



28966 Information Lane  
Easton, Maryland 21601  
(410) 822-8505 (410) 758-3404

## Vaccine Protocol for Cats

At Veterinary Medical Center, we follow the vaccine guidelines developed by the American Association of Feline Practitioners (AAFP). The AAFP recommends all cats be vaccinated against the core diseases of rabies and distemper (Feline Viral Rhinotracheitis, Calicivirus, and Panleukopenia). The AAFP recommends the feline leukemia vaccine for kittens (due to their increased susceptibility of infection) and for at-risk cats (cats that go outside unattended, and cats that are exposed to Feline Leukemia positive and untested cats). Other available vaccines are not recommended by AAFP for most cats or our hospital.

### Rabies Vaccine

Rabies virus is a fatal infection typically transmitted through bite wounds, open cuts in the skin or onto mucous membranes from the saliva of the infected animal. There is no treatment available once your cat is infected with rabies. This virus has very real and serious human and pet implications. Our hospital uses the PUREVAX® feline annual rabies vaccine. This vaccine is approved and safe to give to cats as young as 12 weeks of age. This vaccine has no adjuvant, which reduces the risk for injection-site vaccine reactions.

**Note: All cats, including indoor cats, are required by Maryland state law to be vaccinated against rabies.** Consider the following:

- There is a small, but real potential for rabies to enter your household. Wildlife such as bats, raccoons or skunks may bring the virus into your house and expose your cat to rabies.
- There is a legal liability should an unvaccinated cat bite or scratch a person.
- Rabies is a fatal disease for both humans and pets and is found here on the Delmarva Peninsula.

### FVRCP (Distemper) Vaccine

Our hospital uses the PUREVAX® feline FVRCP vaccine to protect cats against the three highly contagious viruses, feline herpesvirus, feline calicivirus and feline panleukopenia. The initial kitten series includes

vaccine administration every 3-4 weeks with the last vaccine administered after 16 weeks of age. The vaccine is administered again at 1 year of age and then every 3 years.

- Feline Herpesvirus (Feline Rhinotracheitis) - Clinical signs are associated with upper respiratory infection signs such as sneezing and discharge from the eyes and/or nose. This virus can become latent (inactive) in some cats. These “carrier” cats may have long-term infections that reactivate in times of stress or with treatment that suppresses the immune system.
- Feline Calicivirus - Clinical signs include respiratory signs (sneezing, eye discharge, and nasal discharge), oral ulcers, anorexia, and joint pain (lameness or stiffness).
- Feline Panleukopenia (Feline Distemper Virus) - This virus most commonly attacks the intestine, bone marrow, and brain and can cause severe disease, including death. Symptoms are most severe in kittens. Clinical signs may include severe diarrhea, vomiting, dehydration, fever, lethargy and anorexia. The immune system is often compromised, resulting in secondary infections. This virus is very resistant in the environment and may survive for over a year.

### **FeLV (Feline Leukemia) Vaccine**

Our hospital uses the PUREVAX® FeLV vaccine to protect cats and kittens against the feline leukemia virus. Recently, the AAFP (American Association of Feline Practitioners) has recommended vaccinating all kittens against FeLV in their first year of life. After the initial kitten series (2 vaccinations 3-4 weeks apart), this vaccine is only annually administered to cats that spend any amount of time outdoors or are exposed to FeLV positive or untested cats. A FeLV blood test should be performed prior to vaccination.

Feline leukemia is a significant cause of illness and death in cats. The feline leukemia virus is spread through grooming, sharing food or water dishes, or biting. Survival time for cats infected with FeLV ranges from 6 months to 3 years after infection. Clinical signs associated with a viral infection are not specific and may include immune-mediated diseases, tumors, bone marrow disorders including anemia, and secondary infections.



