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## **Human and animal dermatophytosis: is it a real Public Health issue?**

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**Abstract:** Dermatophytosis (ringworm) is a contagious fungal infection of the skin of animals and humans. The three genera involved are *Microsporum*, *Trichophyton* and *Epidermophyton*. Ringworm is considered a zoonotic disease meaning that it can be transmitted from animal to person or vice versa. In humans ringworm results in itchy, rough, and reddened skin and alopecia patches if hair or beard areas are affected. As this infection is extremely contagious and passed from person to person via direct skin contact or contact with contaminated items such as toilet articles, clothing, and even by contaminated shower or pool surfaces, extreme care should be taken. Control of the disease in animals can prevent some cases of dermatophytosis in humans and special caution is to be taken with cats which are among the most commonly affected animals.

**Keywords:** dermatophytosis, dermatophytes; fungal infection; zoonosis; skin

### **Introduction**

Depending on their habitat, dermatophytes are classified as anthropophilic (human), zoophilic (animal), or geophilic (soil) (Anonym 1, 2009). Anthropophilic organisms are responsible for most human cutaneous fungal infections and rarely infect other animals (Anonym 2, 2009). Zoophilic dermatophytes are associated with animal fungal infections but occasionally infect humans (Anonym 2, 2009). Geophilic dermatophytes are found mainly in soil, where they are associated with decomposing hair, feathers, hooves and other keratin sources. They infect both humans and animals (Anonym 2, 2009). Dermatophytes are therefore spread by direct contact from other persons (anthropophilic fungi), animals (zoophilic fungi), soil (geophilic fungi), or indirectly from fomites.

### **Epidemiology and transmission**

This fungal pathogen causes ringworm mainly in cats and dogs, but is a common agent for human infection (Anonym 3, 2009). This fungus can be picked up by direct contact with other infected animals or by contact with arthrospores (asexual spores formed in the hyphae of the parasitic stage) that are present in contaminated objects such as grooming equipment, furniture and the environment. Spores are very resilient and can live up to two years infecting animals and humans (Anonym 3, 2009). Spores will attach to the skin and germinate producing hyphae, which will then grow in the dead, superficial layers of the skin, hair or nails (Anonym 3, 2009).

Age is an important factor in the occurrence of dermatophytosis (Anonym 4, 2009). It is more common in young animals due to the immaturity of their immune system, which is unable to build up an effective inflammatory response to terminate the infection, making them more vulnerable to the infection (Anonym 4, 2009). Hot, humid climates, poor nutrition, high density of animals, poor management and high stress situations may also increase the incidence of dermatophytosis (Muller et al., 2001).

Suppression of immunomechanisms, chronic or aggressive steroid therapy and conditions such as feline leukemia virus infection, FIV or neoplasia may increase susceptibility to dermatophytosis (Anonym 4, 2009). Long hair cats may be more commonly affected due to less efficient grooming or genetic breed predisposition (i.e. Persians and Himalayans)