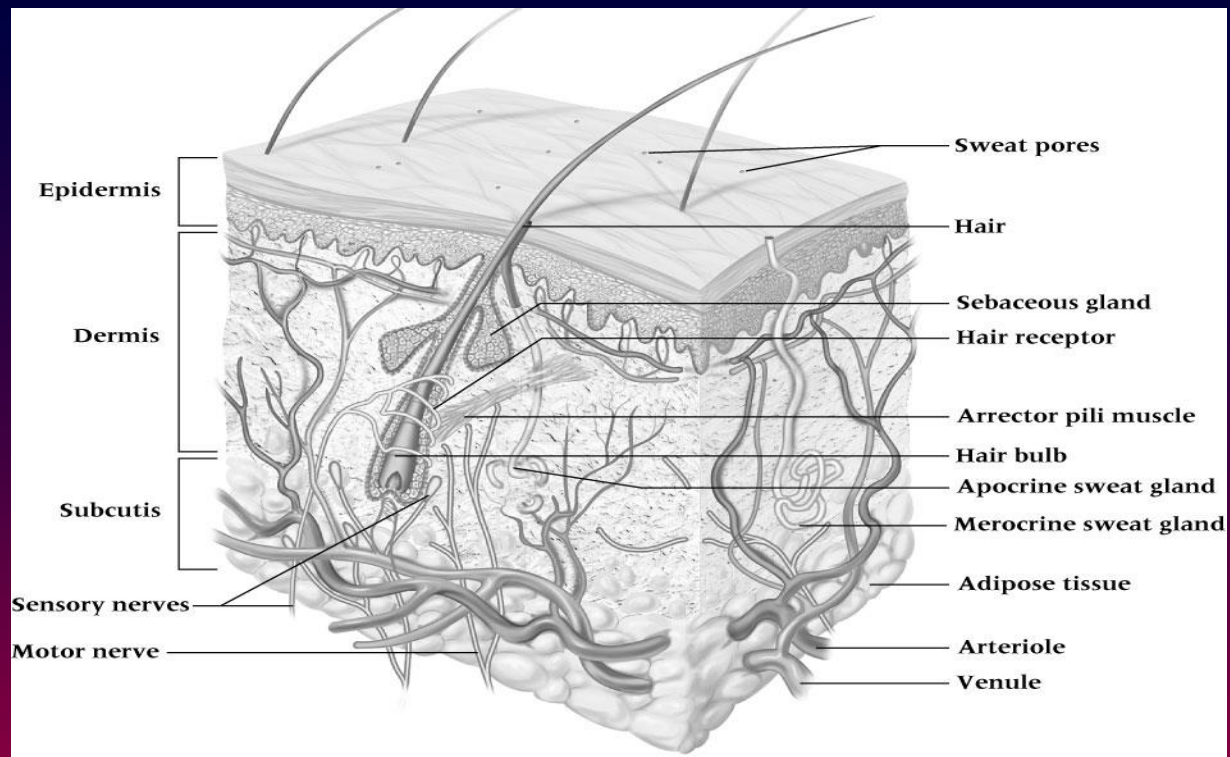


Chapter 23: Skin Disorders



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General Information

- 3 Layers of Skin
 - Epidermis-outer layer
 - Dermis-middle layer
 - Subcutis/Subcutaneous Fat Layer-inner layer
- Skin pigment (color) – melanin
- Cellulitis
 - Infectious inflammation of deep skin structures

How Skin Trauma Occurs

Mechanisms of Injury

- Friction (ex: Blister)
- Compression (ex: Bruise)
- Shearing (ex: Cut/Abrasion)
- Tension (ex: Sprain-ligaments/Strain-muscle/tendons)
- Avulsing (ex: Fingernail Hanging from Nail Bed)
 - Puncturing (ex: Stab or Gunshot Wound)

- Blisters

- Etiology (cause)

- Result of a shearing force that produces a raised area that accumulates with fluid

- Prevention

- Use of powder or lubricant to reduce friction
 - Tubular socks, 2 pairs of socks if feet are sensitive or sweat excessively
 - Appropriate shoes that are broken in
 - Padding

- Signs and Symptoms

- Hot spot, sharp burning sensation, painful
 - Superficial area of skin raised with clear fluid



– Management/Treatment

- Leave intact for 24 hours. Do not pop it!

