Ringworm in Dogs

Drs. Foster & Smith Educational Staff

Ringworm is a well known fungus that can infect dogs, cats and humans. Many people have either had or known someone that has had a ringworm infection. There are several different forms of the fungus which can infect either you or your pet. The diagnosis and treatment is fairly straightforward for all species, however, some species affecting dogs can be much more difficult. Every pet owner should be aware of the signs, transmission, and treatment of ringworm.
Where is the fungus found?

Several different fungi found throughout the world can cause ringworm, however, the vast majority of cases in dogs are caused by *Microsporum canis*, *Microsporum gypseum*, or *Trichophyton mentagrophytes*. The ringworm fungus is most prevalent in hot, humid climates, but interestingly enough, most cases of ringworm occur in the fall and winter. The fungus is most commonly found either on or in the living quarters of infected animals. Spores from infected animals can be shed into the environment and live for over 18 months. Most healthy dogs do not carry spores on their skin or hair. The incidence of ringworm infections in dogs is actually quite small. In one study of dogs that had active skin problems, less than 3% had ringworm.

How is ringworm transmitted?

Ringworm can be transmitted by direct contact with an infected animal, or contact with an item that is contaminated with the spores. The spore can be on infected grooming equipment or brushes, in a contaminated boarding facility or kennel, or in the environment where an infected animal has visited. As you can see, because of the spore's ability to survive for long periods in the environment, your dog can contract ringworm just about anywhere other dogs or cats have been. Fortunately, most healthy adult dogs have some resistance to ringworm and never develop symptoms from the fungus. Young dogs are most often infected. Dogs with a suppressed immune system from other diseases or overuse of steroids are also more susceptible to contracting the disease.

What are the signs of ringworm?

Dogs with ringworm often have a very characteristic set of symptoms. The classic symptom is a small round lesion that is devoid of hair. The lesion will often have scaly skin in the center. Small pustules are often found in the lesion. The lesion may start as a small spot and continue to grow in size. The lesion may or may not be irritated and itchy. The lesions are most common on the head but can also occur on the legs, feet, or tail. The condition can often appear like, and be confused with, demodectic mange. In some infections, the fungus will not be in a circle and can spread across the face or nose and look like an autoimmune disease.

How is ringworm diagnosed?

Ringworm can be diagnosed through several different methods. A popular but not completely accurate way to diagnose the disease is through the use of a specialized black light called a Wood's lamp. Several species of the ringworm fungus will glow a fluorescent color when exposed to a Wood's lamp. However, it is estimated that up to half of the most common species of *M. canis* do not fluoresce under a Wood's lamp, and *T. mentagrophytes* does not fluoresce. In addition, a healthy animal may have spores on his coat but may not have an active infection.

Another method for identifying ringworm is to pluck and examine hairs on the periphery of the lesion under the microscope using a preparation of KOH (potassium hydroxide solution) to make them more visible. Between 40% and 70% of the infections can be diagnosed this way.

The best and most accurate way to identify a ringworm infection is by collecting scales and crust from the skin and coat and performing a culture. There are special culture mediums designed specifically for identifying ringworm infections. Your local veterinarian can easily perform this routine culture.

How is ringworm treated?

Most small, isolated lesions on healthy dogs and puppies will heal on their own within 4 months. In more severe cases, several different treatments are used. For isolated lesions, the area around the lesion should be thoroughly clipped down close to the skin. Care should be taken when clipping not to irritate the skin, as this may promote spreading of the infection. The lesions can then be treated topically twice a day with an antifungal medication. Popular topical treatments include miconazole cream, Lotrimin cream, or 1% chlorhexidine ointment. For more severe or more generalized lesions, in addition to clipping and topical treatment, antifungal shampoos or dips can also be beneficial. A 0.5% chlorhexidine shampoo, 2% miconazole shampoo, ketoconazole shampoo, lime sulfur dips, or 2% chlorhexidine solution that are applied every 2 to 4 days have all been used effectively.

> The clipped hair, clippers, and any grooming instruments that come into contact with an infected animal will harbor the spores and must be heat- or chemically-sterilized before being used on any other animal.

Another treatment option is to use oral antifungal agents. Historically, griseofulvin was the drug of choice. Ketoconazole, and most recently itraconazole, have been

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used successfully. These products all have to be given for several months, and because of their potential toxicity, must only be used under close direct veterinary supervision. Griseofulvin should not be used in breeding or pregnant animals.

How is ringworm prevented?

There are currently no reliable vaccines for the prevention of ringworm in dogs. Grooming and boarding facilities, as well as dog shows and veterinary clinics can often be a source of infection. Make sure the facilities are clean and that all surfaces and instruments are thoroughly cleaned and disinfected between animals.

Is ringworm transmissible to people?

Yes. Ringworm can be transmitted between dogs and people. Persons with suppressed immune systems, such as those with HIV infections or AIDS, and those undergoing chemotherapy may be especially vulnerable. Persons should wear gloves when handling affected animals and wash hands well afterwards.

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