



[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).

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Introduction to fungal infections

Fungal infections of the skin are also known as 'mycoses'. They are common and generally mild. However, in very sick or otherwise immune suppressed people, fungi can sometimes cause serious disease.

Characteristics of fungi

Fungi are parasites or saprophytes i.e. they live off living or dead organic matter.

Mycologists identify and classify fungi according to their appearance by microscopy and in culture, and by the method of reproduction, which may be sexual or asexual.

Growing fungi have branched filaments called hyphae, which make up the mycelium (like branches are part of a tree). Some fungi are compartmented by cross-walls (called septae).

Arthrospores are made up of fragments of the hyphae, breaking off at the septae. Asexual spores (conidia) form on conidiophores. The sexual reproductive phase of many fungi is unknown; these are 'fungi imperfecta' and include those which infect humans.

Yeasts form a subtype of fungus characterised by clusters of round or oval cells. These bud out similar cells from their surface to divide and propagate. In some circumstances they form a chain of cells called a pseudomycelium.

Superficial fungal infections

These affect the outer layers of the skin, the nails and hair. The main groups of fungi causing superficial fungal infections are:

- [Dermatophytes \(tinea\)](#)
- Yeasts i.e. [candida](#), [malassezia](#), piedra
- [Moulds](#).

Subcutaneous fungal infections

These involve the deeper layers of the skin (the dermis, subcutaneous tissue and even bone). The causative organisms normally live in the soil living on rotting vegetation. They can get pricked into the skin as a result of an injury but usually stay localised at the site of implantation. Deeper skin infections include:

- [Mycetoma](#)
- [Chromoblastomycosis](#)

Systemic fungal infections

[Systemic mycoses](#) may result from breathing in the spores of fungi, which normally live in the soil or rotting vegetation or as opportunistic disease in immune compromised individuals.

Inhaled fungal infection

Although uncommon, some may infect healthy individuals. The result is most often a mild infection and long lasting resistance to further attack, but occasionally these infections are more serious and chronic (especially in

the immune suppressed). The organisms causing systemic fungal infections include:

- [Histoplasmosis](#)
- Coccidioidomycosis (North and South America).

Opportunistic infection

Other systemic mycoses only infect those who are already sick or immune suppressed i.e. they are 'opportunists'. Repeated infection may occur. Risks for systemic mycoses include:

- Serious illness and debility
- Cancer or leukaemia
- Diabetes mellitus
- Transplant
- Massive doses of antibiotics
- Parenteral nutrition
- Drug addiction
- Infection with [human immunodeficiency virus](#) (HIV)

Opportunistic fungal infections include:

- Aspergillosis (found everywhere)
- Mucormycosis
- [Cryptococcosis](#) (where there are pigeon droppings)
- *Trichosporon beigelii*
- *Pseudallescheria boydii*.

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Related information

On DermNet NZ:

- [Laboratory tests for fungal infection](#)
- [Treatment of fungal infections](#)

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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