

Sports Dermatology

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Objectives

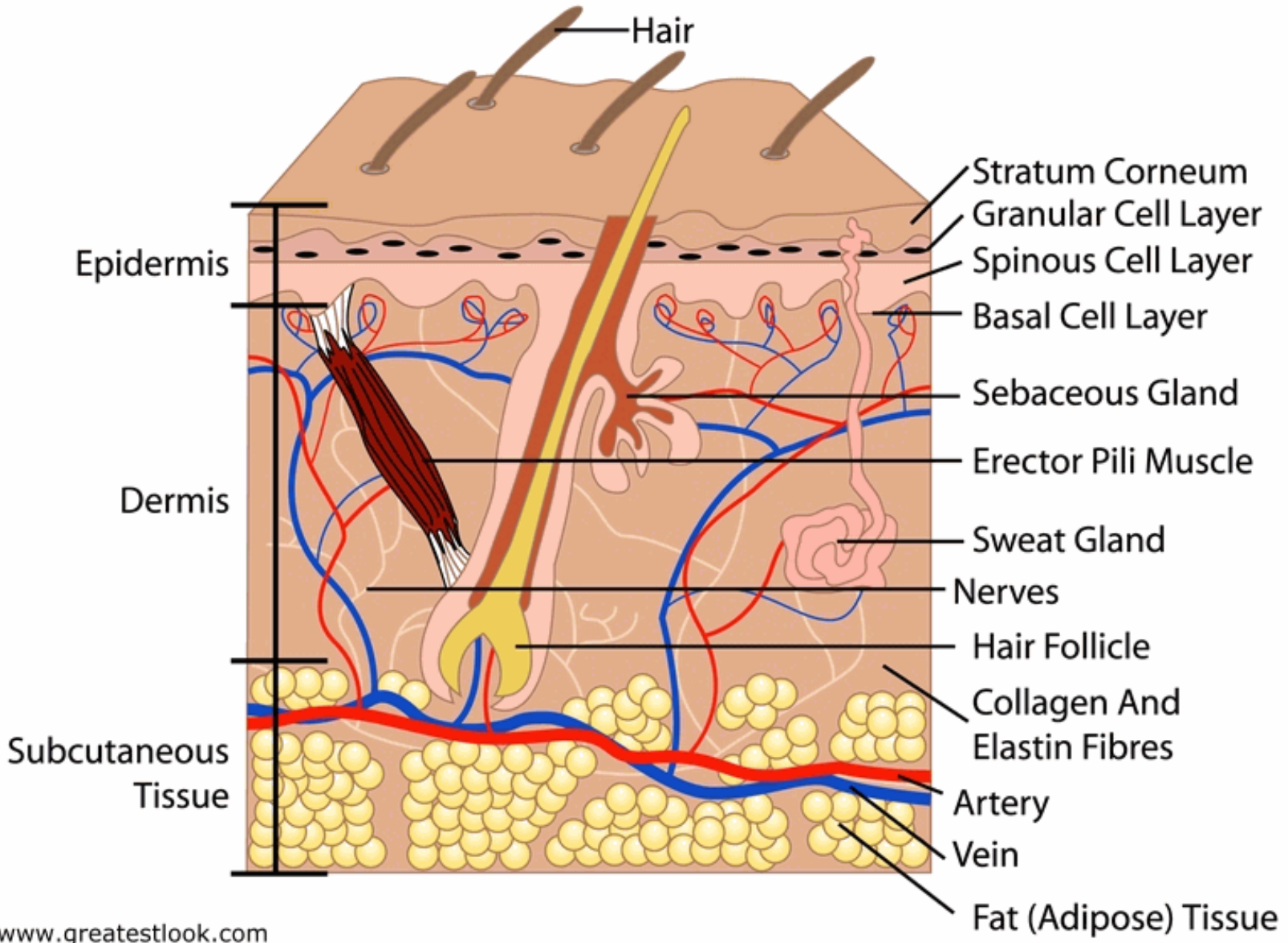
- 🎯 Discuss common skin lesions among athletes
- 🎯 Recognize infectious vs. non-infectious skin lesions
- 🎯 Learn proper treatment approaches to common skin lesions
- 🎯 Become familiarized with rules for skin lesions in various sports

Sports Dermatology

- 🌈 Skin anatomy
- 🌈 Trauma related
- 🌈 Equipment related
- 🌈 Infection related
 - 🌈 Bacterial
 - 🌈 Viral
 - 🌈 Fungal
 - 🌈 Infestations



Anatomy of the Skin



www.greatestlook.com

Sports Dermatology

🌈 Trauma related

🌈 Equipment related

🌈 Infection related



Trauma Related

- Talon noir/Mogul skier's palm/Tennis toe
 - "Black heel" or calcaneal intraepidermal hemorrhages
 - Focal hemorrhage within the stratum corneum caused by friction trauma
 - Seen in basketball, skiing, tennis
 - Can be confused with melanoma- shaving lesion will remove
- Treatment:
 - None/reassurance
 - Can try to pad or have properly fitted shoes and two pairs of socks



Trauma Related

🎯Cauliflower ear

- 🎯Bleeding in the subperichondral space of the external ear
- 🎯Due to shear force to skin which is attached to perichondrium
- 🎯Can lead to infection and permanent deformities due to loss of nutrients to cartilage



Auricular Hematoma Treatment

🎯 Drainage: 1-2 days

🎯 Bolster with:

🎯 Paper clip

🎯 Magnet

🎯 Dental mold

🎯 Dental rolls and suture

🎯 Antibiotic prophylaxis for 5 days;

