SKIN CONDITIONS & SPORTS

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OBJECTIVES

At the conclusion of the lecture, participants will be better able to

1. understand potential effects of sports activities on skin
2. recognize common mechanically-induced skin injuries from sports
3. recognize common inflammatory conditions seen with sports
4. aid in diagnosis and treatment of mechanical and inflammatory skin conditions from sports

Skin Conditions & Sports

Mechanically induced:

- repetitive trauma
- friction

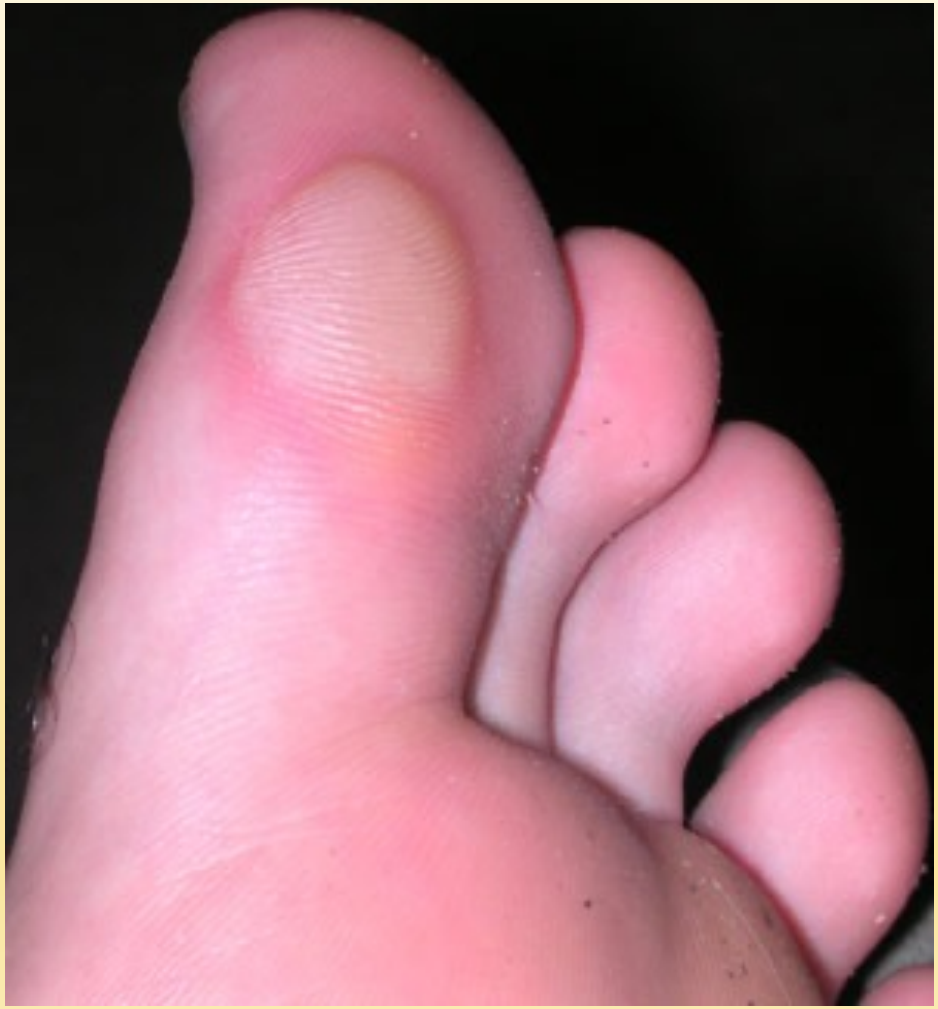
Inflammatory

- contact dermatitis
- urticaria

Infectious:

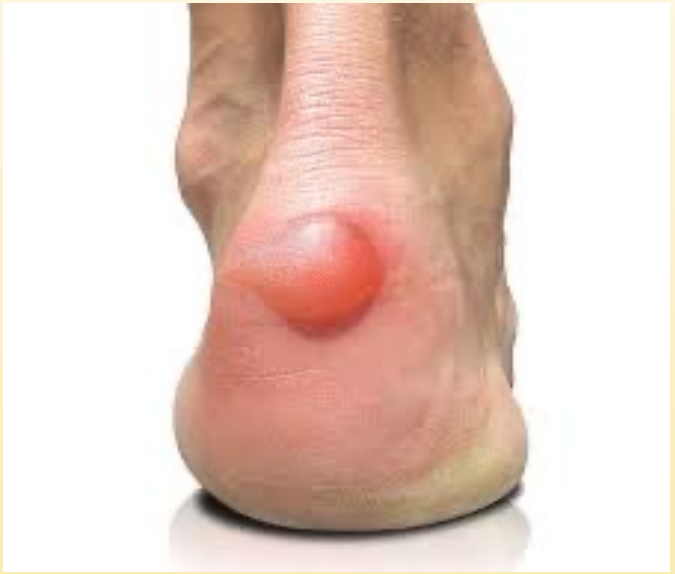
- close contact with other athletes
- poor cleansing of equipment
- environment
- trauma

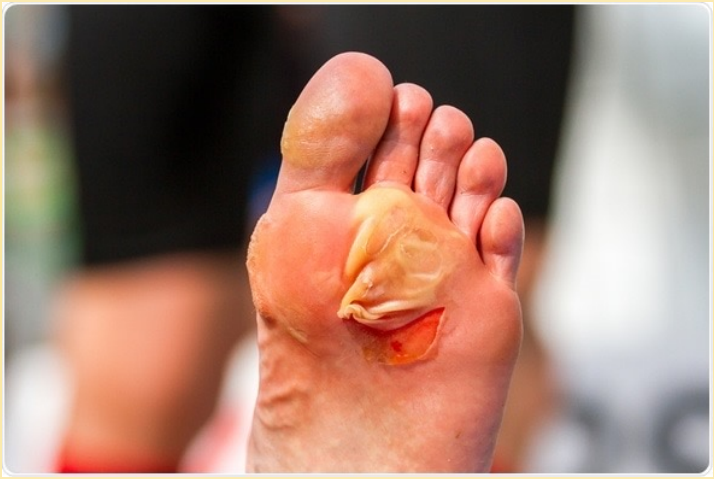
Friction blister



Friction blisters

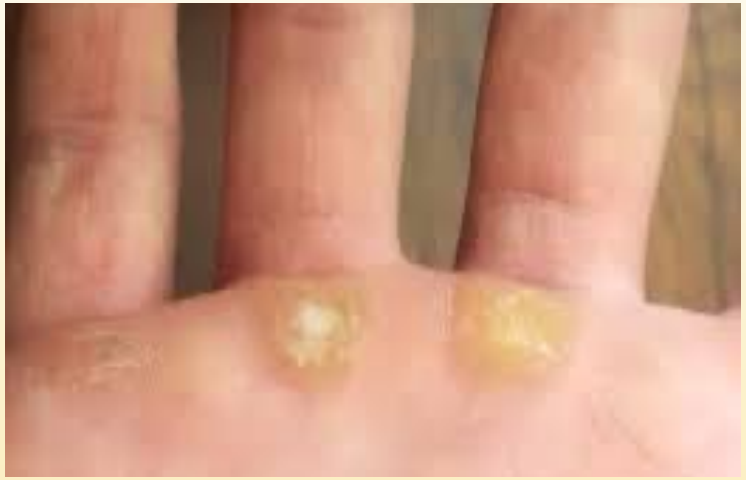
- From repetitive high frictional stress; painful
- Increased with heat, moisture, sudden new activities
- Clear or hemorrhagic fluid
- Especially tips of toes, balls of feet, posterior heel
- Incise and drain if painful; leave roof on
- Acrylic socks better than cotton

