

Fungal Infection of the Skin, Hair, or Nails

(Dermatophytosis)

Basics

OVERVIEW

- “Dermatophytosis” is the medical term for a fungal infection affecting the skin, hair, and/or nails (claws)
- Most commonly isolated fungal organisms are *Microsporum canis*, *Trichophyton mentagrophytes*, *Microsporum persicolor*, and *Microsporum gypseum*

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs
- Cats

Breed Predispositions

- In cats, infections are seen more commonly in longhaired breeds (such as Persian and Himalayan)
- Dogs—Yorkshire terrier, Manchester terrier

Mean Age and Range

- Clinical signs are seen more commonly in young (*M. canis*) and older pets (with immune system compromise), species associated with wildlife seen most often in adults

SIGNS/OBSERVED CHANGES IN THE PET

- Pet may be a silent carrier; a “carrier” is an animal in which no signs of disease are present, but harbors the disease-causing fungus and can transmit it to other animals or people; common in cats
- Variable signs, hair loss (known as “alopecia”), with scales, which may be patchy or circular; the classic sign of circular hair loss is more common in cats than in dogs
- Poor hair coat (greasy, scales (accumulations of surface skin cells, such as seen in dandruff); pus-filled spots or small red spots (pustules, papules respectively) are possible; inflammation of the claw folds (known as “paronychia”)



CAUSES

- *Microsporum canis* is the most common cause of dermatophytosis in cats
- In dogs, the three most common causes are *Microsporum canis*, *Microsporum gypseum*, and *Trichophyton mentagrophytes*; the incidence of each fungus varies geographically; *M. persicolor*
- Less common species can cause fungal infection of the skin, hair, and/or nails (dermatophytosis)

RISK FACTORS

- Diseases (such as feline leukemia virus [FeLV] or feline immunodeficiency virus [FIV]) or medications (such as steroids) that decrease the ability of the body to develop a normal immune response (known as “immunocompromising diseases” or “immunosuppressive medications,” respectively) increase the likelihood that a pet will develop a fungal infection of the skin, hair, and/or nails (dermatophytosis) and increase the potential for a more severe infection
- High population density of animals (for example, in a cattery or animal shelter)
- Poor nutrition, poor management practices, and lack of adequate quarantine period increase risk of infection

Treatment

HEALTH CARE

- Most pets are treated as outpatients
- Quarantine procedures should be considered due to the infective and zoonotic nature of the disease; “zoonotic diseases” are diseases that can be passed from animals to people
- The use of an Elizabethan collar, particularly in cats, is recommended to prevent ingestion of antifungal medications applied to the skin

DIET

- Depending on the medication used in treatment, the diet should remain normal

Medications

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive

- Griseofulvin (an antifungal medication) in the past was prescribed most commonly for the treatment of dermatophytosis
- Ketoconazole (an antifungal medication) has been used in the treatment of dermatophytosis; treatment usually requires 4–8 weeks; side effects (such as lack of appetite, vomiting, and liver disease) have been seen—discuss potential side effects with your pet's veterinarian; not recommended for treating cats
- Itraconazole (an antifungal medication) is similar to ketoconazole, but typically has fewer side effects and is more effective, but it is expensive; treatment usually requires 4–8 weeks
- Clipping of the hair coat and application of antifungal medications directly to the skin (known as “topical therapy”) may be used in treatment; recommended use in conjunction with antifungal medications administered by mouth (such as ketoconazole); topical treatments may help prevent environmental contamination; topical treatments often are associated with initial worsening of signs; topical treatments include lime sulfur (1:16 dilution or 8 oz. per gallon of water); miconazole (with or without chlorhexidine); shampoos with ketoconazole, miconazole, climbazole
- Terbinafine—may be helpful in pets in which the fungal infection (dermatophytosis) does not respond to theazole medications; discuss possible side effects with the veterinarian

Follow-Up Care

PATIENT MONITORING

- Fungal (dermatophyte) culture is the only means of truly monitoring response to treatment
- Many pets will improve clinically, but remain fungal culture positive

- It is advisable to repeat fungal cultures toward the end of treatment and continue treatment until at least one culture result is negative
- In resistant cases, fungal cultures may be repeated on a weekly basis
- Complete blood counts will be performed weekly or biweekly for pets receiving griseofulvin
- Bloodwork to monitor liver changes may be indicated for pets receiving ketoconazole, terbinafine, or itraconazole

PREVENTIONS AND AVOIDANCE

- The use of a quarantine period and fungal (dermatophyte) cultures of all pets entering the household are necessary to prevent reinfection from silent carriers; a “carrier” is an animal in which no signs of disease are present, but harbors the disease-causing fungus and can transmit it to other animals or people
- The possibility of rodents aiding in the spread of the disease should be considered
- Decontaminate the environment
- Avoid infective soil if an outside species is cultured
- Treatment of exposed pets can be considered to prevent development of clinical signs

POSSIBLE COMPLICATIONS

- Falsely negative fungal (dermatophyte) cultures complicate management of this disease

EXPECTED COURSE AND PROGNOSIS

- Many pets will “self-clear” a fungal infection of the skin, hair, and/or nails (dermatophytosis) over a period of a few months
- Treatment hastens clinical cure and helps reduce environmental contamination
- Some infections, particularly in longhaired cats or multi-pet homes or facilities, can be very persistent

Key Points

- Many dogs and shorthaired cats (in a single-cat environment) will undergo spontaneous remission
- Longhaired pets should be clipped to reduce environmental contamination by the fungus
- The treatment of fungal infection of the skin, hair, and/or nails (dermatophytosis) can be frustrating and expensive, especially in multi-pet households or facilities or in recurrent cases
- Environmental treatment is important, especially in recurrent cases; dilute bleach is a practical and relatively effective means of providing environmental decontamination; however, this dilution of bleach will bleach various household materials—discuss the use of bleach in the environment and the recommended dilution with your pet's veterinarian
- In a multi-pet environment or cattery situation, treatment and control of this disease can be very complicated
- Dermatophytosis is a zoonotic disease; “zoonotic diseases” are diseases that can be passed from animals to people
- If a person in contact with a dog or cat develops skin lesions, he or she should seek medical attention