🎯 Cephalexin 500mg TID



Trauma Related

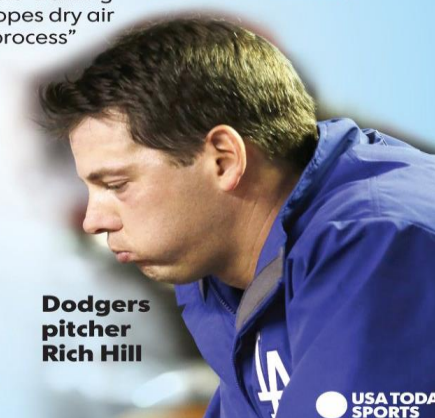
- Friction blister
 - Mechanical separation of the epidermis
 - Fluid fills within the layers, can be debilitating in Athletes
 - Between 2010-2016, 11 MLB starting pitchers on DL for blisters



2016 HILL'S BLISTER 2017

- July 17:** Throws just five pitches before leaving start due to blister - 2 weeks before trade deadline
- Aug. 1:** Traded from A's to Dodgers, despite being on disabled list
- Aug. 5:** Scratched from first scheduled start with Dodgers
- Aug. 15:** Sent to Dodgers' training facility in Phoenix, in hopes dry air will "help the healing process"
- Aug. 24:** Finally makes first start for Dodgers: Six shutout innings
- Aug. 31:** Scratched from next start due to blister concerns
- Oct. 17:** Pitches six shutout innings, beats Cubs in NLCS Game 3
- April 7:** Placed on DL after first start due to blister
- April 16:** Leaves second start after three innings and placed on DL again the next day

Dodgers pitcher Rich Hill



USA TODAY SPORTS

Blister Treatment

- Keep the roof on
- If drain, drain away from traction forces
- Super glue
- Stan's Rodeo cream



Trauma Related

🎨 Corn/Callus

- 🎨 Thickening of stratum corneum as a result of chronic friction and pressure
- 🎨 Can become excessively thick and painful, but serve a purpose in some sports
- 🎨 Parring with scalpel or pumice stone after soaking
- 🎨 Remove pressure or friction; socks, petroleum jelly



Trauma Related

A
R



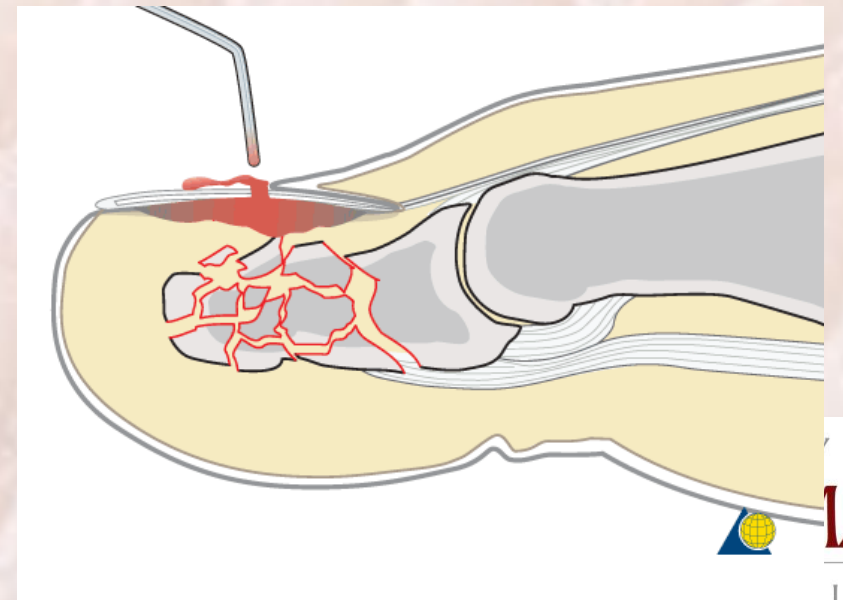
Trauma Related

🌈 Subungual hematoma




- 🌈 Collection of blood under the nail plate-painful
- 🌈 Large hematomas may be result of large nail bed lacerations
- 🌈 Small hematomas can be decompressed with hot paperclip or needle through the plate
- 🌈 Open fracture?



Figure 2 – An electrocautery unit such as this may be used to drain a subungual hematoma by melting a hole in the nail.



Sports Dermatology

-  Trauma related
-  **Equipment related**
-  Infection related

Equipment Related

🎨 Acne mechanica

🎨 Secondary to heat, mechanical irritation/friction under sports equipment, and occlusion

🎨 *Basler RSW. Acne mechanica in athletes. Cutis 1992;50:125-8.*



Acne Mechanical Treatment

🌈 Wicking under layer- DryFit®

🌈 Clean equipment- antibacterial sprays, Clorox® wipes

🌈 Benzoyl peroxide: 1-10%

🌈 Topical acne preparations:

🌈 5% Benzoyl peroxide/1% clindamycin BID

🌈 2% Erythromycin BID

🌈 Dapsone 5% gel BID

🌈 Topical retinoids

🌈 Tretinoin: 0.01-0.1% gel QHS

🌈 Adapalene: 0.1% cream QHS

🌈 Tazarotene: 0.1% cream QHS

🏈 Oral Antibiotics

🏈 Tetracycline: 500mg BID

🏈 Minocycline: 100mg BID

🏈 Doxycycline: 100mg BID

Equipment related

🌈 Acne keloidialis nuchae

- 🌈 Not keloid, not acne: foreign body inflammatory response
- 🌈 Occurs in 8.2% of all football players, 13.6% AA (0% white)

Knable, AL, Hanke, CW, Gonin, R; J Am Acad Dermatol 1997;37:570-4.