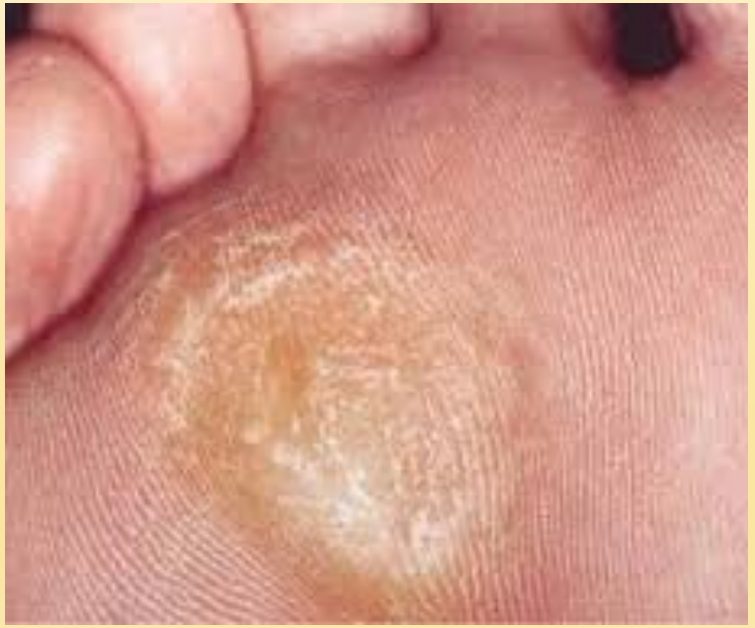


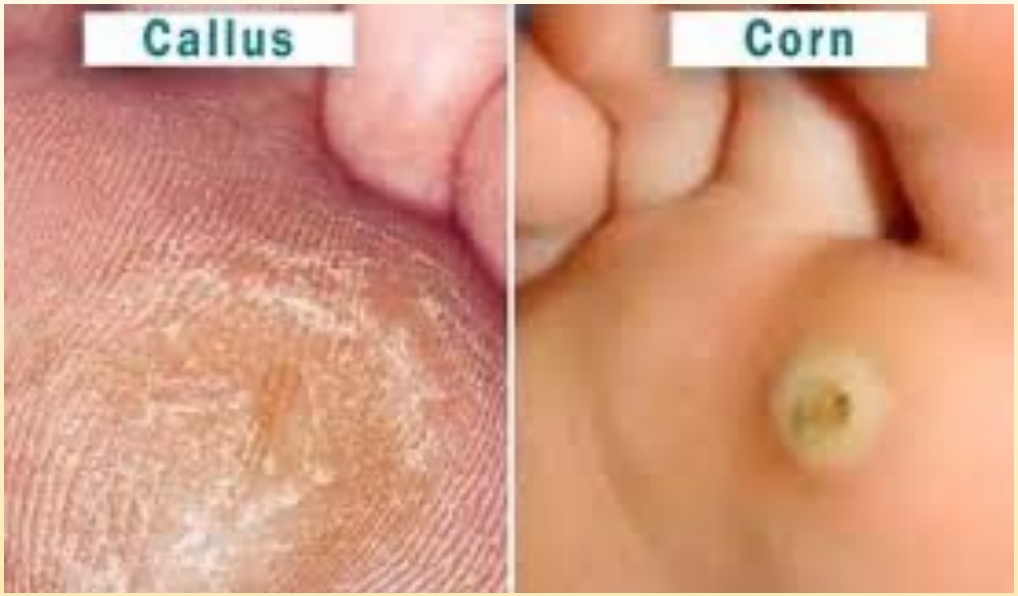


Callus

- Thickened, hyperkeratotic skin
- Usually painless
- Protective
- If treatment desired:
  - *Keratolytic creams (urea, salicylic acid)*
  - *Simple debridement*
- Prevention: cushioning





