



Overview

What is a parasite?

A parasite is a plant or an animal that lives on or inside another living organism (host). A parasite is dependent on its host and obtains some benefit, such as survival, usually at the host's expense.

Are there different types of parasites?

There are two basic types:

Internal parasites (endoparasites) such as heartworms, hookworms and roundworms, live *inside* the body of a plant or animal and produce an infection within the host.

External parasites (ectoparasites) such as fleas, ticks, ear mites and sarcoptic mites, live *on* the body of the host and produce an infestation.

How dangerous are parasites to my dog and/or cat?

It depends on the type of parasite, the degree of infection or infestation, and your pet's reaction to the parasite. For example, a mild flea infestation may be of no consequence to some pets, while others may show hair loss, itching and discomfort. Severe flea infestation may lead to significant skin disease, anemia or death, especially in young puppies and kittens. Infestations by ear mites can cause otitis, or inflammation of the external ear, that can be complicated by secondary bacterial infections. Dogs and cats may have odor and a crusty brown discharge from their ears. Sarcoptic mites in dogs can result in severe itchiness, hair loss and discomfort. These mites also affect humans who acquire them from contact with affected dogs.

Canine and feline heartworm is a completely preventable and potentially deadly parasite. Immature worms are transmitted to dogs and cats during the bite of mosquitoes. The immature worms migrate and mature in the dog/cat and eventually become adult heartworms in the large blood vessels in the lungs or the right side of the heart. Heartworms can damage the blood vessels and lead to secondary damage of the heart, resulting in heart failure. Dogs usually are presented to veterinarians for coughing, lethargy, exercise intolerance or loss of appetite. Heartworm is much easier to prevent than to treat, because prevention is safe, effective and easy to administer, while dogs and cats may be at risk from serious illness from adult heartworms.

How long will it take Revolution® (selamectin) to get rid of my flea infestation? Why am I still seeing fleas after application of Revolution®?

It's important to realize that the fleas you see on your dog are only a small percent of the entire flea population. Fleas lay eggs that fall off your dog into your home or where your dog lives or sleeps. These eggs hatch and become flea larvae that spin cocoons and become pupae. These pupae will eventually develop into pre-emerged adult fleas and remain in their cocoons until stimulated to emerge by the presence of a host. Only 5% of the flea population exists as adult fleas; the remainder is immature flea

stages that are too small for you to see. Flea eggs make up 50%, while flea larvae make up 35% and pupae 10%.

Revolution® kills adult fleas and prevents flea eggs from hatching, so once you apply Revolution® any adult fleas will be killed and flea reproduction will stop. But remember that the fleas you see on your dog are only 5% of the problem. In order for your flea infestation to be resolved, all of the immature stages in your pet's environment must become adult fleas that are killed by contact with your dog. This may take several months, depending on the degree of your flea infestation and the temperature (which affects the length of the flea life cycle). This means that you can expect to see a greater than 90% control of your flea infestation during the first month but because adult fleas will emerge from cocoons in your environment, you may see a few fleas for several months until the flea population is destroyed. So you may need a little patience; and don't be concerned about seeing small numbers of adult fleas on your dog while you are destroying the flea population. When the environmental flea population has been destroyed, the problem will end, but keep using Revolution® to prevent a new flea infestation from beginning.

Can my dog get ear mites? I thought only cats can get them.

Ear mites affect both dogs and cats, although they seem to be involved more frequently in feline ear infections. However, they can still be a problem for dogs and can be spread from animal to animal and even from dogs to cats. Ear mites feed on the lining of the ear and cause inflammation, redness and discomfort. Dogs and cats may rub or scratch their ears and you may even notice mild hair loss or scratches at the base of the ears. Bacterial infections may also result from the damage to the ears caused by the mites. Revolution® is highly effective against the parasite that causes ear mites (*Otodectes cynotis*). Because some animals may harbor mites, yet have no clinical signs of infestation, all animals within a household should be treated, not just the visibly affected dog or cat.

My vet told me my dog has "scabies." What's that?

Scabies is the name of the disease caused by the mite *Sarcoptes scabiei*. This is also called "sarcoptic mange." These mites burrow into the skin and cause intense itching, hair loss and inflammation of the skin. Secondary bacterial infections can also result from the skin's reaction to the mites. Sarcoptic mites are transmitted from animal to animal by direct contact, and some animals may be carriers of these mites but not show any clinical signs of disease. Sarcoptic mites can also affect humans when they are in direct contact with affected dogs. Sarcoptic mange can be easily treated with Revolution®, which kills the mites. Because some animals harbor mites but don't show clinical disease, all animals within the household should be treated, not just the visibly affected dog.

