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Common Skin Infections and Conditions in Athletic Populations

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Learning Outcomes

After this course, participants will be able to:

- Identify at least two common causes of skin infections and conditions.
- Identify at least four signs and symptoms of common skin infections and conditions.
- Recommend at least two treatments for common skin infections and conditions

Introduction

- Background
 - Wilmington College
 - BS Athletic Training
 - Indiana University
 - MS Kinesiology
 - University of Findlay
 - EdD
 - Heidelberg University
 - 16 years working with NCAA DIII Wrestling

Sport/Rules Overview

- What sport do you primarily think of when someone says skin infection?
- RTP criteria for this presentation obtained from the NCAA Sport Medicine Handbook & the NCAA Wrestling Rule Book
 - Check high school rule books for differences

Prevention & Education

- Educating the athletes, coaches & parents is key to prevention
 - Personal Hygiene
 - Equipment Hygiene
 - Preventative measures
 - Skin checks, prophylactic medications
 - NATA Position Statement
- virtually all of the topics today are preventable

Skin Diseases/Conditions

- Bacterial
- Viral
- Fungal
- Other

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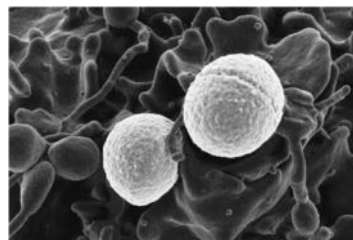
Bacterial Infections

- Staphylococcus
- Folliculitis
- Impetigo
- Cellulitis
- Furuncles/Carbuncles

continued

Staph Infections

- MRSA
 - (Methicillin-resistant Staphylococcus aureus)
 - caused by a type of staph bacteria which has become resistant to many of the antibiotics used to treat ordinary staph infections



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MRSA

- Signs/Symptoms
 - Anywhere on the body
 - Starts as swollen, painful red bump resembling pimple or spider bite
 - Warm to the touch
 - Full of pus or other drainage
 - Maybe accompanied by a fever
 - Generally a singular spot

continued

MRSA

- Highly contagious and can be life threatening
- Can spread rapidly internally and externally

continued

MRSA

- Treatment
 - Referral
 - Culture
 - Removal from all activities
- Return to Play
 - Athlete must have been without any new skin lesion for 48 hours before competition
 - Athlete must have completed 72 hours of antibiotic therapy and have no moist, exudative or draining lesions at competition time
 - Active lesions shall not be covered to allow participation

continued

Folliculitis

- Inflammation of hair follicles
- Bacterial or fungal
- Shaved or taped areas

continued

Folliculitis

- Appearance
 - small red bumps or white-headed pimples around hair follicles
 - The infection can spread and turn into non-healing, crusty sores
 - Usually clustered



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Folliculitis

- Communicability
 - Can be contagious
 - Not life-threatening
- Treatment
 - Antibiotic creams or pills to control infection
 - Oral antibiotics not routinely used
 - Creams, shampoos or pills to fight fungal infections
 - Laser Hair Removal

continued

Folliculitis

- Return to Play
 - Athlete must have been without any new skin lesion for 48 hours before the meet or tournament.
 - Athlete must have completed 72 hours of antibiotic therapy and have no moist, exudative or draining lesions at competition time
 - Active purulent lesions shall not be covered to allow participation.

continued

Impetigo

- Contagious, superficial bacterial infection
- Classified as bullous or non-bullous
 - Bullous
 - superficial blisters (bullae) which rupture easily
 - Non-bullous
 - most common form

continued

Impetigo

- Signs & Symptoms

- red sores which rapidly increase in size
- Ooze for a few days & then form a yellowish-brown crust
- Usually occur around nose & mouth
 - can be spread to other areas
- Itching & soreness generally mild



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Impetigo

- Treatment

- Prescription-strength antibiotic ointment mupirocin (Bactroban)
 - Non-prescription topical antibiotic ointments (Neosporin) generally are not effective

