

# Zoonotic Parasites

Zoonotic parasites fall into two groups: internal and external. Roundworms, hookworms, tapeworms, heartworms, whipworms and giardia are among the internal parasites that can infect a dog. Examples of external parasites include fleas, ticks and mites.

Your veterinarian can treat an outbreak of both internal and external parasites in dogs. More importantly, your veterinarian can help prevent an infection from occurring.

## Roundworms

**WHAT ARE THEY?** Of all the zoonotic parasites found in dogs, roundworms are the most common. Virtually every puppy is born infected with this parasite. Although roundworm infections become less prevalent with age, older dogs can pick up an infection from contaminated soil. Unless your dog is treated for these parasites, they may pose a threat to both your dog and your child. In puppies, roundworm larvae penetrate the small intestine and are carried by the bloodstream to its liver and then its lungs. From there, the roundworms may move up the trachea where the dog may cough them up only to swallow them again. The larvae then mature and produce eggs that contaminate the environment. As the puppy grows, the worms travel to its muscles and form cysts. The worms ultimately lie dormant but can become active at any time during a dog's life, even during pregnancy. During pregnancy, the roundworms migrate to the lungs of developing puppies and into the mother's milk, repeating the life cycle.

**HOW DO HUMANS BECOME INFECTED?** Children can become infected with roundworms by playing in dirt or sand that has been contaminated by a dog's fecal material and putting their dirty fingers in their mouth.

**WHAT DO THEY CAUSE?** Although roundworm eggs do not develop to maturity in humans, their larvae can hatch in a child's stomach, migrate through his or her body and form cysts in body tissue. Children infected with roundworms can suffer a variety of symptoms that are often misdiagnosed as the flu or growing pains. Approximately 10,000 cases of roundworm are diagnosed each year. Its consequences are not

worth risking when a few simple precautions can greatly reduce the incidence of this infection.

## Hookworms

**WHAT ARE THEY?** Hookworms are parasites that attach to the dog's intestinal wall. If left untreated, hookworms can cause intestinal bleeding, anemia and diarrhea in your dog. And as few as 100 hookworms can kill a puppy.

**HOW DO HUMANS BECOME INFECTED?** Hookworms from infected animals are deposited in the soil where they hatch into larvae. These larvae can penetrate through skin or be ingested, presenting a risk for children who walk barefoot in contaminated soil or sand or who put dirt in their mouth.

**WHAT DO THEY CAUSE?** When a hookworm penetrates the skin, it will cause a lesion. Additionally, children who are infected may suffer from chronic intestinal bleeding. As a result, they may experience anemia, abdominal pain and diarrhea. Hookworms can also cause malnutrition and even stunt a child's growth.

## Whipworms

**WHAT ARE THEY?** Whipworms are, by far, one of the most difficult parasites to eradicate in dogs, since female whipworms can produce up to 2,000 eggs a day. In addition, upon entering the environment through a dog's feces, the eggs can survive in the soil for years, even in the coldest climates. As common as roundworms in certain parts of the country, whipworms afflict approximately one out of every seven unprotected dogs.

**HOW DO HUMANS BECOME INFECTED?** Like many other intestinal parasites, whipworms can infect a child who comes in contact with contaminated dog feces, soil or grass. However, these infections are rare.

**WHAT DO THEY CAUSE?** A whipworm-infected child may experience diarrhea, anemia and a loss of appetite.

## Tapeworms

**WHAT ARE THEY?** There are many different species of tapeworms. Fleas are involved in the life cycle and transmission of the tapeworm known as *Dipylidium caninum* in dogs. Tapeworms are made up of many flat segments similar in appearance to grains of rice.



**HOW DO HUMANS BECOME INFECTED?** Fleas may be the way the tapeworm (*Dipylidium caninum*) is passed between dogs and humans. Fortunately, this particular tapeworm infection is rare in people but is certainly something to avoid.

### Heartworms

**WHAT ARE THEY?** Heartworms are the most serious of common parasites for dogs because they stress the dog's heart by restricting its blood flow and also damage other internal organs. Without treatment, the disease can be fatal to dogs. Since heartworms are spread by more than 22 different kinds of mosquitoes, every dog is at risk. And, because of weather variability, heartworms pose a threat year-round. Heartworms have been documented to infect humans, but, fortunately, reports of this disease are rare.

### Giardia

**WHAT ARE THEY?** Giardia are microscopic parasites that may invade a dog's or child's gastrointestinal tract causing diarrhea, dehydration and intestinal cramping. Both dogs and humans can become infected by drinking contaminated water. The best way to prevent giardia is to make sure pets and children play in dry areas and avoid drinking from streams, rivers and lakes.