If it is too painful, it is ok to pop the blister by:

- Cutting a small incision to drain fluid (large enough that it won't re-seal)

However, prevent infection by:

- Clean again with antiseptic
- Apply antibiotic ointment
- Use doughnut pad to prevent irritation

- Corns and Calluses

- Etiology

- Caused by pressure of improperly fitting shoes, sweat, and anatomic abnormalities

- Signs and Symptoms

- Hard or soft spot on or between toes

- Prevention

- Wear properly fitting shoes

- Management

- Surgical removal if painful
 - Padding; maintain clean dry feet; wear appropriate shoes



Unshaved callus



Shaving the callus



Shaved callus



Filing the callus

- Ingrown Toenails

- Etiology

- Generally occurs in great toe
 - Nail grows laterally into skin
 - Results because of pressure from shoes, poor nail trimming, and repeated trauma



– Signs and Symptoms

- Pain and swelling
- Skin around toe nail becomes inflamed, red and irritated
- Pus may be present

– Prevention

- Properly fitting shoes and socks are essential
- Weekly toenail trimming (cut straight across) Do not curve nail bed margins!
- Leave nail long enough to clear skin

– Management

- Soaking the inflamed toe in warm soapy water (20 minutes)
- Place cotton under edge of nail to clear from skin
- Surgery may be required