- 🌈 Hair length <0.5cm in >85% (all AA)
- 🌈 Occlusion and friction from football helmet
- 🌈 *Staphylococcus albus* and *Propionibacterium acnes*



Acne Keloidalis Treatment

- 🌈 Allow hair to grow out
- 🌈 Clean helmet
- 🌈 Do not share clippers and keep clean
- 🌈 Topical antimicrobial cleansers (chlorhexadrine) as preventative
- 🌈 If papules <3mm and no nodules, can use potent topical steroids:
 - 🌈 clobetasol propionate 0.05% foam twice daily for 8 weeks (followed by 4 weeks of betamethasone valerate 0.12% foam twice daily if lesions persisted)
- 🏥 For larger papules and plaques, 20 to 40 mg/mL triamcinolone acetonide intralesionally should be added to the regimen
- 🏥 Surgical excision can be considered for severe cases of FKN that are resistant to medical therapy, especially when large (eg, 3 cm) fibrotic plaques or nodules are present.
 - 🏥 Large elliptical horizontal excision with secondary intention
 - 🏥 Excision by carbon dioxide laser and electrosurgery (followed by second-intention healing)
 - 🏥 Long-pulsed 1064-nm Nd:YAG laser

Sports Dermatology





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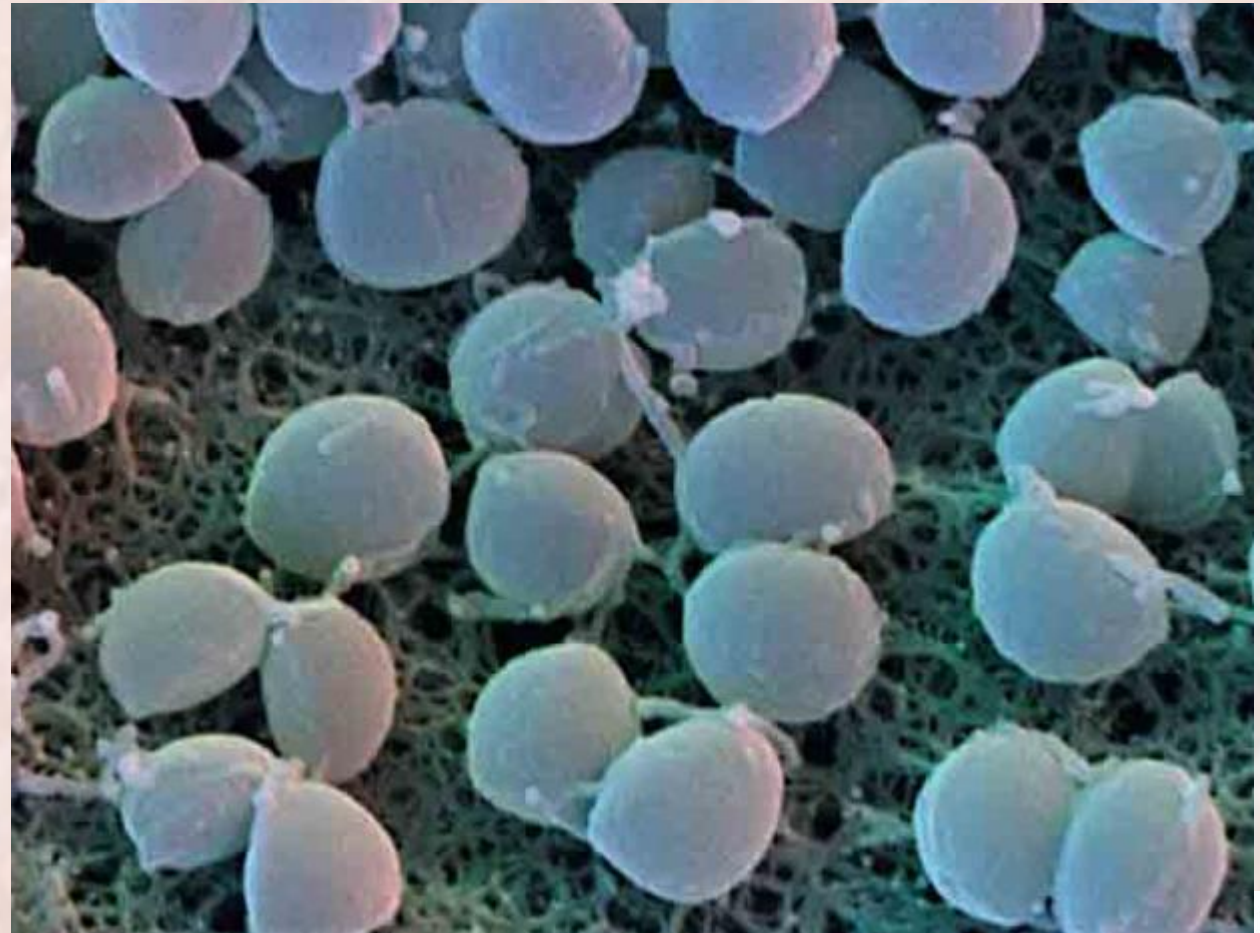
NCAA/NFHS Guidelines for Skin Infections

- Rules exist regarding proper treatment of skin infections and allowing return to play after treatment
- Governed by NCAA for college and NFHS for high school
- Goal is to prevent spread of communicable disease



Microbiological Causes

-  **Bacterial**
-  Viral
-  Fungal
-  Infestations



Bacterial Infections

🎯 Impetigo

- 🎯 Superficial skin bacterial infection
- 🎯 Honey crusted lesions on erythematous base
- 🎯 *S. aureus*, *S. pyogenes*



Impetigo Treatment

🎯 Warm soaks to loosen crust

🎯 Topical:

🎯 mupirocin 2% ointment BID

for 5-7 days

🎯 Retapamulin 1% BID for 5 days

🎯 Oral:

🎯 Azithromycin 250mg QD for 5 days





🎯 Doxycycline 100mg BID

🎯 Clindamycin 300mg Bid



Bacterial Infections

Bacterial folliculitis

-  Bacterial infection of hair follicles
-  *S. aureus* most common, less likely gram negative (*pseudomonas*)
-  Clothing, equipment can irritate skin causing folliculitis
-  I&D if needed, topical and/or oral antibiotics



