

Skin Conditions in Sports: What is that rash/lesion?

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Common Types of Lesions

★ Vesicles

- Small, fluid-filled blister
- <5 mm in diameter



★ Pustules

- Small, inflamed, pus-filled blister-like lesions
- Usually <5 mm



Common Types of Lesions

★ Papules

- Solid, elevated, round bump <5 mm
- May be pigmented or flesh-colored



★ Nodules

- Solid, raised bumps 5 mm - 2 cm



Common Types of Lesions

★ Macules

- Small, flat (not palpable) spots or blemishes



★ Plaques

- Broad, slightly raised, well-circumscribed lesion on the skin



Common Types of Lesions

★ Wheals

- Circumscribed lesions of inflamed skin



★ Scales

- Excess epidermis forming small flakes



Most Common Vehicles for Transmission of Skin Conditions

- ★ Skin-to-Skin Contact
- ★ Towels
- ★ Water bottles
- ★ Weights (hand-held and bars)



Prevention of Skin Conditions

- ★ Wash hands thoroughly with soap and water
- ★ Shower immediately after activity
- ★ Do not share towels, razors, athletic clothing, or equipment
- ★ Wash athletic clothing and towels after each use
- ★ Disinfect commonly used equipment
- ★ Keep facilities and equipment clean
- ★ Follow proper first aid procedures when treating all wounds
- ★ Suspicious and/or active skin lesions should be referred to a physician
- ★ Cover skin lesions before participation in a sports activity
- ★ Follow NCAA and NFHS guidelines for return to play

Infections

★ Bacterial

- Methicillin-resistant *Staphylococcus aureus*
- Impetigo
- Folliculitis
- Furuncles

★ Fungal

- Tinea Pedis
- Tinea Cruris
- Tinea Corporis
- Tinea Capitis
- Tinea Unguium

★ Viral

- Herpes Simplex
- Molluscum Contagiosum

★ Parasitic

- Scabies
- Pediculosis

Methicillin-Resistant *Staphylococcus Aureus* (MRSA)

★ CA-MRSA: Community Acquired – MRSA

★ HA-MRSA: Healthcare Acquired – MRSA

★ MRSA

- Bacterial skin infection caused by a strain of staph infection that is resistant to antibiotics
 - 1993 = First report of a CA-MRSA infection in athletes
 - 2013 = ~100,000 people treated annually for MRSA

Bacterial Skin Infections

CA-MRSA

★ S & S

- presents with a small pimple like lesion
- usually occurs at the site of a previous wound (abrasion, laceration)
- Low grade fever
- Extremely painful for small lesion
- Breakouts are common among teammates





Multiple abscess-like lesions on the lower axillary region of a young male with cutaneous CA-MRSA infection.



CA-MRSA

★ Treatment

- Refer immediately to physician
 - Drain wound & prescribe antibiotic
- Hibiclens soap prescribed for daily use
- Cover wounds with a sterile dressing

★ Return to Play Guidelines

- Athlete cannot engage in contact activities until proven infection free



Impetigo

★ Highly contagious *Staphylococcus aureus* infection

- Particularly common in wrestlers, swimmers, and gymnasts
- Face, arms, legs, and trunk are most common sites



Impetigo

★ S&S

- Honey colored, crusted lesions
- Lesions erupt leaving pus discharge to dry on the skin
- Lesions are painless but extremely itchy



★ Treatment

- Immediately remove from activity
- Refer to physician
 - Topical antibiotics applied 3x/day for 10 days
 - Oral antibiotics