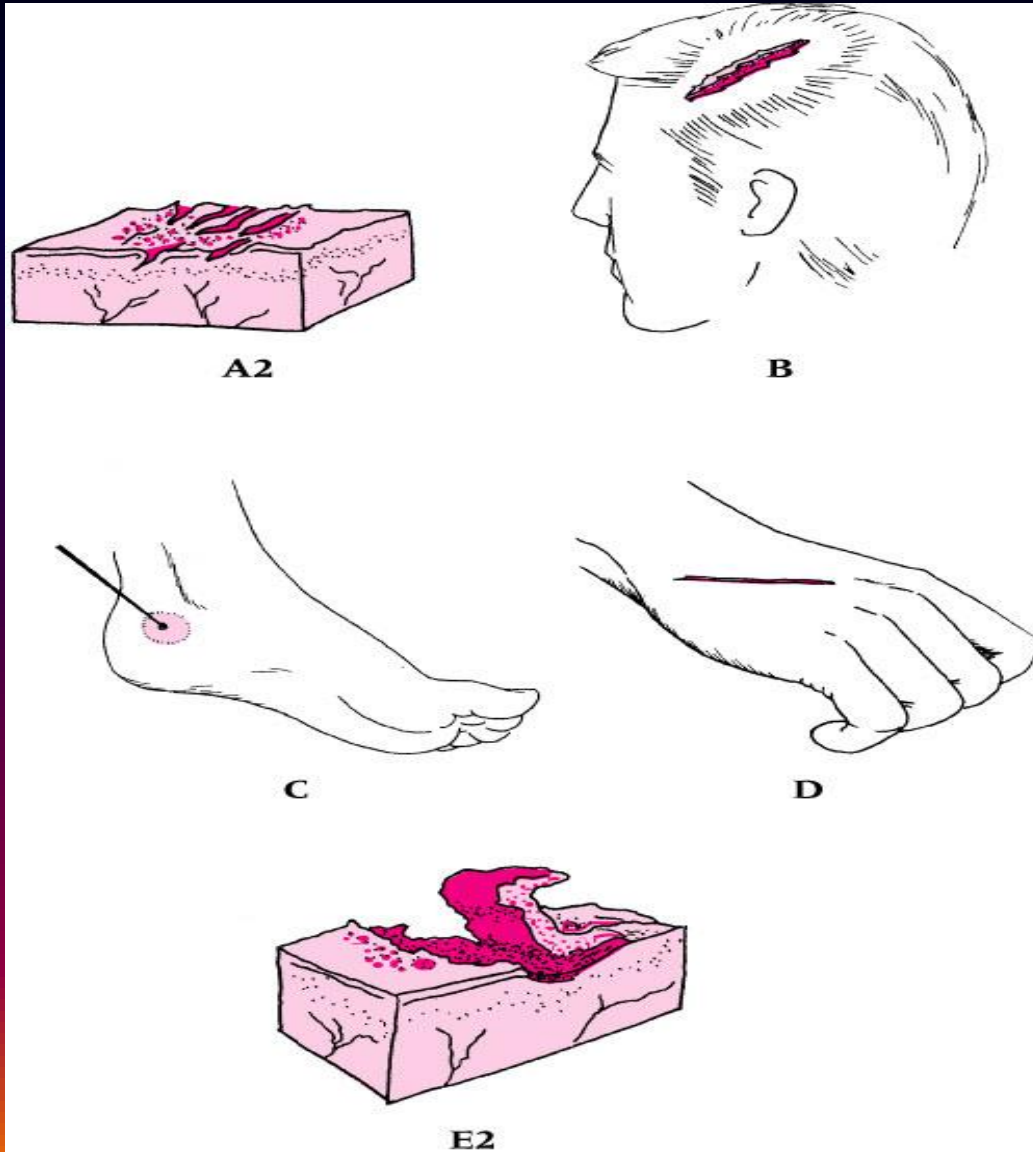
Wounds

- Abrasions
 - Scraping of skin against rough surface (top surface of skin is worn away)
 - Increased probability of infection due to exposure of dirt and foreign material
- Punctures
 - Direct penetration of skin with pointed object

Wounds



- Lacerations
 - Object tears tissue, giving wound appearance of jagged edge (sometimes result of blunt trauma)
- Incision
 - Smooth cut in skin - not jagged
- Skin Avulsion
 - Skin torn away from body (should be placed in moist gauze w/in a plastic bag that is then immersed in cold water)
 - Transport to hospital with athlete for possible reattachment



- Universal Precautions: All persons and wounds must be treated as if they are contaminated/infected
- Don't forget to wear Personal Protective Equipment-gloves, masks, etc. to prevent exposure.
- Apply pressure to the wound to Stop Bleeding.
- Determine if a Physician's Examination is needed.
- Clean all wounds with soap/water or some type of antiseptic to minimize infection
- Cover the wound to prevent infection as well.

Common Viral Infections in Athletes

- Herpes
 - Herpes Simplex I: Cold sore, Fever Blister
 - Herpes Simplex II: Genital herpes
 - Herpes Gladiatorum (Back or Shoulder)
 - Herpes Zoster (Chicken Pox/Shingles)

 - 21% of the population has **HERPES!!!!**

Viral Infections

- Virus
 - Small organism that can live only in a cell
 - Upon entering cell it may immediately trigger a disease or remain dormant (not active)
 - Can damage host cell by blocking normal function and using metabolism for own reproduction
 - Virus ultimately destroy cells
 - Viruses are hard to treat because they mutate

Herpes

- Cause of Condition
 - Herpes simplex – viral infection that tends to occur in the same location (mucous membranes)
 - Type I (cold sore) Type II (genitals)
 - Herpes zoster
 - Form of Herpes present as the Chicken pox virus/shingles







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– Signs of Condition

- Early indication = tingling or hypersensitivity in an infected area 24 hours prior to appearance of blisters
 - Local swelling followed by outbreak of blisters
 - Heals in generally 10-14 days
-
- 21% of the Population has **HERPES!!!!**

How can you get Herpes?

- **HSV-1** is usually passed from person to person by kissing. **HSV-1** can also **spread** from the mouth to the genitals during sexual activities (oral sex). If this happens, it becomes a case of genital **herpes**. **HSV-2** is most often passed by vaginal sex and anal sex.

Treatments for Herpes

- (OTC) Over the Counter Medicines:
 - Abreva, Camphophenique, Carmex
- Prescription Medicines:
 - Valtrex

There is no CURE for HERPES. There are treatments that help reduce the outbreaks of the blisters/sores.

Warts (Verruca)

- Warts are very common non-cancerous growths of the skin caused by infection with human papillomavirus (HPV).
- A viral wart on the sole of the foot is also called a verruca.

Verruca Virus and Warts

- Variety of forms exist
 - verruca plana (flat wart), verruca plantaris (plantar wart), and condyloma acuminatum (venereal/genital wart)
- Human Papilloma Virus (HPV)
 - More than 100 types of HPV
 - 40 HPV types cause genital warts/cancer

– Signs of Condition

- Small, round, elevated lesion with rough dry surfaces
- Painful if pressure is applied



– Care

- If vulnerable, they should be protected until treated by a physician
- Use of electrocautery, topical salicylic acid or liquid nitrogen are common means of managing this condition

Pictures of Warts



How are warts transmitted?

- **Warts** are easily **spread** by direct contact with a human papillomavirus. You can infect yourself again by touching the **wart** and then touching another part of your body. You can infect another person by sharing towels, razors, or other personal items.