- Return to Play

- Athlete must have been without any new skin lesion for 48 hours before competition
- Athlete must have completed 72 hours of antibiotic therapy and have no moist, exudative or draining lesions at competition time
- Active purulent lesions shall not be covered to allow participation

continued

Cellulitis

- Caused by bacteria which live on the skin's surface
 - Infection of the deeper layers of the skin, commonly
- Potentially serious
- Bacteria enters through disrupted skin
 - Normally occurs on the lower leg
- Skin appears swollen and red
 - typically painful and warm to the touch
- Not contagious, normally

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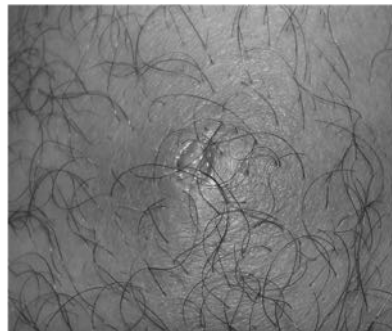
Cellulitis

- Treatment
 - Prescription oral antibiotic
 - Serious cases may require IV antibiotics & hospitalization
- Return to Play
 - Athlete must have been without any new skin lesion for 48 hours before competition
 - Athlete must have completed 72 hours of antibiotic therapy and have no moist, exudative or draining lesions at competition time
 - Active purulent lesions shall not be covered to allow participation.

Furuncles/Carbuncles

- Furuncles (boils)
 - Similar to folliculitis
 - Single infected follicle
- Carbuncles
 - Group of infected follicles
 - Larger & deeper

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Furuncles/Carbuncles

- Treatment
 - Warm compress
 - Incision and drainage
 - Antibiotics
- Return to Play
 - Athlete must have been without any new skin lesion for 48 hours before competition
 - Athlete must have completed 72 hours of antibiotic therapy and have no moist, exudative or draining lesions at competition time
 - Active purulent lesions shall not be covered to allow participation.

Viral Infections

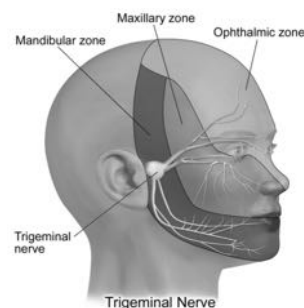
- Herpetic Infections
 - HSV 1
 - Shingles
- Molluscum Contagiosum
- Common Characteristics
 - Tend to be highly contagious
 - Most will be painful

Herpes Simplex Virus

- HSV-1
 - Oral herpes
 - Cold sores, fever blisters
 - Herpes Gladiatorum
 - Mat Herpes
- HSV-2
 - Genital herpes
- HHV-3
 - Varicella-zoster virus
 - Chickenpox and shingles
- HHV-4
 - Epstein-Barr
 - mononucleosis
- HHV-5
 - Cytomegalovirus
- HHV-6 & 7
 - Roseola Infantum
- HHV-8
 - Kaposi's sarcoma

Mat Herpes (HSV 1)

- 3-10 day incubation period
- Trigeminal nerve
- Often confused with Folliculitis



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continued

Mat Herpes (HSV 1)

- Fever and swollen glands may precede the appearance of sores or blisters
- Tingling sensation in the area affected by the virus
- Usually painful



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Mat Herpes

- Treatment
 - Valacyclovir 500mg b.i.d. for 7 days (recurrent outbreaks)
 - 1 gr t.i.d. for 7-10 days for primary infections
- Return to play
 - Blisters must be completely dry and covered by a firm adherent crust at time of competition
 - Athlete must have been on appropriate dosage of systemic antiviral therapy for at least 120 hours at the time of competition
 - Active herpetic infections shall not be covered to allow participation

continued

Shingles

- Herpes Zoster (HHV-3)
- Varicella-Zoster virus
 - Chicken pox
 - lies inactive in nerve tissue & may reactivate years later
- Can occur anywhere on the body
 - single strip of blisters which wrap around either side of the torso



