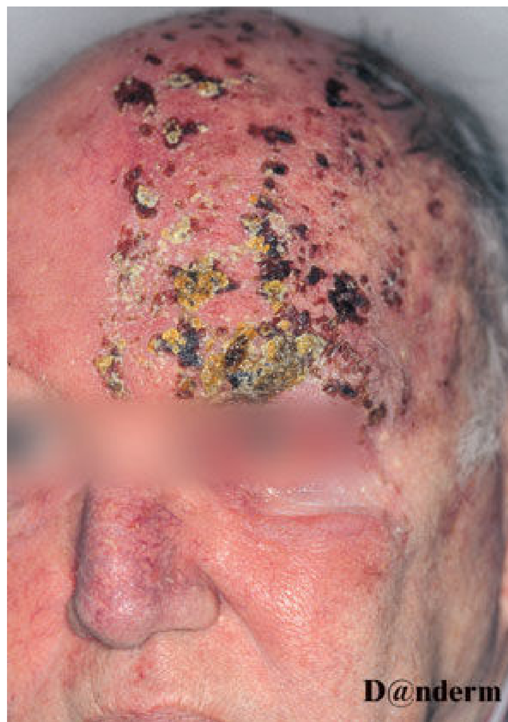
## Skin Infections / Infestations

- The normal skin microflora and antimicrobial peptides protect the skin against infection. However, when there is skin damage, microorganisms can penetrate resulting in infection.
- There are 3 main types of skin infections according to their sources: bacterial (e.g. staphylococcal and streptococcal), viral (e.g. human papilloma virus, herpes simplex (*see page 34*) and herpes zoster (*see below*)), and fungal (e.g. tinea *(see page 39 & 40),* candida *(see page 39 & 40)* and yeasts). Infestations (e.g. scabies (*see page 58 & 59)*, cutaneous leishmaniasis) can also occur.




**Herpes zoster (shingles) infection due to varicella-zoster virus affecting the distribution of the ophthalmic division of the fifth cranial (trigeminal) nerve**
**Note: Examination for eye involvement is important**

**Learning outcomes:**

**Ability to describe the presentation, investigation and management of:**

**- cellulitis and erysipelas**

**- staphylococcal scalded skin syndrome**

**- superficial fungal infections**

## Erysipelas and Cellulitis

***Description***

- Spreading bacterial infection of the skin
- **Cellulitis** involves the deep subcutaneous tissue
- **Erysipelas** is an acute superficial form of cellulitis and involves the dermis and upper subcutaneous tissue

***Causes***

- Streptococcus pyogenes and Staphylococcus aureus
- Risk factors include immunosuppression, wounds, leg ulcers, toeweb intertrigo, and minor skin injury

***Presentation***

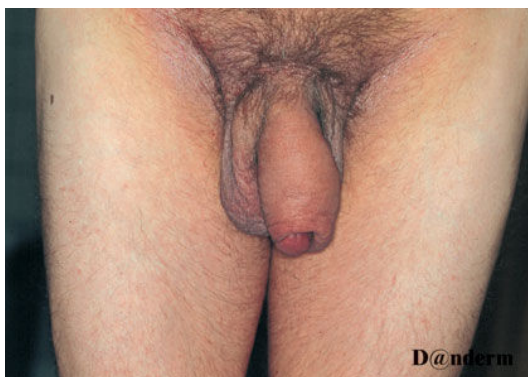
- Most common in the lower limbs
- Local signs of inflammation – swelling (tumor), erythema (rubor), warmth (calor), pain (dolor); may be associated with lymphangitis
- Systemically unwell with fever, malaise or rigors, particularly with erysipelas
- **Erysipelas** is distinguished from cellulitis by a well-defined, red raised border