- Molluscum Contagiosum

- Etiology

- Poxvirus infection which is more contagious than warts (especially during direct body contact)

- Signs and Symptoms

- Small, flesh or red colored, smooth-domed papules

- Management

- Physician referral is necessary
 - Cleansing and destructive procedure (counterirritant such as cantharidin, surgical removal or cryosurgery)

Molluscum Contagiosum



Common Bacterial Infections in Athletes

- Staphylococcus-generally categorized by pus
 - Furuncle (Boils)
- Streptococcus
 - Impetigo (crusty skin lesions)
 - Folliculitis (irritated hair follicle, like razor burn)

Bacterial Infections

- Bacteria are single celled micro-organisms
- Disease development
 - Bacterial pathogen enters host, growth of bacteria and production of toxic substances occurs and host attempts to fight infection
- Two types
 - Staphylococcus- generally categorized by pus
 - Streptococcus

Impetigo- Strept Infection Crusting of Skin (Spread by Contact)



Impetigo



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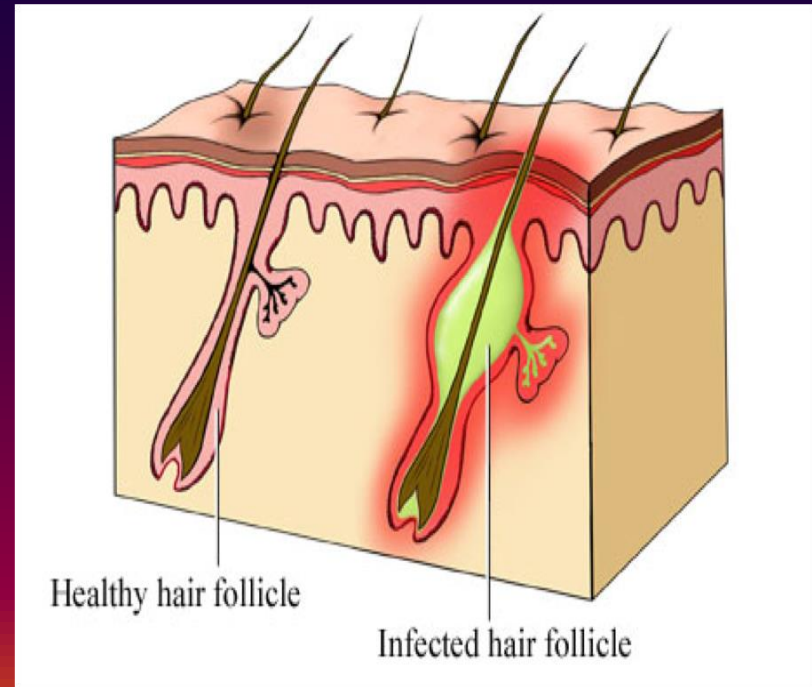
Furuncle (Boils)- infection of a hair follicle that leads to a large, red pustule. Generally a staph infection.



Boils



Folliculitis- inflammation of a hair follicle around neck, groin, face. It is often a strept infection.



– Symptoms of Condition

- Mild itching and soreness followed by eruption of small vesicles and pustules that rupture and crust
- Exhibits signs of inflammation
 - Tenderness, warmth, redness and swelling

– Care

- Cleansing and topical antibacterial agents
- Systemic antibiotics
- Pus filled lesions should be drained by physician
- Minimize the chances of the infection to spread to others—avoid contact!!

Common Fungal Infections in Athletes

- Ringworm (Tinea)-named for its location on the body
 - Tinea capitis (head)
 - Tinea Corporis (body)
 - Tinea Unguium (toenails and fingernails)
 - Tinea Cruris (jock rash)
 - Tinea Pedis (athlete's foot)

Fungal Infections

- Cause of Condition
 - Ringworm fungi (tinea)
 - Ringworm is the cause of most skin, nail and hair fungal infection
- Signs and Symptoms
 - Mild to moderate itching
 - Brownish or reddish lesion resembling outline of butterfly in groin
 - Appears as dry scaling patch or inflammatory scaling red sores

Tinea Corporis



Tinea-Ringworm

Tinea Pedis



Tinea Capitis



Tinea Pedis



Tinea Unguium



Care for Tinea (Ringworm)

– Treatment

- Treat until cured-dried up
- Over the counter medications-
Lamisil/Lotrimin/Tinactin
- May require a physician's evaluation and
prescription anti-fungal creams or oral medicines

- **Candidiasis (Moniliasis)-Yeast Infection**

- **Etiology**

- Yeast-like fungus that can produce skin, mucous membrane and internal infections
 - Ideal environment where yeast accumulates includes hot humid weather, tight clothing, and poor hygiene
 - Small amounts of the candida fungus are present in the [mouth](#), digestive tract, and [skin](#) of most healthy people. They are normally kept in check by other bacteria and microorganisms in the body. However, certain illnesses, stress, or [medications](#) can disturb the delicate balance, causing the fungus candida to grow out of control