Bacterial Infections

🌈 Furuncle/carbuncle

🌈 “Spider Bite”

🌈 Deep form of bacterial folliculitis

🌈 Abscess

🌈 *S. aureus* most common- MRSA



Abscess Treatment

I & D

Peroxide irrigation using IV catheter or butterfly tubing and Q-Tips

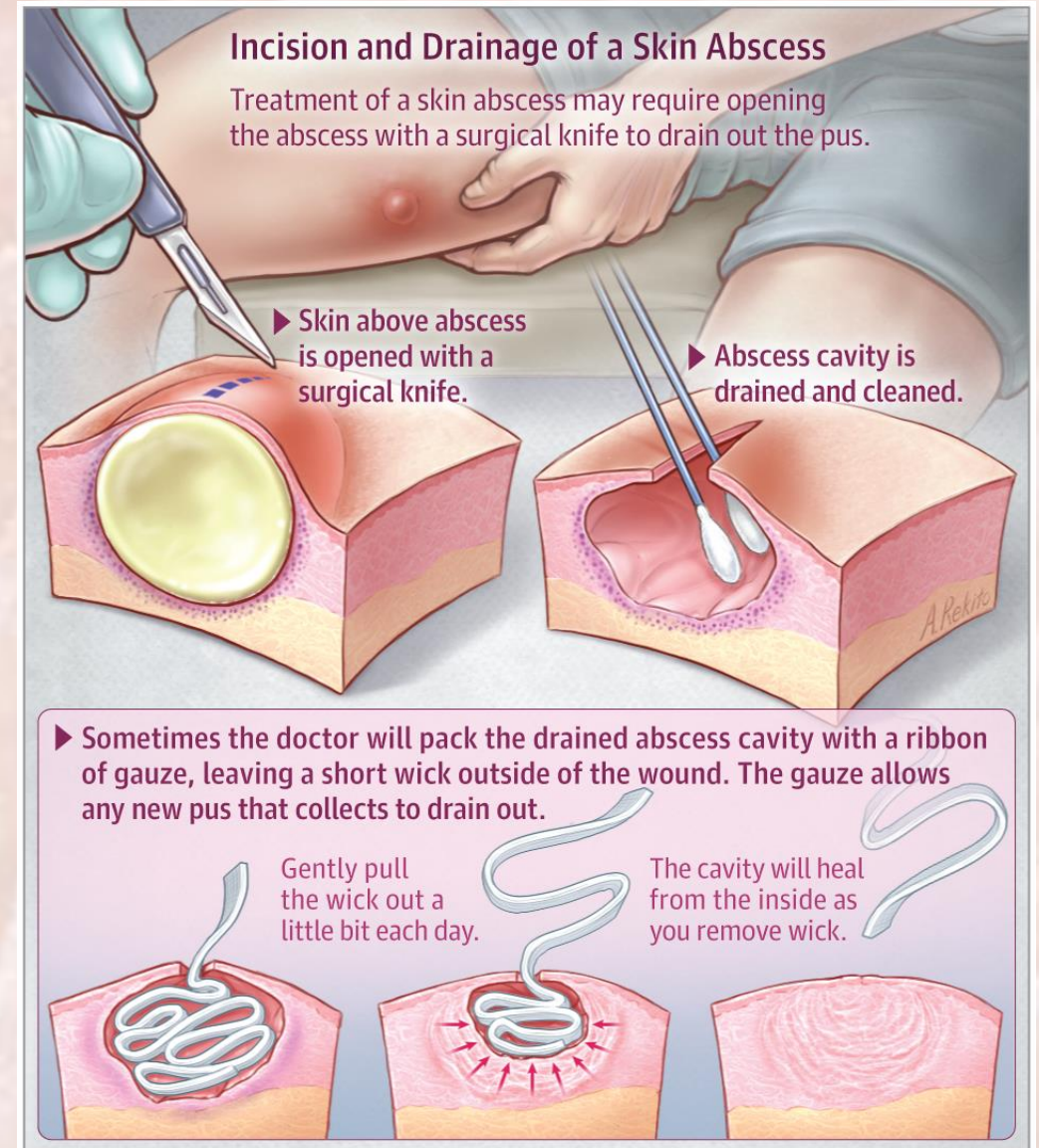
Pack if large

Recheck daily and irrigate and re-pack

Antibiotics:

Sulfamethoxazole/trimethoprim
800/160mg **TID**

Clindamycin 300mg BID



Furuncle Prophylaxis

- 🌈 Intranasal mupirocin 2% TID for 7 days
- 🌈 Clorox® bath: ½ cup Clorox® in ¼ tub of water (13 gallons) 15 minutes twice weekly
- 🌈 Chlorhexidine wash daily for 5-14 days

Catherine Liu, et al. Clinical Practice Guidelines by the Infectious Diseases Society of America for the Treatment of Methicillin-Resistant Staphylococcus aureus Infections in Adults and Children: Executive Summary, Clinical Infectious Diseases, Volume 52, Issue 3, 1 February 2011, Pages 285–292