Why did I find a tick on my dog while it is on Revolution?

Revolution® controls tick infestations only due to the American Dog Tick (*Dermacentor variabilis*), a tick commonly found on dogs. There are other common species of ticks that are not killed or controlled by Revolution. Your veterinarian can recommend appropriate products to control or kill ticks common to your area. For the control of the American Dog Tick, Revolution should be applied once a month; however, your veterinarian may recommend a second administration applied 14 days after the first dose if your dog has a heavy tick infestation and/or recommend additional tick control methods. It may take up to 5 days to kill the majority of ticks on your dog.

Are flea bites harmful or just annoying?

Dogs and cats differ in their response to flea bites. When fleas bite, they deposit flea saliva into skin, which can cause an allergic reaction resulting in flea allergy dermatitis, also known as flea-bite hypersensitivity, which causes the skin to become inflamed and lose hair. Secondary bacterial infections may also complicate the underlying flea allergy. Dogs and cats with flea-bite hypersensitivity commonly are itchy and frequently have hair loss at the base of the tail, extending up the back. Dogs and cats sensitive to flea bites may be very uncomfortable due to their flea exposure, while less-sensitive dogs may be unaffected by them. When flea infestations are severe and blood loss is high from feeding, serious illness may result, especially in puppies. Severe anemia and death may result from severe flea infestations. Revolution® will effectively prevent the establishment of fleas and control flea infestation following application. Use of Revolution® will ensure that treated animals will be free of flea infestation. In clinical trials Revolution® was shown to improve the clinical signs associated with flea allergy dermatitis as a direct result of eliminating fleas from the animals and their environment.

Are parasites a danger to my family?

Although dogs and cats may be affected by a diverse group of parasites, most of them affect only dogs/cats and pose no risk for humans. There are a few parasites which pet owners should be aware of, not only because of the illness they cause in dogs and cats, but because they may also cause human disease. Diseases transmitted from animals to humans are called zoonotic diseases. Ingestion of roundworm eggs from soil can cause blindness, nervous system damage, or damage to internal organs. Hookworm infection may result in red tortuous skin lesions, and Sarcoptes mites cause an itchy red rash. Your veterinarian can recommend methods to prevent, treat or control many canine and feline parasites to reduce the chance of human exposure and to keep your pet healthy.

Revolution® is generally well-tolerated. In studies, <1% of cats and dogs experienced digestive upset. Approximately 1% of cats experienced temporary hair loss at the application site. Do not use in sick, weak or underweight animals.

*www.Revolution4Dogs.com
*www.Revolution4Cats.com

Fleas

What you should know about fleas.

Your pet's scratching could be an early sign of fleas

Pets Most Often Affected

All dogs or cats, from puppies/kittens to seniors



What You Should Know

Adult fleas are small, flat, wingless, and have three pairs of jointed legs. They have siphon-like mouthparts and feed on the blood of their hosts by piercing and sucking. Fleas are just about everywhere – everywhere there are animals – including birds and many mammals.

Dogs and cats are prime hosts, but three of the four stages of the flea's life cycle are spent away from the host. The life-cycle stages are egg, larva, pupa and adult. Under optimal conditions, the life cycle averages about 28 days. When conditions are not favorable, the life cycle can last longer. Because fleas prosper in warm, humid environments, temperature and humidity changes can affect the length and success of their life cycles. The adult flea spends all of its time on a host, and this is the life-cycle stage pet owners usually encounter.

It is not true that adult fleas hop from the host animal back to the environment and then to another host. A flea can survive only a few days if it is taken off the host and left in the environment.

In suitable environments, fleas can breed indoors all year. Fleas on dogs and cats can result in obvious irritation and itching. But they can also trigger a variety of more serious allergic reactions, including dermatitis – an inflammation of the skin. Fleas can also transmit tapeworms. Because fleas feed on blood, blood loss can result in anemia, with puppies at particular risk.

Scratching may be the first sign that your dog or cat has a problem with fleas. This scratching can lead to hair loss and skin infections. Look for irritated areas on your pet's back, abdomen, neck, rump and on the inside of the thighs. If you think your dog or cat has fleas, call your veterinarian.

