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Mycology of dermatophyte infections

Mycology is the study of fungi. Dermatophyte fungi are the ringworm fungi (tinea). They depend on their host, which may be an animal ("zoophilic") or a human ("anthropophilic") and need to spread from one host to another to survive. Dermatophytes may also prefer to live in the soil ("geophilic").

Anthropophilic dermatophytes are so well adapted to living on human skin that they provoke minimal inflammatory reaction. Zoophilic or geophilic dermatophytes will often provoke a more vigorous inflammatory reaction when they attempt to invade human skin.

There are three genera of dermatophytes, recognised by the nature of their macroconidiae (asexual spores):

- Trichophyton (abbreviated as "T")
- Microsporum ("M")
- Epidermophyton ("E")

There are about 40 species. Their spores can live for more than a year in human skin scales in the environment.

Anthropophilic organisms include:

- *T. rubrum* (most common in New Zealand)
- *T. interdigitale*
- *T. tonsurans* (very common in the USA)
- *M. audouinii*
- *T. violaceum*
- *M. ferrugineum*
- *T. schoenleinii*
- *T. megninii*
- *T. soudanense*
- *T. yaoundei*

Zoophilic organisms include:

- *M. canis* (originating from cats and dogs)
- *T. equinum* (originating from horses)
- *T. erinacei* (originating from hedgehogs and other animals)
- *T. verrucosum* (originating from cattle)
- *M. nanum* (originating from pigs)
- *M. distortum* (a variant of *M. canis*).

Geophilic organisms include:

- *M. gypseum*
- *M. fulvum*

Diagnosis

The presence of a dermatophyte infection is confirmed by microscopy and culture of skin scrapings.

Related information

On DermNet NZ:

- [Introduction to fungal infections](#)
- [Tinea](#)
- [Laboratory tests for fungal infections](#)

On other websites:

- [University of Adelaide mycology site](#)

Books:

See the [DermNet NZ bookstore](#)

DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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