NCAA/NFHS Guidelines for Skin Infections

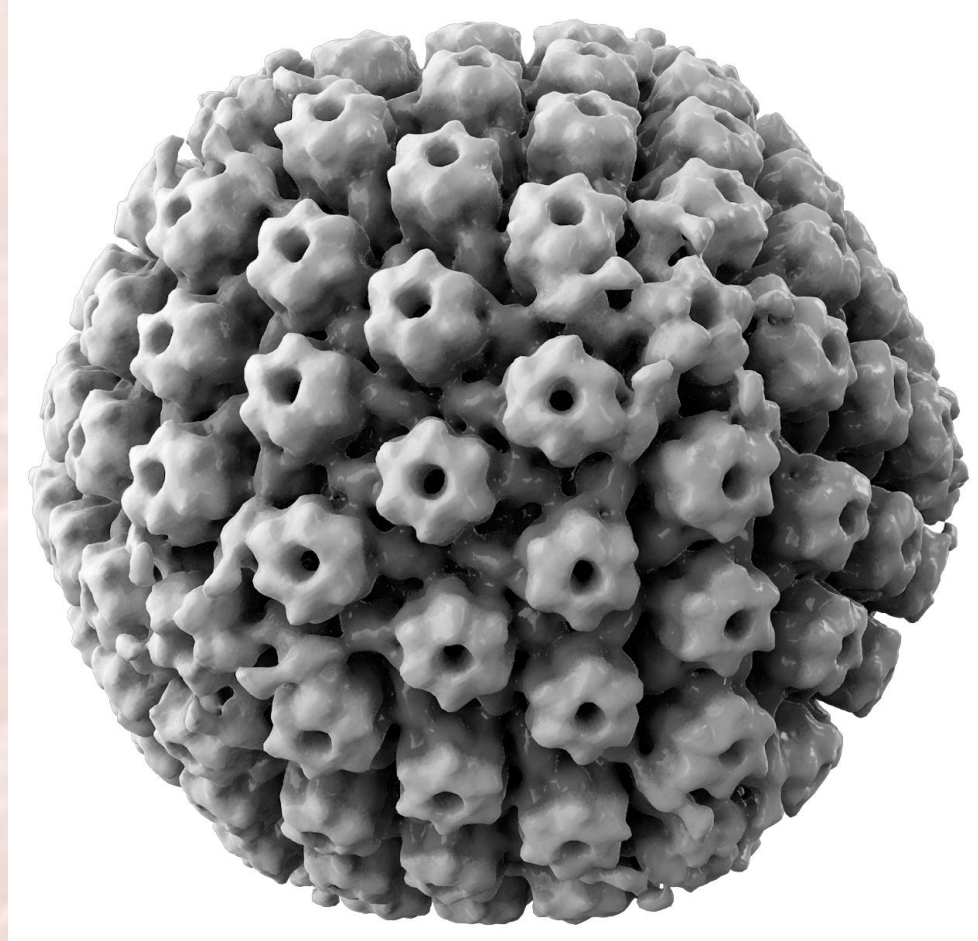
🌈 Bacterial infections

- 🌈 Athlete removed from practice and competition
- 🌈 No new lesions x 48hrs
- 🌈 Non-MRSA
 - 🌈 72hrs of antibiotic treatment, no moist or exudative lesions
 - 🌈 Cover with bio-occlusive (Tegoderm®)
- 🌈 MRSA
 - 🌈 abscesses must be drained and treated for 5 days
- 🌈 Gram stain questionable lesions
- 🌈 Active purulent lesions shall not be covered to allow participation



Microbiological Causes

-  Bacterial
-  **Viral**
-  Fungal
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Viral Infections

🌈 Herpes labialis/gladiatorum

- 🌈 HSV 1 infection of the perioral (labialis) or body (gladiatorum)
- 🌈 Spread by direct contact with virus (skin or objects in contact with skin)
- 🌈 33% probability of transmission if in contact
- 🌈 73% occur on head and face
- 🌈 29% wrestlers seropositive
- 🌈 Appears 3-8 days after contact in 90%
- 🌈 Transmission starts 2-3 days before vesicle appearance
- 🌈 Transmission can occur after crusting



Herpes Gladiatorum Treatment

Primary:

- Valcyclovir 1G BID for 7-10 days

Recurrent:

- Valcyclovir 500mg BID for 7 days

Prophylaxis:

- Valcyclovir 1 G QD if < 2 years of infection
- Valcyclovir 500mg QD if > 2 years of infection
- Valcyclovir 1 G QD starting 5 days before meet and continue until end

- If two individuals on team with outbreak, must shut down entire team for 8 days



NCAA/NFHS Guidelines for Skin Infections

- Herpes simplex (primary infection)
 - Free of symptoms of viral infection: fever malaise, lymphadenopathy
 - No new blister for 72 hours (48 hours for NFHS*)
 - No moist lesions, must have a firm adherent crust
 - NCAA: 120 hrs of appropriate treatment
 - NFHS: 10-14 days of treatment
 - Active lesions shall **not** be covered to allow participation



** Under current review to make 72 hours also*

NCAA/NFHS Guidelines for Skin Infections

- 🎯 Herpes simplex (recurrent infections)
 - 🎯 No new blister for 72 hours (48 hours for NFHS)
 - 🎯 No moist lesions, must have a firm adherent crust
 - 🎯 120 hours of appropriate treatment
 - 🎯 Active lesions shall **not** be covered to allow participation
 - 🎯 Consider prophylactic treatment for wrestlers with recurrent HSV infections



Viral Infections

🌈 Molluscum contagiosum

- 🌈 Epidermal papules caused by pox virus
- 🌈 Spread by direct contact (skin or objects in contact with skin)
- 🌈 Umbilicated center
- 🌈 Spontaneous resolution
- 🌈 Destruction of lesions:
 - 🌈 Curettage
 - 🌈 Liquid nitrogen for 15 seconds
 - 🌈 Imiquimod cream 3 times weekly for 1-3 months



NCAA/NFHS Guidelines for Skin Infections

🌈 Molluscum contagiosum

- 🌈 Lesions curetted or removed before the practice or competition
- 🌈 Solitary or localized , clustered lesions can be covered with gas-permeable membrane, pre-wrap and stretch tape that cannot be dislodged
- 🌈 May wrestle immediately



Viral Infections

🌈 Warts (verucca)