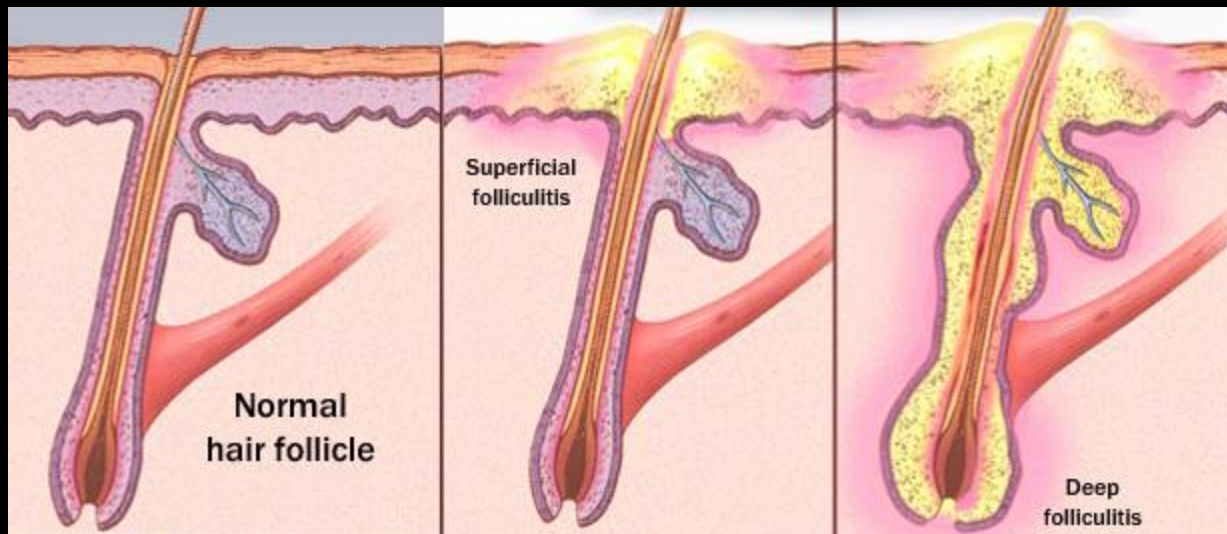
Impetigo

★ Return to Play Guidelines

- Athletes may return to play when:
 - Lesions are dried
 - After completing 5 days of antibiotics
 - No new lesions within the last 48 hours
 - Active lesions (moist, weepy) cannot be covered to allow participation
 - Dried lesions can be covered with a non-permeable dressing to allow participation

Folliculitis

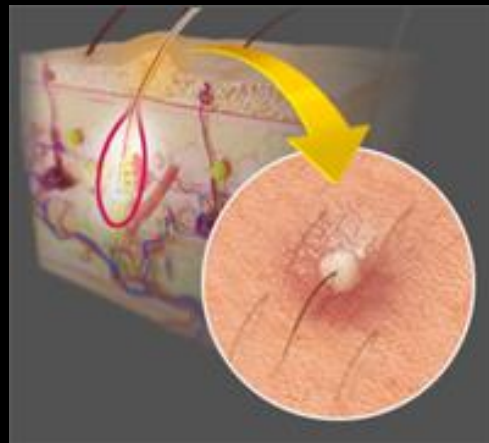
- ★ Inflammatory reaction in the hair follicles
 - Commonly occurs in the hair follicles on the face, chest, armpit, buttocks, groin, and legs
 - Common Cause = shaving with razor



Folliculitis

★ S & S

- Small, white-headed or red papules (pimples) around hair follicles
- Hair shaft within a papule
- May itch and/or be painful



Folliculitis

★ Treatment

- Wash area with antibacterial soap and water 2-3x/day
- Change razors after each use
- Topical antibiotic/microbial ointment (i.e. bacitracin)

★ Return to Play Guidelines

- No new lesions for 48 hours
- Cover non-active lesions to participate
- No participation with active lesions

Furuncles

★ Furuncles (boils)

- Walled-off abscess containing pus
- Caused by bacteria – *Staphylococcus aureus*
- Commonly occur at neck, waistline, armpit, groin, thigh and buttocks



Furuncles



★ S&S

- Tender, red, swollen, firm papule
- Pain (due to pus & dead tissue build up)
- Pea to golf ball in size
- May develop white or yellow centers
- May weep, ooze, or crust
- Other symptoms:
 - Fatigue
 - Fever



Furuncles

★ Treatment

- Warm, moist compresses applied 3x/day, 10 min each
- Allow boil to come to head (Do Not “Pop” Boil)
- Let pus pocket drain naturally – clean and dress the wound several times per day
- Referral to Physician if boil lasts longer than 2 weeks
 - Lances & drains the abscess
 - Prescribes antibiotic

Furuncles

★ Return to Play Guidelines

- No new lesions within 48 hours
- On antibiotic treatment for 72 hours
- Active lesions cannot be covered to allow participation
- Dried lesions can be covered to allow participation

Acne Mechanica

★ Papules or pustules that develop in response to a combination of:

- Pressure
- Friction
- Heat
- Occlusion



★ Common in sports requiring helmets

Acne Mechanica

★ Treatment

- Eliminate the cause & condition clears up on own
- OTC acne products
- Facial cleansers