28966 Information Lane  
Easton, Maryland 21601  
(410) 822-8505 (410) 758-3404

## Parasites of cats

### Heartworm Disease

Heartworm disease in cats is rare, however infection with this parasite can cause serious disease. Cats are not the primary host for heartworms, therefore when infected juvenile worms may only be present. Most infected cats are asymptomatic; or they may have non-specific symptoms like intermittent vomiting unassociated with eating, or intermittent cough related to asthma type disease.

Rarely cats may present with the severe disease: Heartworm Associated Respiratory Disease (HARD), which is associated with the death of developing juvenile worms. Cats may present with cough, wheezing, and difficulty breathing. If adult worms are present, their death can potentiate HARD signs. Sudden death can occur and is thought to result from a condition similar to acute respiratory distress syndrome in people.

### Gastrointestinal Parasites

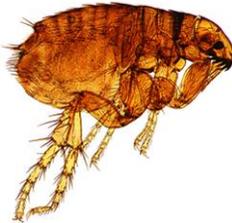
Cats are very prone to developing intestinal parasitism, with prevalence rates as high as 45 percent. These infections may come from other cats, eating raw meat, or ingesting bird/rodent prey. With their fastidious grooming habits it is easy to ingest a parasite egg or cyst off the fur while licking/grooming. The adult parasites can be wormlike (e.g., stomach worms, roundworms, hookworms, tapeworms) or one-celled (e.g., Isospora, Giardia, Toxoplasma) organisms. Most cats with infections may have no clinical symptoms and normal stools. Other signs are nonspecific, and may include a dull haircoat, cough, gastro-intestinal upset, poor appetite, or a pot-bellied appearance. Some of these parasites have the potential of infecting humans such as hookworms and roundworms.

In cats, prevention of heartworm and intestinal parasite infections are done by limiting exposure to vectors spreading the disease by keeping your cats inside, as well as, monthly medication to kill the parasites. We recommend topical Revolution monthly. Revolution treats intestinal parasites, in addition to killing the external parasites such as fleas, ticks, and ear mites. Monthly oral Heartguard for cats is also effective in preventing heartworm disease and intestinal parasitism in cats.



28966 Information Lane  
Easton, Maryland 21601  
(410) 822-8505 (410) 758-3404

## Flea Control in Cats



### My cat always seems to have fleas. What can I do?

Successful flea control involves both eliminating fleas from your cat and controlling fleas in your environment. Dogs and cats share the same fleas, and fleas can travel from one animal to another. Thus, it is important that all pets in your home are on a flea preventive program.

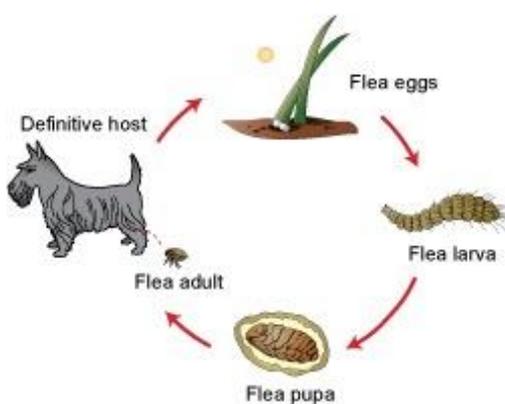
With the many choices we have today, we can provide you with the safest and most effective flea preventive for your pet's needs. However, when it comes to environmental control, it is important to understand the flea life cycle.

### What is the life cycle of the flea?

**There are four stages to the flea life cycle, namely the egg, the larva, the pupa and the adult.**

**Flea eggs** are whitish and about 0.5 millimeter (mm) (1/32") in length. Adult fleas lay eggs after taking a blood meal. The eggs are initially laid on the dog's skin but fall off into the environment, where they constitute approximately 50% of the total flea population. Eggs may hatch in 14-28 days, depending on environmental conditions. High humidity and temperature are prime.