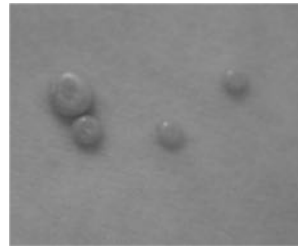
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Shingles

- Treatment
 - No cure, vaccine is available (Shingrix)
 - Valacyclovir to lessen severity
- Return to Play
 - Skin lesions must be surmounted by a firm adherent crust at competition time, and no evidence of secondary bacterial infection

Molluscum Contagiosum

- Relatively common viral infection of the skin
- Signs & Symptoms
 - round, firm, painless bumps
 - pinhead to a pencil eraser (1-10mm)
- If scratched or injured, the infection can spread to surrounding skin
- Skin-to-skin transmission



Dave Bray, MD, Walter Reed Army Medical Center [Public domain]

Molluscum Contagiosum

- Treatment
 - Various treatments
 - Lesions must be physically removed
- Return to Play
 - Lesions must be curetted or removed before competition
 - Solitary or localized, clustered lesions can be covered with a gas impermeable dressing, pre-wrap and stretch tape which is appropriately anchored and cannot be dislodged

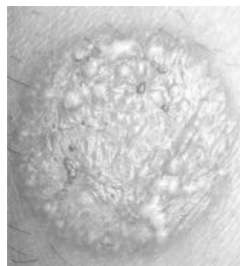
Fungal Infections

- Tinea
 - Corporis
 - Cruris
 - Pedis
 - Capitis
 - Versicolor
- Common Characteristics
 - skin changes, including red and possibly cracking or peeling skin
 - Itching
 - Moist, warm environs

Ringworm (Tinea Corporis)

- Characterized by a red circular rash
- Clearer skin in the middle, raised on edges
- Itchy (pruritic)
- Above the waist

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continued

Ringworm

- Return to Play
 - A minimum of 72 hours of topical therapy is considered appropriate therapeutic regimen to allow effective drug intervention for most tinea infections
 - Active lesions may be covered to allow participation if lesions are in a body location that can be “adequately covered”

continued

Tinea Cruris (Jock Itch)

- More common in males
- Warm weather or when wearing wet and tight clothing
- Genitals, upper inner thighs and buttocks

continued

continued

Tinea Cruris

- Scaly, pink border
- Can be quite itchy and may be painful
- Most common during the summer months
- Mildly contagious

continued

Tinea Cruris

- Treatment
 - Antifungal cream or lotion (miconazole, ketoconazole, or clotrimazole)
 - Keep area dry
 - Loose clothing

continued

Tinea Pedis

- “Athlete’s foot”
- Between toes
- Scaly, itchy rash
- Stinging and burning
- Can be spread via contaminated floors, towels or clothing
- Onychomycosis

continued

Tinea Pedis

- Treatment
 - OTC ointment, lotion, powder or spray
 - Terbinafine (Lamisil)
 - Severe cases may need prescription
- Return to Play
 - Athletes only need to be held out for severe cases

Tinea Capitis

- Ringworm of the scalp
- Signs & Symptoms
 - Round, patchy, gray, scaly portion of the scalp
 - Hair loss (alopecia)



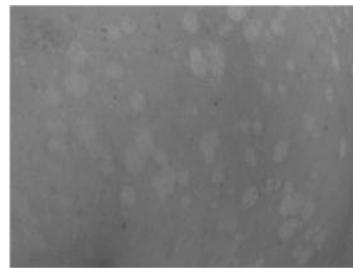
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Tinea Capitis

- Treatment
 - Requires oral antifungal medications
 - >14 days
 - Antifungal shampoo (ketoconazole or selenium sulfide)
- Return to Play
 - A minimum of two weeks of systemic (oral) antifungal therapy is required for tinea capitis lesions