★ Return to Play Guidelines

- Not contagious
- No limitation to activity
- Participation allowed without restrictions

Herpes Simplex

★ Contagious viral infection that presents as cold sores, fever blisters, genital herpes, and herpes gladiatorum (face & trunk)

- Most common types
 - HSV-1 (occurs above the waist)
 - HSV-2 (occurs below the waist)



Herpes Simplex

★ S & S

- Flu-like symptoms including:
 - Fever
 - Sore throat
 - Malaise
- Fluid-filled vesicles on a red base
- Tingling & pain may precede an outbreak



★ Treatment

- Refer to physician for oral antiviral medication

Herpes Simplex

★ Return to Play Guidelines

- Withheld from activity until asymptomatic
- No new lesions within past 72 hours
- Completion of at least 120 hours (5 days) of antiviral medication therapy
- No moist lesions, and all existing lesions must be dry with firm adherent crust
- No contact until 7th calendar day after starting medications if other criteria have been met

Molluscum Contagiosum

- ★ Viral skin infection that causes raised, pearl-like papules or nodules on the skin.
 - Caused by molluscum contagiosum virus
 - Very contagious infection
 - Commonly appears on face, trunk, arms, legs, and genital areas



Molluscum Contagiosum

★ S & S

- Pearly, flesh-colored dome shaped papules/nodules with a center dimple
- Central core or plug of white, cheesy, waxy material



Molluscum Contagiosum

★ Treatment

- Spontaneously resolve in 6-12 months
- Freezing each lesion with liquid nitrogen
- Cover with gas-permeable bandage (i.e. Tegaderm, Bioclusive), followed by prewrap and stretch tape for participation
- If lesions are too numerous or cannot be covered, all lesions must be frozen or curetted and removed before return is allowed

Molluscum Contagiosum

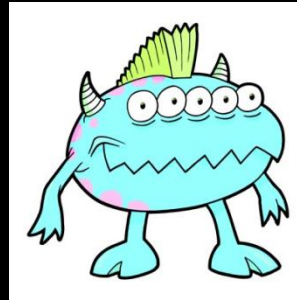
★ Return to Play Guidelines

- All lesions must be removed (frozen or curetted) before participation
- Isolated or small clusters of lesions may be covered with a gas-permeable membrane and tape to allow for participation

Meet the Tinea Family



Tinea Pedis



Tinea Capitis



Tinea Unguium



Tinea Corporis



Tinea Cruris

What is Tinea?

- ★ Skin, hair, or nail infections caused by a group of fungi called dermatophytes
 - Dermatophytes = Ringworm fungi
 - Tinea = Superficial Dermatophyte (Fungal) Infection



Transmission/Contraction of Tinea

- ★ Direct contact with infected person
- ★ Contact with contaminated items such as combs, unwashed clothing, equipment, athletic shoes
- ★ Dark, warm, & moist environments
 - Floors of locker rooms/public showers
- ★ Pets

Prevention is Best Defense

- ★ Remove shoes and expose feet to the air
- ★ Change socks and underwear daily
- ★ Dry feet/toes after using locker room showers
- ★ Avoid walking barefoot in public areas
- ★ Do not share towels/clothing
- ★ Clean exercise equipment before & after you use it

Tinea pedis

(Ringworm of the foot)

- ★ Commonly called Athlete's Foot
- ★ Originates in the toe webs, particularly between 4th & 5th toes
- ★ Characterized by red rash that is dry, itchy, & scaly
- ★ As condition worsens-bacteria accumulates along with the fungus making the toe webs appear white and soggy
- ★ Cracks, blisters, and pimples may also erupt on the soles of the feet, making walking painful

Athlete's Foot



Athlete's Foot

★ Treatment

- Apply antifungal agent to affected area twice daily
- Oral antifungal agents can be physician prescribed for severe cases
- Symptoms usually disappear within a 3-7 days
- Condition should totally clear after ~4 weeks of treatment

Antifungal Agents for Athlete's Foot

★ OTC Topical Medications

- Tolnaftate (Tinactin®)
- Terbinafine (Lamisil AT®)
- Miconazole (Micatin®)
- Clotrimazole (Lotrimin®)



★ Rx Oral Medication

- Griseofulvin



Tinea cruris

(Ringworm of the groin)

