

Superficial Fungal Infections in Children

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KEYWORDS

• Tinea • Dermatophyte • Ringworm • Athlete's foot • Onychomycosis

KEY POINTS

- Dermatophyte infections are common in the pediatric population.
- Tinea infections are named by their anatomic location on the body.
- Dermatophyte infections are most often caused by *Trichophyton*, *Microsporum*, or *Epidermophyton* species.
- Most infections can be treated with topical therapy, with important exceptions being the face, scalp, and nails.

INTRODUCTION

Superficial fungal infections (mycoses) are caused by specific organisms with the ability to invade and proliferate in keratin-containing layers of the hair, skin, and nails. They are relatively common in the pediatric population. Some organisms induce little host response (such as *Malassezia*, the causative organism of tinea versicolor), whereas others (the dermatophytes) can lead to marked inflammation (tinea infections). Typical dermatophytes are members of 3 common genera: *Trichophyton*, *Microsporum*, and *Epidermophyton*.¹ The prevalence of certain dermatophytes can vary based on geographic location, whereas others exist worldwide. Infection can be acquired by contact with infected humans (anthrophilic), animals (zoophilic), or soil (geophilic).

Tinea infections are classified by their location on the body (**Table 1**). Dermatophytoses occur more commonly in children than adults, particularly tinea capitis. Although human immunodeficiency virus infection and immunosuppression can put patients at higher risk and can cause more severe infections, most affected children are healthy without underlying immunodeficiency. Superficial mycoses do not usually penetrate deeper than the superficial layers of skin, hair, and nails, but can lead to significant morbidity because of symptoms, concern for transmission, associated

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Diagnosis	Location
Tinea corporis	Body
Tinea pedis	Foot
Tinea cruris	Groin
Tinea manuum	Hand
Tinea faciei	Face
Tinea capitis	Scalp
Tinea unguium (onychomycosis)	Nail

superinfections, and id reactions (discussed later). In this article, the most common manifestations of dermatophyte infections in children are first described, including diagnostic and treatment algorithms and associated phenomena. Clinical presentation and treatment options of superficial skin infections caused by noninflammatory fungal organisms, such as *Malassezia*, are also described.

INFECTION OF THE SKIN (TINEA)

Clinical Features

Tinea corporis

Tinea corporis refers to a dermatophyte infection of the skin on the trunk or extremities, with the exception of the palms or soles. It typically involves exposed areas, but can occur anywhere on the body. Worldwide, the most common causative agents are *Trichophyton rubrum* and *Trichophyton mentagrophytes*. Dermatophytes can be acquired from pets, or other animals, usually producing an inflammatory reaction. Close contact during sports, especially wrestling, can also spread organisms. Tinea corporis usually presents as an itchy, erythematous, classically annular plaque of varying size with active peripheral leading scale and central clearing (Fig. 1). Pustules may also be present. The amount of scale can be variable, especially if previously treated by topical corticosteroids, which suppress the host's local inflammatory response (so-called tinea incognito). Differential diagnosis includes nummular dermatitis and psoriasis, both of which are generally more diffusely distributed and are scaly



Fig. 1. Tinea corporis presenting as an annular plaque with peripheral leading scale and central clearing.

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