**Flea larvae** are about 2-5 mm (1/8" to 1/4") in length. They feed on organic debris found in their environment. They dislike bright light and move deep into carpet fibers, wood cracks, or under furniture or organic debris. Flea larvae prefer warm, dark and moist areas. Our climate-controlled homes offer an ideal environment for the flea larvae to thrive.



Used Under License  
Copyright© Lifelearn Inc.

The **flea pupae** produce a protective silk-like cocoon that is sticky and well camouflaged. With warmth and humidity, pupae become adult fleas in 5-10 days. The adults do not emerge from the safety of this cocoon unless environmental conditions are right. Once fleas emerge from the cocoon they can only exist for a few days unless they are able to feed. Pre-emergent adult fleas can survive within the cocoon for up to 9 months. During this time they are resistant to insecticides applied to the environment. This is important to remember because adult fleas may emerge from their pupae into the environment a considerable time after you apply insecticides in your home.

The **flea adult**, unlike the larvae, is attracted to light and movement, looking for a host to feed upon. Two days after the first blood meal, female fleas begin egg production. In normal circumstances the adult female will live up to three weeks, laying approximately 40 eggs per

day. The entire life cycle, from egg to adult flea can be completed in as little as 14-28 days depending on environmental conditions.

**Apart from irritation, are fleas particularly harmful?**

Fleas can cause anemia in heavy infestations, especially in young or debilitated dogs. A single female flea can consume up to 15 times her body weight in blood over the several weeks of her adult life. In addition, fleas can carry several diseases, including *plague*, and act as vectors (hosts) to spread one of the most common tapeworms of the dog and cat, *Dipylidium caninum*.

**How do I prevent fleas on my dog or cat?**

We recommend using topical Frontline to kill adult fleas. We also recommend oral Sentinel, which has an insect growth regulator, as well as heartworm preventative. This prevents development of the immature flea to the adult. Vacuuming your house and cleaning bedding weekly can help remove fleas from the environment. Pay special attention to cleaning where your pet is resting, and discard the vacuum cleaner bag after use.



28966 Information Lane  
Easton, Maryland 21601  
(410) 822-8505 (410) 758-3404

## Heartworm Testing and Prevention, Parasite Prevention

Heartworm (*Dirofilaria immitis*) is a large spaghetti-like worm that lives in the heart and lungs of infected dogs and causes heart/respiratory failure. The lifecycle of the heartworm is 6-8 months. Immature larvae are spread to dogs through a mosquito bite. Once in the dogs bloodstream, the larvae mature over the next 6 months, as they migrate from blood to the heart and lungs. Once the larvae reach adulthood, they breed, producing the first stage larvae called microfilaria. These larvae are free living in the blood-stream. Once a mosquito bites the infected dog, the larvae is ingested by the mosquito and matures to a stage called L3. The life-cycle starts again when the mosquito bites another dog.

All puppies should be started on heartworm preventative at 8-12 weeks of age. The dosage will be adjusted for weight as your puppy grows. The heartworm tablet is actually treating the early stage of heartworm infection, by killing the L3 stage larvae spread by the mosquito. We recommend Sentinel or Heartguard once monthly all year around in this area due to the heavy mosquito population.

Heartworm Testing should be done at 6months to 1 year of age, and is usually done at the first adult wellness exam.

### Flea/Heartworm Preventative

Flea Preventative- We recommend Frontline as a flea and tick preventative. This is a topical medication that is administered once monthly. Frontline is considered one of the safest flea adulticides- it is not a systemic medication. The active ingredient is fipronil, which is taken into the glandular cells of the skin and remains on the pets' hair for 3-4 weeks. Contact with fipronil paralyzes and kills the adult fleas within 12hours.

Heartworm Preventative- We recommend Sentinel as heartworm /intestinal parasite disease preventative. This is a systemic medication that kills the immature larval heartworms. Sentinel also contains an insect growth inhibitor, which prevents flea eggs from hatching; it is used in conjunction with frontline.

## Heartworm Lifecycle in Dogs and Cats