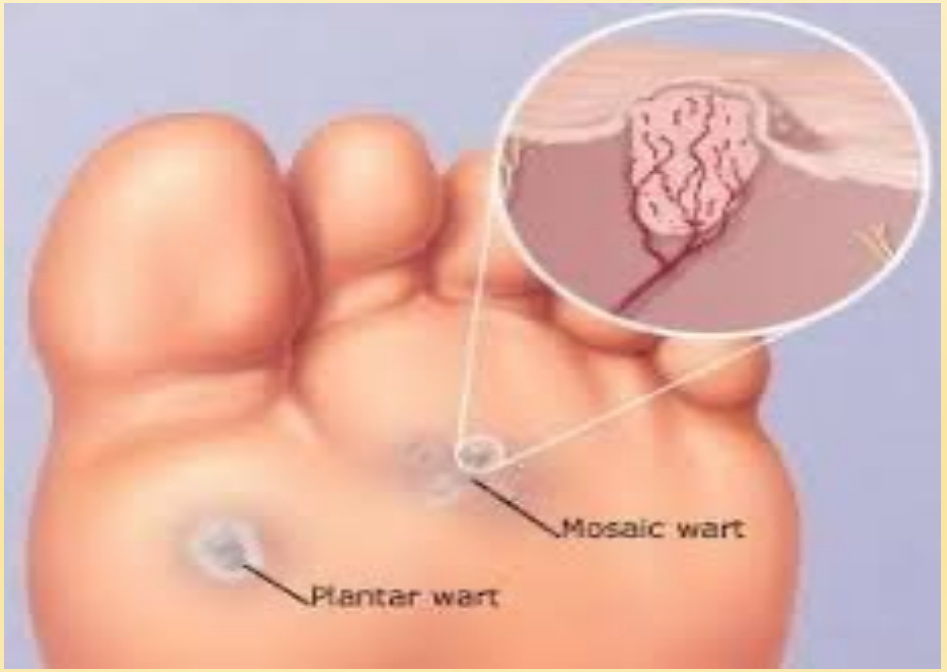


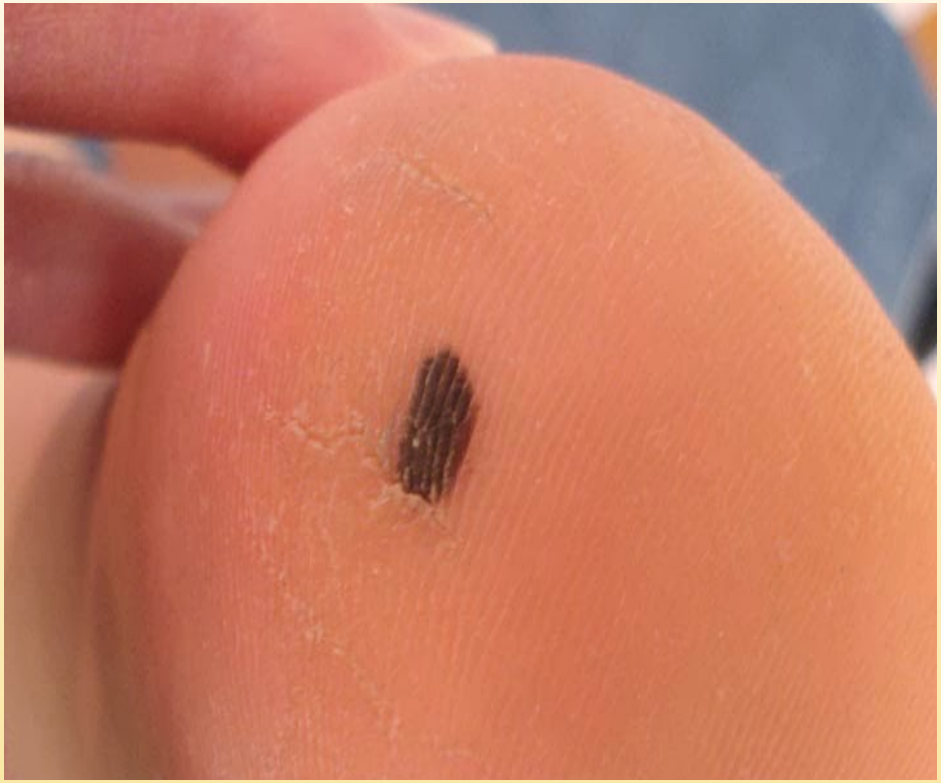
Corn

- Punctate papule with a deep hyperkeratotic core
- Usually over a bony prominence
- Tender
- Treatment: salicylic acid and paring
- Prevent with proper-fitting footwear; pads