### Fleas

**WHAT ARE THEY?** The most common of all canine parasites, fleas are parasitic insects that survive on the blood of their host. Almost every dog will suffer from fleas at some point in its life. Fleas can cause anemia and flea allergy dermatitis as well as transmit tapeworms to dogs.

**HOW DO HUMANS BECOME INFECTED?** Fleas multiply rapidly, laying literally hundreds of eggs in your dog's coat, which drop off in your yard or house. If a hungry adult flea spots a human first, it may jump on and take a bite before going in search of a new host.

**WHAT DO THEY CAUSE?** Neither cat nor dog fleas live on humans, but they may cause discomfort and irritation associated with small insect bites. As mentioned previously, fleas may be responsible for passing the tapeworm (*Dipylidium caninum*) between dogs and humans.

### Ticks

**WHAT ARE THEY?** Often found attached to the underside of a dog, as well as on the ears and neck, ticks are parasites that may come into contact with a dog's fur and bury their mouth in its skin. Ticks may swell to the size of a small pea or larger when feeding on blood. Lyme disease and Rocky Mountain Spotted Fever represent the most serious health threats posed by certain ticks to both dogs and humans. These species of ticks can cause enlarged lymph glands, joint inflammation and fever. If you find a tick on your pet, use tweezers, not your fingers, to remove it.

### Mites

**WHAT ARE THEY?** Of the more than 30,000 different species of mites identified to date, only a dozen varieties are common among dogs. Only one of those, the sarcoptic mange mite, is zoonotic. This mite burrows in a dog's skin and causes itchiness, inflammation and fur loss. In more serious cases, it may cause skin infections.

**WHAT DO THEY CAUSE?** In humans, the same condition caused by the sarcoptic mange mite may cause skin irritation and an itchy rash.



# Healthy Dog, Healthy Family



**You can protect your family from zoonotic parasites by following a few simple guidelines.**

First and foremost, take your dog for regular veterinary exams to ensure good health. Remember, your veterinarian is your family's other doctor. Just as you take your children to the pediatrician for regular checkups, you should also take your dog to your veterinarian.

After your dog is examined, ask your veterinarian to prescribe a parasite preventive, such as SENTINEL® (milbemycin oxime/lufenuron) or SENTINEL® Flavor Tabs®. Both provide the five-in-one protection dogs need to guard against heartworms, fleas, whipworms, roundworms and hookworms (*A. caninum*) year-round in a single monthly tablet. Both keep fleas in check by preventing flea eggs from developing. Proven to be 100 percent effective in preventing heartworm infection, they also control the other internal parasites that ravage a dog's intestines and present a potential risk to your children.

SENTINEL has been extensively tested and used by millions of dogs all over the world. SENTINEL and SENTINEL Flavor Tabs are approved by the FDA,\* using strict standards similar to those for human medicines. SENTINEL is even safe enough for puppies as young as four weeks, weighing at least two pounds. As with other heartworm preventives, dogs must be tested for heartworm prior to using SENTINEL or SENTINEL Flavor Tabs. In a small percentage of dogs treated with SENTINEL or SENTINEL Flavor Tabs, digestive, skin and neurological side effects may occur.

**Good hygiene and common sense will also minimize your family's exposure to zoonoses.**

*Specifically you should:*

- ✓ Promptly dispose of fecal material
- ✓ Keep children from playing where soil may be contaminated
- ✓ Practice good hygiene and encourage children to wash hands regularly, especially after playing in dirt or sandboxes
- ✓ Wear shoes in public parks to guard against hookworms
- ✓ Cover children's sandboxes when not in use
- ✓ Keep dog's environment, including bedding, clean
- ✓ Bathe and groom dog regularly
- ✓ Always wear gloves when gardening, or wash hands thoroughly afterwards
- ✓ Support laws promoting proper disposal of dog feces in public parks and playgrounds

As you can see, minimizing your family's risk of infection from zoonotic parasites requires some thought plus minimal effort on your part. The payoff, however, is big. You will be rewarded with many years of healthy living with your children and your dog. And, isn't that why you got a pet in the first place?

\*NADA #141-084, Approved by the FDA.

## *A Veterinarian's Point of View*

"Over the course of a lifetime, virtually every unprotected dog can be infected by parasites," said Dr. Jan Strother of the North Alabama Veterinary Clinic in Hartselle, AL. "The most effective way to protect dogs from parasites is to ask your veterinarian to put your dog on a year-round parasite prevention regimen."