🌈 Papules with epidermal hyperplasia caused by HPV infection

🌈 Direct contact spread

🌈 Treat

🌈 Destruction

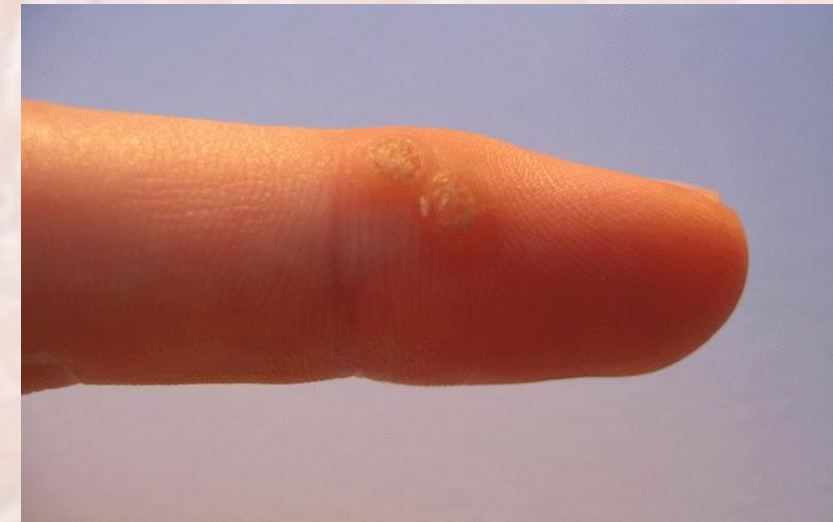
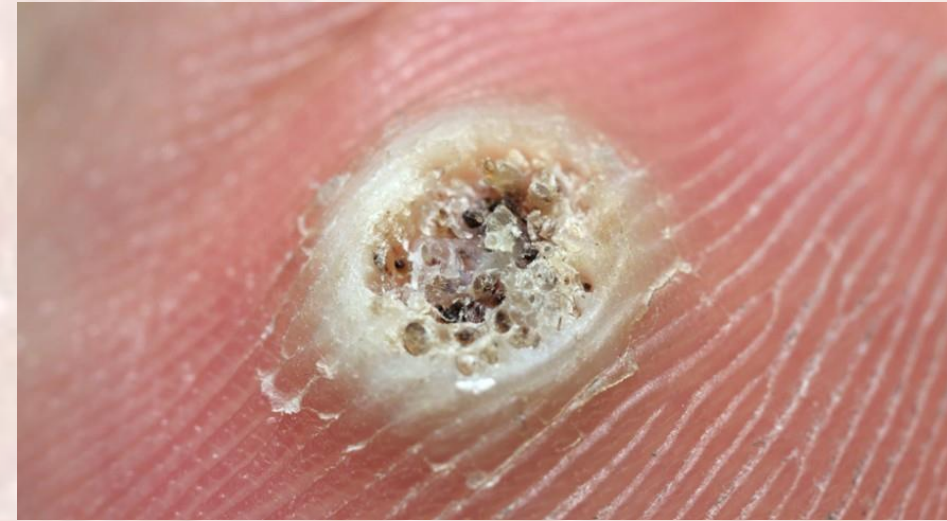
🌈 Cryotherapy with liquid nitrogen- freeze-thaw-refreeze. Ice ball for 2-3mm around lesion

🌈 Cantharidin/salicylic acid/podophyllin: apply to lesion, cover with non-porous tape, wash in 3 hours