***Management***

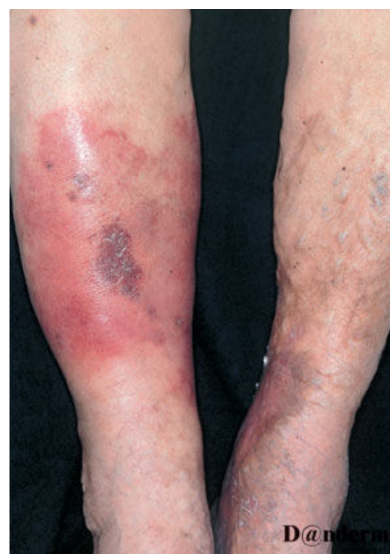
- Antibiotics (e.g. flucloxacillin or benzylpenicillin)
- Supportive care including rest, leg elevation, sterile dressings and analgesia

***Complications***

- Local necrosis, abscess and septicaemia




**Cellulitis with elephantiasis of the penis**




**Erysipelas**

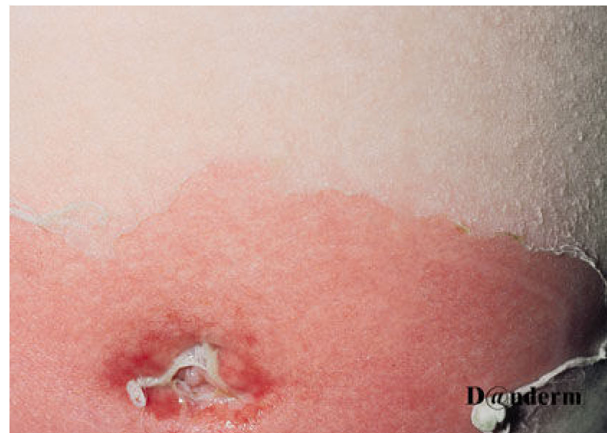
**Staphylococcal scalded skin syndrome**

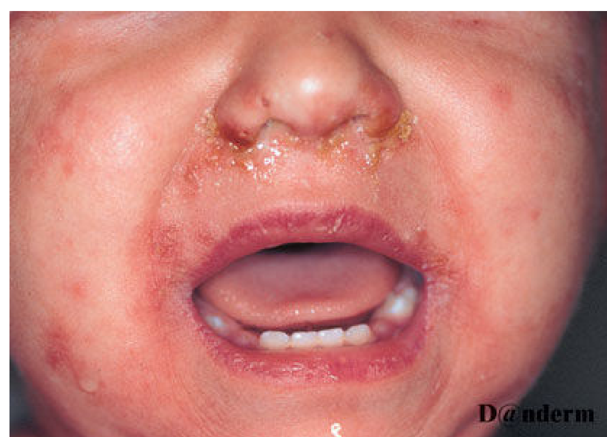
***Description***
- Commonly seen in infancy and early childhood

***Cause***
- Production of a circulating epidermolytic toxin from phage group II, benzylpenicillin-resistant (coagulase positive) staphylococci

***Presentation***
- Develops within a few hours to a few days, and may be worse over the face, neck, axillae or groins
- A scald-like skin appearance is followed by large flaccid bulla
- Perioral crusting is typical
- There is intraepidermal blistering in this condition
- Lesions are very painful
- Sometimes the eruption is more localised
- Recovery is usually within 5-7 days

***Management***
- Antibiotics (e.g. a systemic penicillinase-resistant penicillin, fusidic acid, erythromycin or appropriate cephalosporin)
- Analgesia




**Staphylococcal scalded skin syndrome**

## Superficial fungal infections

***Description***

- A common and mild infection of the superficial layers of the skin, nails and hair, but can be severe in immunocompromised individuals

***Cause***

- Three main groups: dermatophytes (tinea/ringworm), yeasts (e.g. candidiasis, malassezia), moulds (e.g. aspergillus)

