next to impossible to clear an infestation in the spring and summer.

Flea preventatives: these should be used year-round. There are many available products, including spot-ons, shampoos, collars and oral tablets, which Drs. Schatzle and Meisner would be happy to discuss with you during your pet's physical examination. The products recommended at La Costa Animal Hospital are those that contain spinosad; Comfortis® contains spinosad only, and may be given to dogs and cats once monthly. Trifexis® contains spinosad as well as milbemycin oxime, which prevents heartworm and intestinal parasites, and may be used instead of Comfortis® in dogs with an up-to-date heartworm test. Spinosad is called an adulticide as it kills adult fleas before they can lay eggs, but does not kill eggs, larvae or cocoons.

Flea treatment: in order to treat a flea infestation, both the home and the pet must be treated.

Treatment of the home may involve the services of an exterminator or do-it-yourself treatments including flea 'bombs', borax treatment of surfaces in the home followed by thorough vacuuming, or a variety of other methods.

Treatment of the pet should involve at minimum an adulticide such as Comfortis® or Trifexis®; as an adulticide will kill an adult flea before it can lay eggs, adulticides alone will clear an infestation, but may take weeks to months to do so. An infestation can be cleared more quickly if, in addition to an adulticide, a compound that targets younger stages is also used. These products include, among many others, Program®, which is given to dogs orally and to cats either orally injected every six months and Advantage® and Vectra®, which are spot-ons. Despite all of the above treatments, it can take months to clear a home of an infestation.

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