🌈 Shave

🌈 Immunotherapy

🌈 Candida antigen injected SQ. Repeat Q 4 weeks as needed







NCAA/NFHS Guidelines for Skin Infections

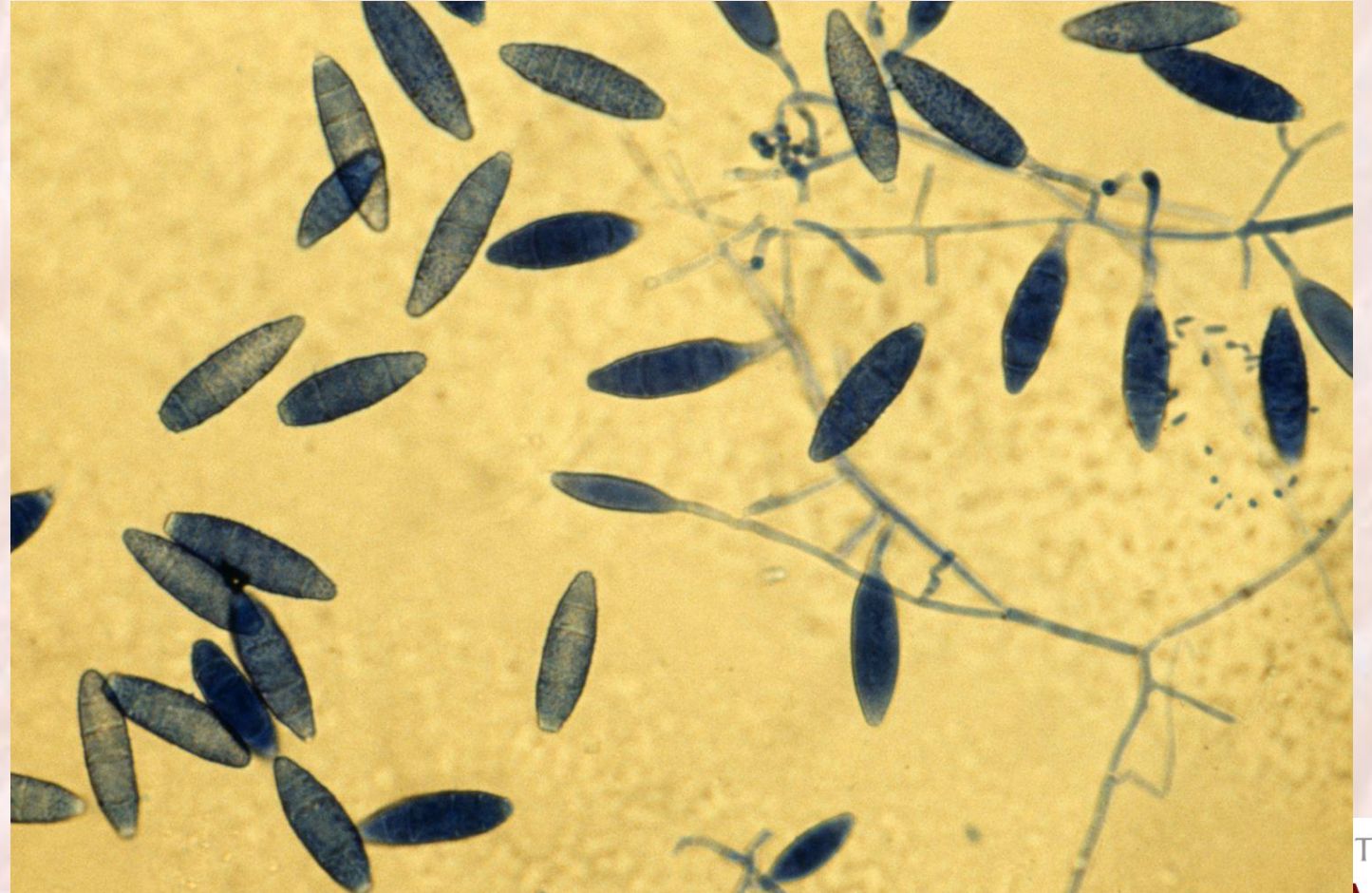
🎯 Verrucae

- 🎯 These lesions require no treatment or restrictions, but should be covered if prone to bleeding when abraded.



Microbiological Causes

-  Bacterial
-  Viral
-  **Fungal**
-  Infestations



Fungal Infections

- 🎯 Tinea pedis
 - 🎯 Dermatophyte infection of the feet
 - 🎯 Trichophyton genus
 - 🎯 Topical/oral antifungal



Fungal Infections


- 🎨 Tinea corporis (Ringworm)
 - 🎨 Dermatophyte infection of the body
 - 🎨 Microsporum and Trichophyton species
 - 🎨 Topical/oral antifungals










NCAA/NFHS Guidelines for Skin Infections

Fungal infections

Tinea Corporis

-  72hrs of oral or topical coverage for lesions on the body

Tinea Capitis

-  2 full weeks of **oral** treatment
-  Consider washing scalp before practice with ketoconazole 1% shampoo to reduce transmission of spores.
-  Continue with treatment until scalp lesions are gone.
-  Monitor for secondary infection (Kerion)
-  Disqualification for multiple or extensive lesions
-  May participate if covered with bio-occlusive
-  Final disposition decided by covering doctor or qualified ATC

Fungal Infections

🌈 Tinea unguium (Onychomycosis)

🌈 Dermatophyte infection of the finger and toe nails

🌈 Trichophyton and Candida





🌈 Oral antifungals for 3-4 months

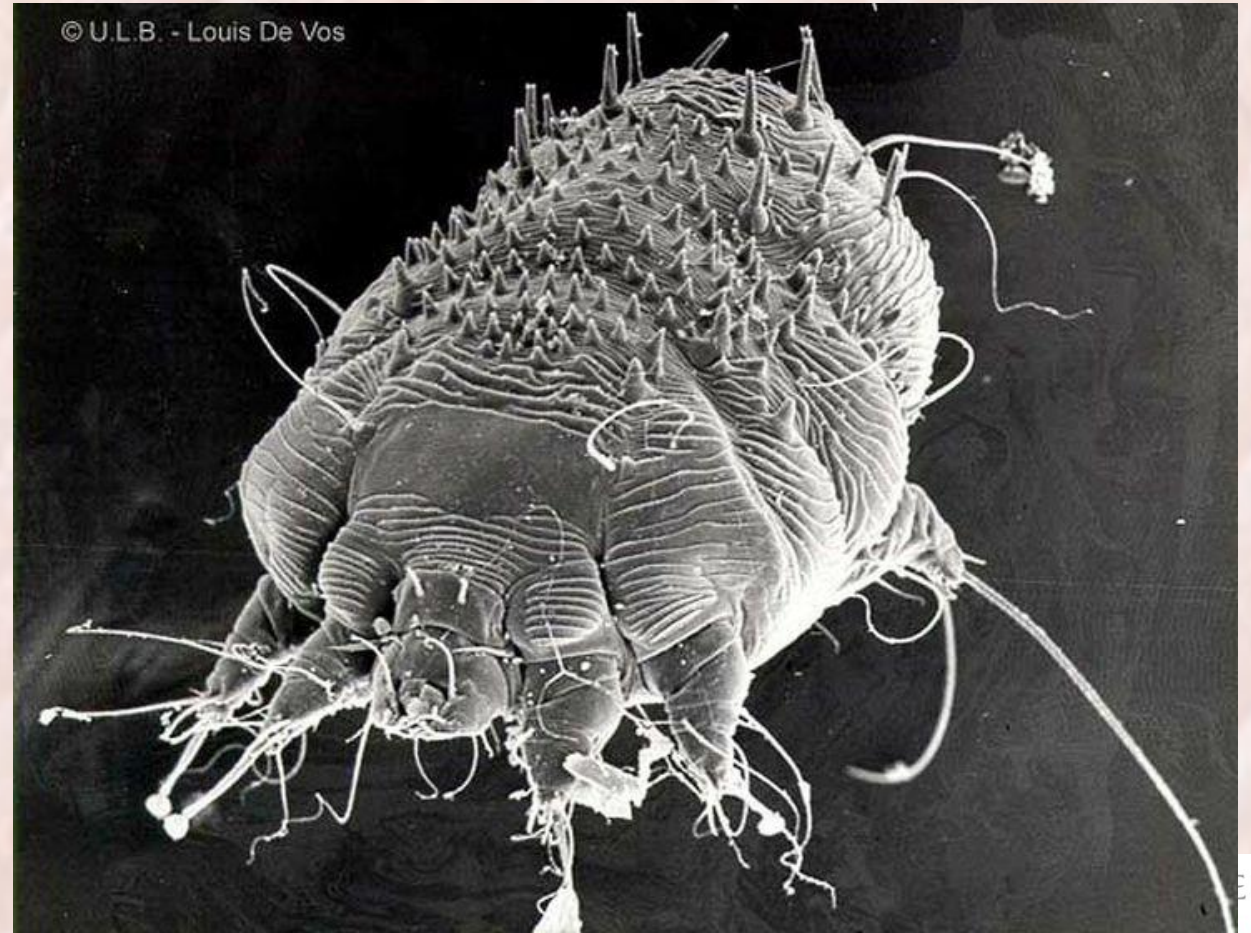
🌈 May take 4-6 months for nail to grow out