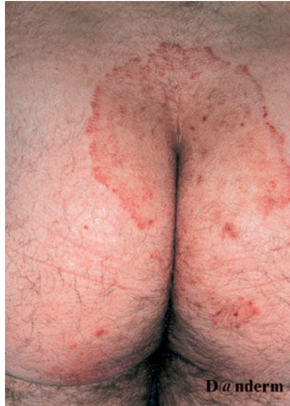
***Presentation***

- Varies with the site of infection; usually unilateral and itchy
- Tinea corporis (tinea infection of the trunk and limbs) - Itchy, circular or annular lesions with a clearly defined, raised and scaly edge is typical
- Tinea cruris (tinea infection of the groin and natal cleft) – very itchy, similar to tinea corporis
- Tinea pedis (athlete's foot) – moist scaling and fissuring in toewebs, spreading to the sole and dorsal aspect of the foot
- Tinea manuum (tinea infection of the hand) – scaling and dryness in the palmar creases
- Tinea capitis (scalp ringworm) – patches of broken hair, scaling and inflammation
- Tinea unguium (tinea infection of the nail) – yellow discolouration, thickened and crumbly nail
- Tinea incognito (inappropriate treatment of tinea infection with topical or systemic corticosteroids) – Ill-defined and less scaly lesions
- Candidiasis (candidal skin infection) – white plaques on mucosal areas, erythema with satellite lesions in flexures
- Pityriasis/Tinea versicolor (infection with Malassezia furfur) – scaly pale brown patches on upper trunk that fail to tan on sun exposure, usually asymptomatic

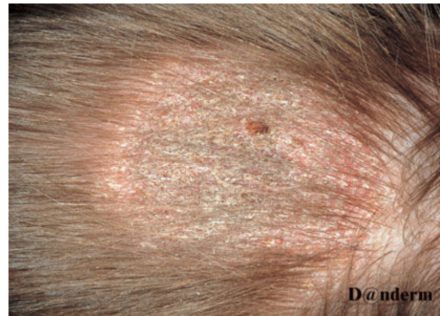
***Management***

- Establish the correct diagnosis by skin scrapings, hair or nail clippings (for dermatophytes); skin swabs (for yeasts)
- General measures: treat known precipitating factors (e.g. underlying immunosuppressive condition, moist environment)

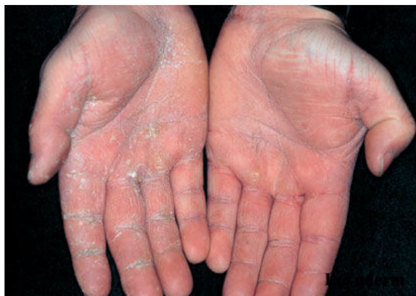
- Topical antifungal agents (e.g. terbinafine cream)
- Oral antifungal agents (e.g. itraconazole) for severe, widespread, or nail infections
- Avoid the use of topical steroids – can lead to tinea incognito
- Correct predisposing factors where possible (e.g. moist environment, underlying immunosuppression)



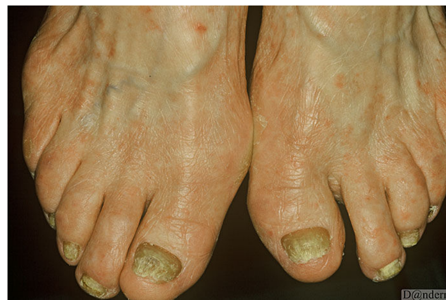

**Tinea corporis**



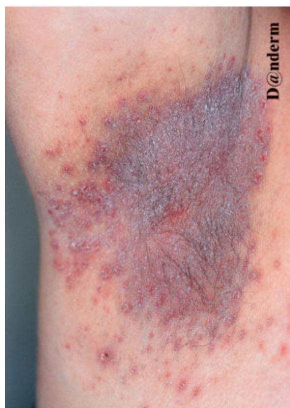

**Tinea capitis**



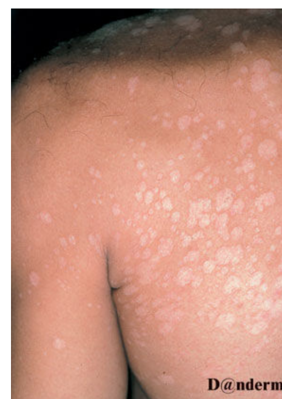
**Tinea manuum (right hand)**



**Tinea pedis with associated tinea unguium**




**Candidiasis (right axilla)**




**Pityriasis versicolor**