- ★ Commonly called Jock-Itch
- ★ Attacks upper, inner thighs and groin area of men, especially those between ages of 18-40
- ★ Characterized by red, scaly rash that is very itchy
- ★ Rash often has ring-shaped or sharp border
- ★ Usually originates in crease between the inner thigh and scrotum
- ★ If untreated, may spread around groin, down thigh, and across scrotum and penis
- ★ Women experience similar condition called “feminine itching”

Tinea cruris



Treatment of Jock Itch

★ OTC Topical Medications

- Tolnaftate (Tinactin®)
- Terbinafine (Lamisil AT®)
- Miconazole (Micatin®)
- Clotrimazole (Lotrimin®)
- Camphor (Blue Star®)
- Condition should clear in ~2 weeks



Tinea corporis (Ringworm of the Body)

- ★ Presents as an itchy, red-brown, scaling, annular (ring-shaped) plaque that expands peripherally and clears centrally
- ★ Occurs on the skin of the trunk & limbs



Treatment of Tinea Corporis

★ OTC Topical Medications

- Tolnaftate (Tinactin®)
- Terbinafine (Lamisil AT®)
- Miconazole (Micatin®)
- Clotrimazole (Lotrimin®)



Tinea capitis

(Ringworm of the Scalp)

- ★ Presents as small, grayish scales, resulting in scattered bald patches
- ★ Frequently occurs in children and is spread via direct contact



Treatment of Tinea Capitus

★ OTC Topical Medications

- Tolnaftate (Tinactin®)
- Terbinafine (Lamisil AT®)
- Miconazole (Micatin®)
- Clotrimazole (Lotrimin®)

★ Rx Medications (Oral tablets or syrups)

- Griseofulvin
- Terbinafine
- Itrconazole

★ Rx Shampoo

- Ketoconazole



Tinea unguium (Ringworm of the Nails)

- ★ Also called Onychomycosis
- ★ Some may present as yellow, cloudy, discolored nails with debris accumulating underneath
- ★ Nail becomes thickened, brittle, & separated from its bed



Tinea unguium (Ringworm of the Nails)



Treatment of Tinea Unguium

- ★ Antifungal creams – NOT EFFECTIVE
- ★ Oral Antifungal Necessary & Successful
 - Itraconazole (200 mg/day x 3 months)
 - Fluconazole (150 mg once a week for 6 months)
 - Terbinafine (250 mg/day for 6 weeks)

Scabies

★ Caused by mites which cause extreme nocturnal itching (tunnels and lays eggs)



★ S & S

- Appear as dark lines between fingers and toes, body flexures, nipples and genitalia
- Excoriations, pustules and papules caused by itching tends to hide true cause
- Skin develops hypersensitivity to the mite
- Symptoms may not develop for 3-4 weeks after exposure
- Severe itching that interferes with sleep is most common symptom



Scabies

★ Treatment

- Refer to physician for prescription
 - 5% permethrin cream (applied to body from neck down and washed off in 8-14 hours)
 - Oral medication for itching
- Wash all bedding and clothing in hot water and dry on hot cycle for minimum of 20 minutes
- Place helmets, headgear, shoes in a plastic bag for 2 weeks

Scabies

★ Return to play

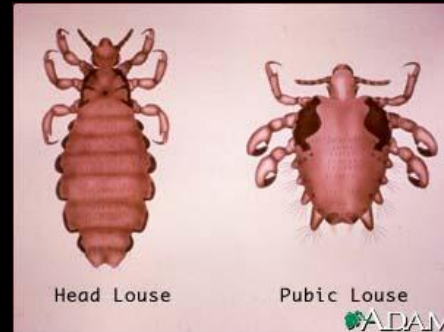
- Infected athletes should be withheld from contact sports during the treatment period
- NCAA guidelines require wrestlers have a negative scabies test at the tournament in order to complete

Pediculosis

★ Parasite infestation with lice

★ 3 most common sites

- head (pediculus capitis)
- body (pediculus corporis)
- genital area (pediculus pubis)



★ S & S

- Intense itching of the scalp
- Nits (small, gray-white egg)

Pediculosis

★ Treatment

- Topical OTC medications (i.e. Nix & RID)
 - Nit comb to remove eggs
- Check for lice every 2-3 days for 2 weeks
- Do not wash hair for 1-2 days after treatment
- Place helmets, headgear, and shoes in plastic bag for 2 weeks

★ Return to play

- NCAA guidelines require that infected individuals complete treatment and show no signs of lice in order to compete