🌈 Often an extension of tinea pedis



Microbiological Causes

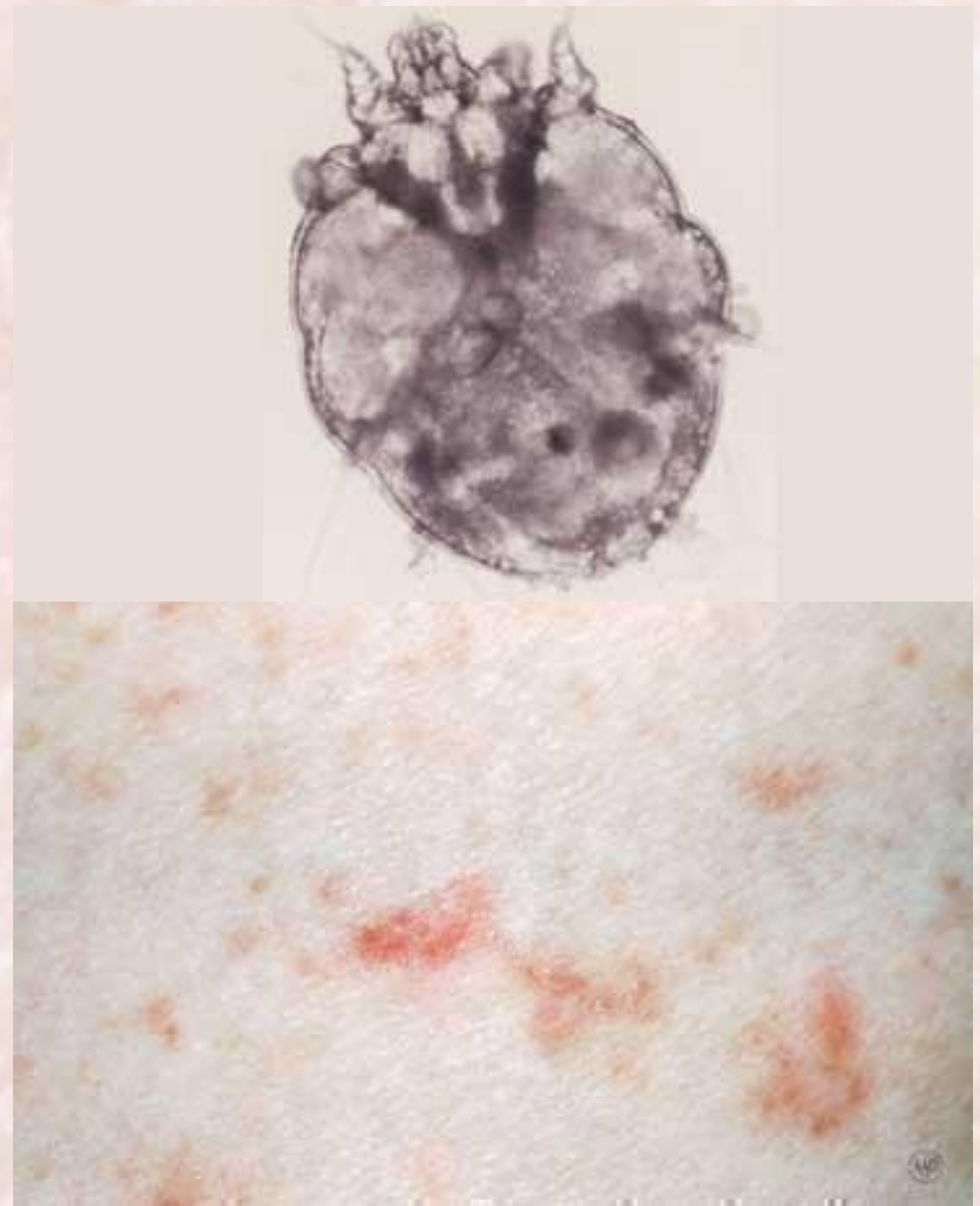
-  Bacterial
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Infestations

Scabies

- Very itchy parasitic mite infestation of the skin
- Characteristic tracking- tunnels
- In web spaces of fingers
- Spread by direct contact, sharing bedding, furniture etc.
- Treat with
 - permethrin 5% topical cream from neck down for 8-14 hours then wash
 - ivermectin 200mcg/kg po X 1 then repeat in 2 weeks
 - Lindane 1% topical lotion from neck down for 8 hours then wash
 - Wash everything
 - Itching can persist for 2 weeks



NCAA/NFHS Guidelines for Skin Infections

🎯 Scabies

- 🎯 Can participate 24 hours after appropriate treatment
- 🎯 Negative scabies prep at the time of the tournament



THANK YOU

