

Chapter 22 Skin Infections

Summary Outline

- 22.1 The skin repels potential pathogens by shedding and being dry, acidic and toxic.
- 22.2 **Normal flora:** The skin is inhabited by large numbers of low virulence bacteria that help prevent colonization by more dangerous species.
- Diphtheroids** are **Gram-positive, pleiomorphic, rod-shaped bacteria** that play a role in **acne** and **body odor**. **Fatty acids**, produced from the oily secretion of sebaceous glands, **keeps the skin acidic**.
 - Staphylococci** are **Gram-positive cocci** arranged in **clusters**. They are universally present and help **prevent colonization** by potential pathogens and **maintain the balance among flora** of the skin.
 - Fungi: *Malassezia* sp. are **single-celled yeasts** found universally on the skin. They may cause **tinea versicolor**, dandruff, and serious skin disease in AIDS patients.
- 22.3 Bacterial skin diseases
- Boils (furuncles)** and **carbuncles** are caused by *Staphylococcus aureus*, which is **coagulase-positive** and often **resists penicillin** and other antibiotics.
 - Staphylococcal scalded skin syndrome** results from **exotoxins** produced by certain strains of *Staphylococcus aureus*.
 - Impetigo** is a superficial skin infection caused by *Streptococcus pyogenes* and *Staphylococcus aureus*.
 - Acute glomerulonephritis** is caused by an **antibody-antigen reaction** and is an uncommon **complication of *S. pyogenes* infections**.
 - Rocky Mountain spotted fever** is caused by the **obligate intracellular bacterium *Rickettsia rickettsii*** and is a potentially fatal disease transmitted to humans by ticks.
 - Lyme disease is caused by a spirochete, *Borrelia burgdorferi*, transmitted to humans by **ticks**.
- 22.4. **Skin diseases caused by viruses**
- Chickenpox (varicella)** is a common disease of childhood caused by the **varicella-zoster virus**, herpesvirus. **Shingles** or **herpes zoster**, can occur months or years after chickenpox, a reactivation of the varicella-zoster virus infection in the distribution of a sensory nerve. Shingles cases can be sources of chickenpox epidemics.
 - Measles (rubeola)** is a potentially dangerous viral disease that can lead to serious secondary bacterial infections and fatal lung or brain damage. Measles can be controlled by **immunizing young children and susceptible adults with a live attenuated vaccine**.
 - German measles (rubella)**, if contracted by a woman in the first eight weeks of pregnancy, results in a 90% chance of **birth defects** comprising the **congenital rubella syndrome**. **Immunization with a live attenuated virus** protects against this disease.
 - Other **viral rashes** of childhood
 - Fifth disease (erythema infectiosum)**, caused by **parvovirus B-19**, is characterized by a “slapped cheek” rash and can be fatal to people with certain anemias.
 - Roseola (exanthem subitum)** is marked by several days of high fever and a transitory rash, which appears as the temperature returns to normal. It occurs mainly in infants six months to three years old. The disease is caused by **herpesvirus, type 6**.
 - Warts** are **skin tumors** caused by a number of **papillomaviruses**. While they are generally benign, some **sexually transmitted papillomaviruses are associated with cancer of the uterine cervix**.

- 22.5 Skin diseases caused by fungi are **mycoses**. Invasive skin infections such as diaper rashes, may be caused by *Candida albicans*. Other fungi cause **athlete's foot, ringworm** and **invasions of the hair and nails**.