Candidiasis (Moniliasis)-Yeast Infection

– Signs and Symptom

- Infections within body folds
- Presents as beefy red patches and possible sores
- White border may surround the red area; deep painful sores may develop at skin creases

Candidiasis (Moniliasis)-Yeast Infection

– Management

- Maintain dry area
- Use antifungal agents to clear infection-Miconazole (Monistat)

Candidiasis (Moniliasis)-Yeast Infection



HIV Web Study (www.HIVwebstudy.org)

Supported by HRSA

Candidiasis (Moniliasis)-Yeast Infection



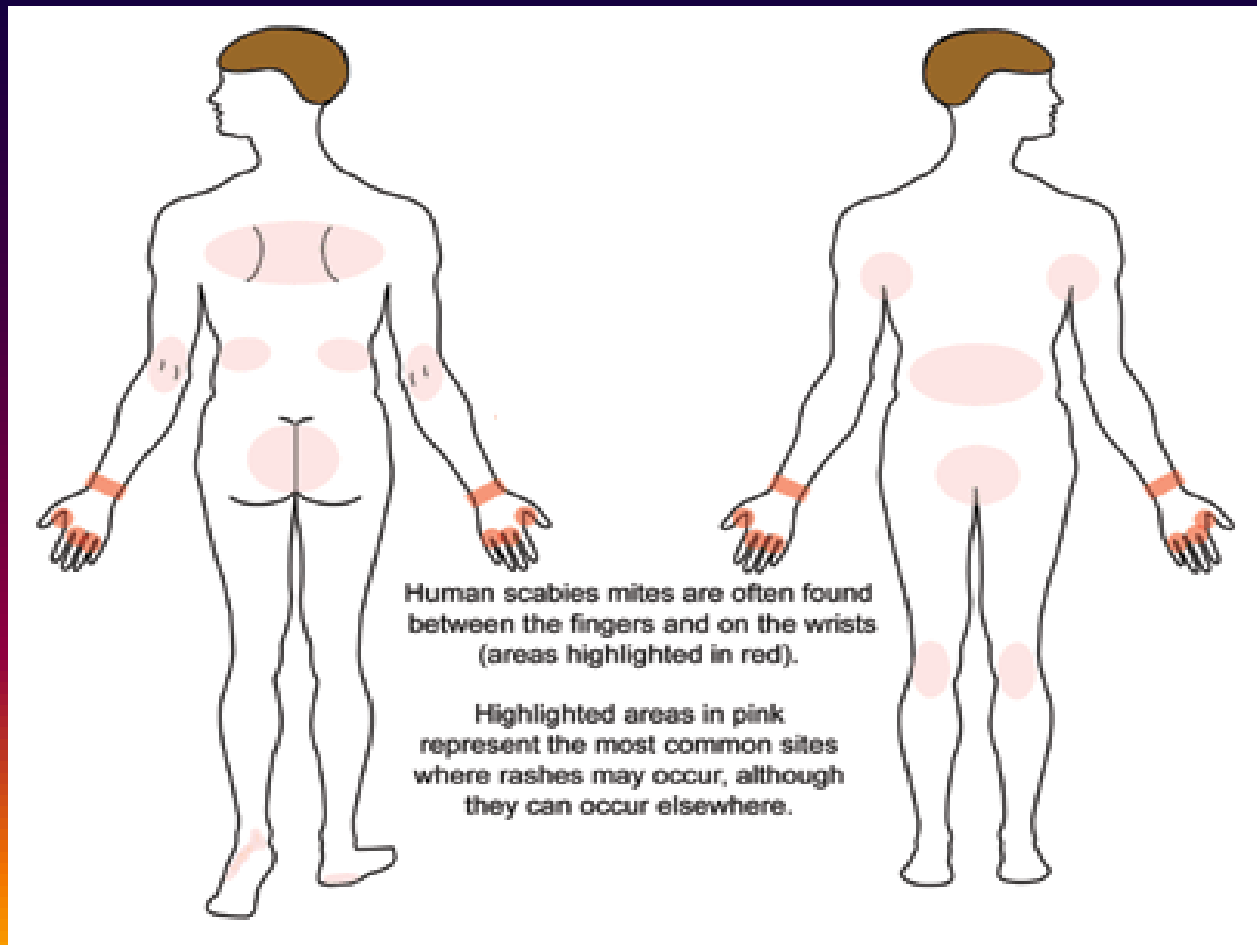
Parasitic Infections

- Scabies
- Lice
- An animal is **LIVING** and **THRIVING** on your body!!!!!!