Tinea Versicolor

- Pityriasis versicolor (yeast)
- Superficial fungal infection of the skin
 - often confused with Vitiligo
- Affects the skin's pigmentation
 - typically appear on the trunk and shoulders
- Warm, humid climates
- Not contagious



Tinea Versicolor

- Treatment
 - Antifungal soaps and creams
 - selenium sulfide, ketoconazole, or pyrithione zinc
 - Medicated cleansers
 - Anti-fungal Pills
- Return to Play
 - Athletes do not need to be removed from participation

continued

Other Conditions

- Insects/Parasites
 - Scabies
 - Bed Bugs
 - Spider Bites
- Other Common Skin Disorders/Conditions
 - Dermatitis
 - Urticaria
 - Psoriasis

continued

Scabies

- *Sarcoptes scabiei* (mite)
 - Burrow and lay eggs inside the skin
 - Leads to relentless itching and a rash
 - Characterized by intense nighttime itching
 - Webbing of fingers & skin creases
 - Can spread
 - 2-3 days away from human skin

continued

continued

Scabies

- Rash looks like blisters or pimples: pink, raised bumps with a clear top filled with clear fluid



CDC, Public domain

continued

Scabies

- All clothes and bedding need to be cleaned
 - 122°F for 10'
 - Possible fumigation depending on infestation
- Pillows, hat, coats etc.

continued

continued

Scabies

- Treatment
 - Scabicide lotions or cream
 - Permethrin cream 5% (Elimite)
 - Head to toes
- Return to Play
 - Athlete must have negative scabies prep at competition time
 - 24 hrs after treatment

continued

Bed Bugs (Cimex lectularius)

- Small, oval, brownish insects
 - live on the blood of animals or humans
- Adult bedbugs have flat bodies about the size of an apple seed
 - Bodies swell after feeding & are a reddish color
 - Not known to transmit any diseases
 - Typically found in mattresses, box springs, bed frames, and headboards



Mohamedhp [Public domain]

continued

Bed Bugs

- Bites are painless
 - Turn into itchy welts
 - Exposed areas during sleep
 - Do not have a red spot in the center like flea bites
 - Cause red bumps and intense itchiness
 - Appear in a linear row,
 - most commonly found on the face, neck, arms, and hands



continued

Bed Bugs

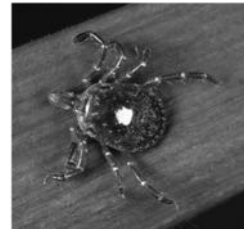
- Prevention
 - Vigilant while traveling
 - Wash and dry clothing on high heat
- Treatment
 - Cleaning
 - Pesticides

continued

Ticks

- Diseases transmitted by ticks:
 - Lyme Disease
 - Deer tick
 - Rocky Mountain Spotted fever (RMSF)
 - Dog tick and wood tick
 - Alpha-gal syndrome
 - Lone Star tick
 - Allergy to red meat

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James GathanyContent
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Tick Prevention

- Use a chemical repellent with DEET, permethrin or picaridin
- Wear light-colored protective clothing
- Tuck pant legs into socks
- Avoid tick-infested areas
- Check yourself and pets daily for ticks
- Carefully remove any ticks



CDC, James Gathany Public Health Image
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continued

Spider Bites

- Brown Recluse
- Black Widow



Br-recluse-guy [Public domain]



Ken Thomas [Public domain]

continued

Flea Bites

- Irregular pattern
- Ankles & feet

continued

continued

Dermatitis

- Contact dermatitis
 - Direct contact with allergen or irritant
 - soap, cosmetics, fragrances, jewelry, and poison ivy
 - Red rash wherever contact was made
 - Avoid the irritant or allergen
 - Creams or medications can help reduce itching

continued

Urticaria

- Cold Urticaria
 - Raised welts, angioedema (swelling) or both
 - Hives or urticaria are localized itchy and swollen plaques of variable size
 - Lesions are fleeting
 - Last less than 24 and don't leave a trace

continued



Questions?

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