Contact Dermatitis

- ★ Caused by exposure to or contact with a specific allergen
- ★ Common Allergens in Sports
 - Rubber products (shoe insoles, wet suits, braces)
 - Topical creams (analgesics, antiseptics)
 - Athletic tape
 - Epoxy (face gear)

Contact Dermatitis

★ S & S

- Itching
- Redness
- Swelling
- Clustered papulovesicles that ooze fluid & form crust
- Symptoms may take 1-7 days to develop



Eczema

★ Chronic dermatitis

★ S & S

- Itchy lesions
- Red, dry skin
- Thickening of the epidermis
- Scales
- Fissure or cracks in the skin



Psoriasis

- ★ Chronic inflammatory skin condition commonly found on the extensor surfaces of the body (knees, elbows, knuckles)
- ★ S & S
 - Silvery white plaque with surrounding redness with distinct borders

Psoriasis



Cold Urticaria

- ★ Hives caused by exposure to cold
- ★ Most commonly seen in 18-25 year olds
- ★ Recurrences spontaneously resolve within 1-2 years
 - May last for 10 years or more
- ★ S & S
 - Hives within 5 minutes of exposure to ice, cold water, or a sudden drop in the air temperature



Cholinergic Urticaria

- ★ Hives caused by exposure to heat or overheating the body
- ★ Systemic reaction to a rapid rise in core temperature of 1.8°F or greater
 - Physical exercise
 - Hot showers or baths
 - Fever
 - Anxiety
- ★ Occurs within 2-20 minutes of exposure
- ★ Most resolve within 3-4 minutes, may last up to 3 hours post-exposure

Cholinergic Urticaria

★ S & S

- Itching on extremities without a specific rash
- Burning
- Tingling
- Warmth
- Hives or distinct wheals ranging in size from small (2-4 mm) to large (5-10 mm)
- Higher core temperature than normal



Case Study 1

After removing his catcher's gear, Sam, a high school baseball player, notices a rash developing on his forehead and chin where the facemask rubs his face.



😊 What skin condition do you suspect?

Case Study 2

Twenty-year-old female soccer player complains of itchy, scaly patches affecting the fourth and fifth toe webs and plantar aspects of her forefeet.

She has history of wearing occlusive footwear with no socks. She does not dry between her toes after shower.

😊 What skin condition do you suspect?

Case Study 3

A cross-country runner reports to practice complaining of severe itching, especially at night. She also exhibits brownish lesions dispersed around her ankles/feet

😊 What skin condition do you suspect?



Case Study 4

Seventeen-year-old wrestler comes to the athletic training room stating he developed multiple red, somewhat itchy, circle shaped rashes on the right side of his chest and left periareolar area one week earlier but did not report them to you or his parents. He now complains of a new lesion on his anterior neck.

😊 What skin condition do you suspect?



Case Study 5

A wrestler reports lesions on his skin that are pearly/flesh colored, dome shaped papules with a center core of white cheesy or waxy material.

😊 What skin condition do you suspect?



Case Study 6

A swimmer reports to you with a small patch of honey-colored, crusted lesions on his chest.

😊 What skin condition do you suspect?



References

- ★ Crawford, F., & Hollis, S. (2007). Topical treatments for fungal infections of the skin and nails of the foot. <http://www.ncbi.nlm.nih.gov/pubmed/17636672>
- ★ Cuppett, M., & Walsh, K.M. (2005). *General Medical Conditions in the Athlete*. St. Louis, MO: Elsevier Mosby
- ★ Dermatophytes (Ringworm). Centers for Disease Control and Prevention. <http://www.cdc.gov>
- ★ Haugh, M., Helou, S., Boissel, J.P., & Cribier, B.J. (2002). Terbinafine in fungal infections of the nails: a meta-analysis of randomized clinical trials. <http://www.ncbi.nlm.nih.gov/pubmed/12100193>
- ★ Houglum, J. E., & Harrelson, G. L. (2011). *Principles of Pharmacology for Athletic Trainers*. 2nd Edition. Thorofare, NJ: Slack
- ★ Mangus, B. C., & Miller, M. G. (2005). *Pharmacology Application in Athletic Training*. Philadelphia, PA: F. A. Davis
- ★ Prentice, W. (2011). *Principles of Athletic Training: A Competency-Based Approach*. 14th Edition. New York, NY: McGraw-Hill
- ★ Ringworm. MedlinePlus. <http://www.nlm.nih.gov/medlineplus>
- ★ Pictures obtained via [www. google.com](http://www.google.com)