

## BASIC INFORMATION

### Description

Dermatophytosis is a fungal skin infection of dogs and cats that targets the growing hairs and the surface of the skin. The common name for this infection is *ringworm*, because the lesions often have a ring or round shape in people.

### Causes

The most common causes are *Microsporum canis* (obtained from animals such as cats), *Microsporum gypsum* (obtained from the soil), and *Trichophyton mentagrophytes* (obtained from animals such as cattle or horses). These fungi are called *dermatophytes*.

All dermatophytes are contagious to humans. Dermatophytes infect only growing hairs, so when the hair stops growing or falls out, the infection resolves. Drugs and diseases that suppress immunity increase the risk of persistent dermatophytosis. Trauma and skin irritation (even bathing or grooming) may help establish a dermatophyte infection.

### Clinical Signs

Hair loss is the most common sign but is variable. Dandruff, crusty scaling, and itchiness can occur and are also variable. Pimples, red bumps, scabs, scrapes or hair loss from licking, and increased pigmentation of skin can be seen.

### Diagnostic Tests

Definitive diagnosis is made by fungal culture, which allows identification of the genus and species of the dermatophyte. The growth of the fungus on a culture typically takes 2-4 weeks and can be performed at the veterinarian's office or at an outside laboratory. Some cultures can be completed in a few days, but their accuracy is considered poor. Wood's lamp examination can be done in the examination room and involves using a cobalt-blue light to identify dermatophytes that fluoresce. However, it only identifies some varieties of *Microsporum canis*. False-negative results are common, and false-positives can also occur.

## TREATMENT AND FOLLOW-UP

### Treatment Options

Topical therapy is used for focal lesions. Drugs with good antifungal activity include clotrimazole, ketoconazole, and miconazole. Lime sulfur dip can also be used, and it is applied weekly until two negative fungal cultures are achieved 1 month apart. Precautions associated with lime sulfur include the following:

- Do not allow cats to self-groom while the product is still wet.
- The product can tarnish jewelry and stain fabric.
- The strong sulfur odor is somewhat offensive.

Agents that have less activity against dermatophytes and have limited use include thiabendazole, iodine products, and chlorhexidine products.

Oral medications are commonly used for widespread or persistent infections. Examples include griseofulvin, ketoconazole, itraconazole, fluconazole, and terbinafine. These medications are usually continued for 2 weeks after a negative fungal culture is achieved. Precautions associated with these drugs include the following:

- Griseofulvin has potential adverse effects on the bone marrow (where many types of blood cells are produced).
- Ketoconazole is preferred in the dog but must be used with caution in cats. Side effects include vomiting, decreased appetite, and, in rare cases, liver disease.
- Itraconazole and fluconazole are similar to ketoconazole; however, cats tolerate itraconazole better. Vomiting, loss of appetite, and liver disease can still occur with itraconazole. Fluconazole is typically used in dogs that do not tolerate ketoconazole.
- Terbinafine is costly and is infrequently used in dogs or cats to treat ringworm, but there may be fewer adverse effects on the liver with this drug.
- Be sure to notify your veterinarian and stop the medication if any of these side effects are encountered.

Environmental control is also important. Affected cats should be isolated from other animals, and all furred pets in the home should be treated. The environment must be cleaned of hairs and spores, which can harbor the ringworm for months. Cleaning with a 1:10 bleach solution can be effective but is not appropriate for all surfaces. Infected animals should not be allowed to infect other animals, especially at kennels, shows, and dog parks.

### Follow-up Care

Repeated cultures must be performed to monitor response to therapy, because therapy is recommended until two negative cultures are obtained 1 month apart. Laboratory tests are often needed to monitor for the side effects of these medications.

### Prognosis

Prognosis is very good for a cure; however, some purebred cats can be difficult to treat. Some cats look worse early in the therapy as infected hairs fall out, but new hair usually begins to grow after 1-2 months. Follow-up cultures are essential when deciding when therapy can be stopped, because the pet may look better weeks before the fungus is actually gone.