Scabies

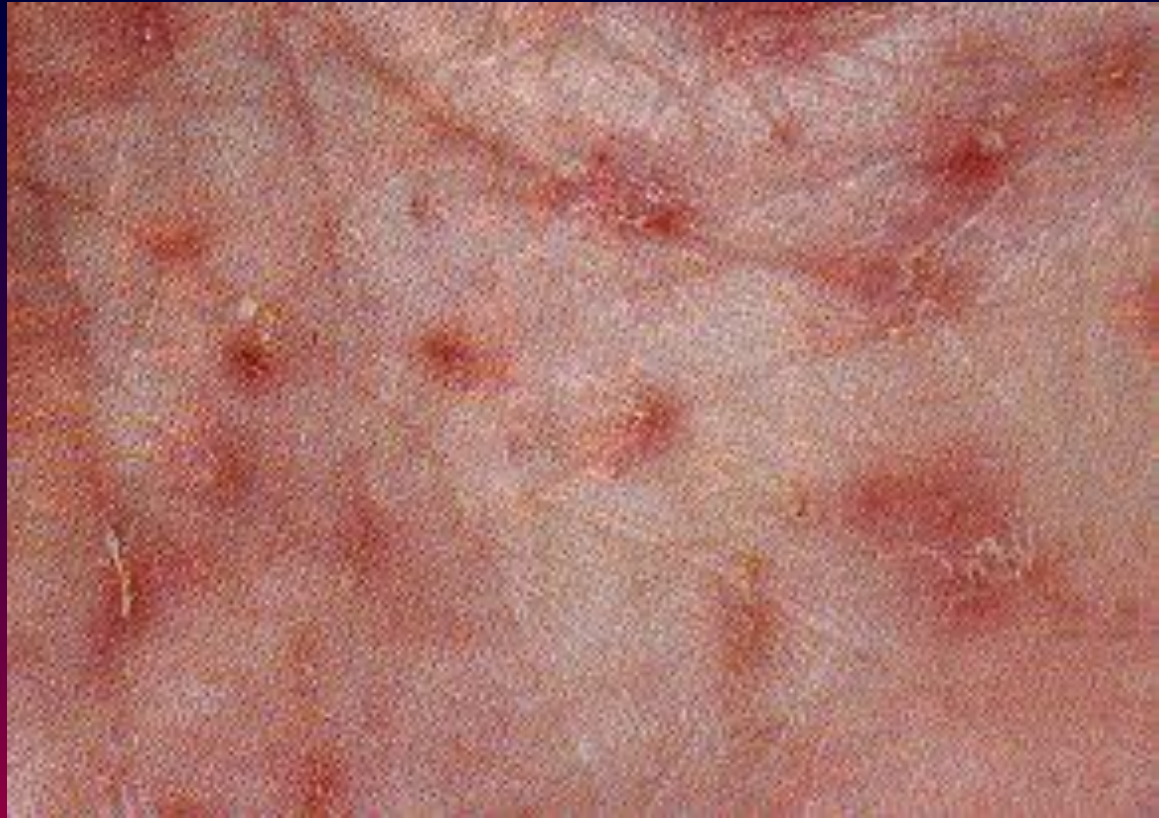
- Etiology
 - Caused by mites which cause extreme itching
- Signs and Symptoms
 - Itching
 - Bites, bumps, or pustules on skin may be present
- Management
 - Permethrin 5% is treatment of choice
 - Washing of bedding and clothes is necessary
 - Topical corticosteroids may be necessary to treat itching

Scabies Information



Scabies





Lice (Pediculosis)

- Etiology
 - Manifestation by the louse (louse of head, pubic region and body)
- Signs and Symptoms
 - Bites cause itching dermatitis through subsequent scratching -- promotes pustule and excoriations to develop
- Management
 - Good hygiene
 - To prevent re-infestation all clothing and bedding should be washed in hot soapy water or discarded

Lice up CLOSE!!!!





Lice



Other Parasites and Problems

- Ticks: Lyme's Disease and Rocky Mountain Spotted Fever
- Mosquitoes: Malaria and West Nile Virus
- Bees/Yellow Jackets/Hornets: Anaphylaxis (Allergic Reaction-stop breathing)
- Bedbugs: don't transmit disease but leave their mark (bumps that itch)