Signs

- Scratching
- Hair loss
- Unusual amount of chewing and licking

- Black specks on pet's skin and coat

What You Can Do to Help

Your veterinarian can recommend a preventive treatment such as Revolution® (selamectin).

It's important to remove fleas, not only from your pet, but also from his/her environment.

Use Revolution® to kill fleas (*C. felis*) and prevent flea eggs from hatching. Ask your veterinarian about Revolution®.

Revolution® is generally well-tolerated. In studies, <1% of cats and dogs experienced digestive upset. Approximately 1% of cats experienced temporary hair loss at the application site. Do not use in sick, weak or underweight animals.

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*www.Revolution4Cats.com

Ticks



Male American Dog Tick Female American Dog Tick

What You Should Know About Ticks

Ages Dogs Are Most Often Affected

All dogs from puppies to seniors

What You Should Know

The American dog tick is probably the most widespread tick species in the United States, and the one most commonly found on pets. The American dog tick is the primary carrier of Rocky Mountain spotted fever, a disease that can be fatal to humans in severe cases.

Signs

Ticks attach themselves to a dog's skin, and feel like bumps when you run your hands through your dog's hair. Contact your veterinarian for tick species identification.

What You Can Do to Help

With monthly dosing, Revolution® (selamectin) controls American dog tick (*D. variabilis*) infestations in dogs and puppies as young as 6 weeks. Ask your veterinarian about Revolution.

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Ear Mites

These troublesome pests are unpleasant for pet and owner alike.

Pets Most Often Affected

All dogs and cats, from puppies/kittens to seniors

What You Should Know

Ear mites are highly contagious and pass easily from pet to pet. *Otodectes cynotis*, the ear mite of dogs and cats, accounts for 5–10 percent of otitis externa cases in dogs. Otitis externa, an inflammation of the external ear, results in frequent head shaking and pawing, an unpleasant odor, and discharge.

Ear mites are easily transmitted among animals and are spread by direct contact. These oval mites are fairly large, and look like coffee grounds in the dog's ear. These troublesome pests do not burrow in the ear; rather, they live on the ear's surface.



Signs

- Ear infection
- Intense scratching or head shaking
- Red-brown or waxy ear discharge
- Itching skin around ears, head, neck
- Thick crust around outer ear
- Possible crust and scales on neck, rump, and tail

What You Can Do to Help

Your veterinarian can recommend preventive treatment such as Revolution® (selamectin).

Monthly use of Revolution® treats and controls ear mite (*O. cynotis*) infestations in dogs, and in puppies as young as 6 weeks. Ask your veterinarian about Revolution.

Revolution® is generally well-tolerated. In studies, <1% of cats and dogs experienced digestive upset. Approximately 1% of cats experienced temporary hair loss at the application site. Do not use in sick, weak or underweight animals.

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Sarcoptic Mange (scabies)

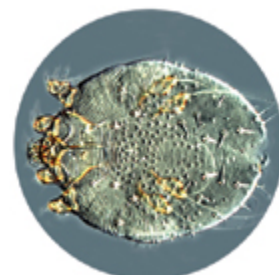
Hair loss and skin infections can result when scabies mites affect your pet.

Pets Most Often Affected

All dogs, from puppies to seniors

What You Should Know

Mange, or scabies, is a broad term that describes skin disease. Mange is caused by microscopic mites that lay eggs under a dog's skin. Scabies mites are round and are so tiny that they are barely visible to the naked eye.



These types of mites tend to prefer areas on a dog with no hair or very little hair. Mange often results in severe skin inflammation, which can trigger intense itching and eventual hair loss. Scratching may cause a secondary infection in your pet. Mange is easily transmitted to other dogs and can be transmitted to humans.

Signs

- Intense itching, scratching and biting, especially around face, chest, legs, elbows, ears, or hocks (ankles)
- Small red bumps
- Hair loss
- Crusty scabs

What You Can Do to Help

Your veterinarian can recommend preventive treatment such as Revolution[®] (selamectin).

Monthly use of Revolution[®] treats and controls scabies (*S. scabiei*) infestations in dogs, and in puppies as young as 6 weeks.

Ask your veterinarian about Revolution.

Revolution is generally well-tolerated. In studies, <1% of cats and dogs experienced digestive upset. Approximately 1% of cats experienced temporary hair loss at the application site. Do not use in sick, weak or underweight animals.

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