- D/dx:
  - *callus - doesn't have hyperkeratotic core*
  - *wart – has capillary thrombi*

Wart

- Capillary thrombi evident
- Loss of skin markings



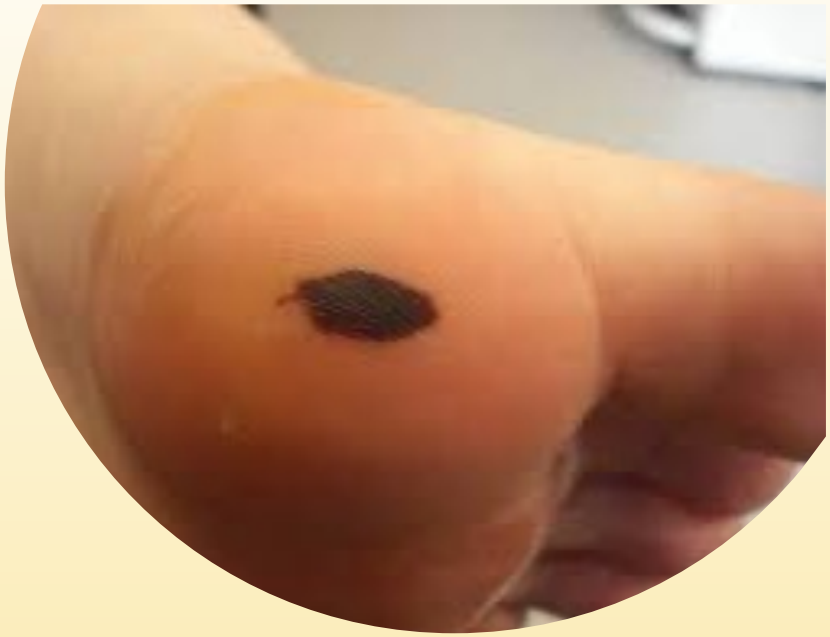


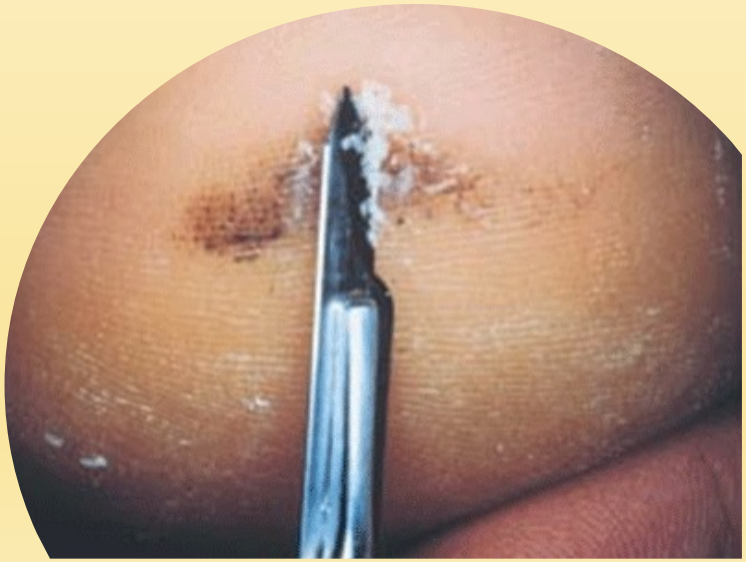
Talon Noir

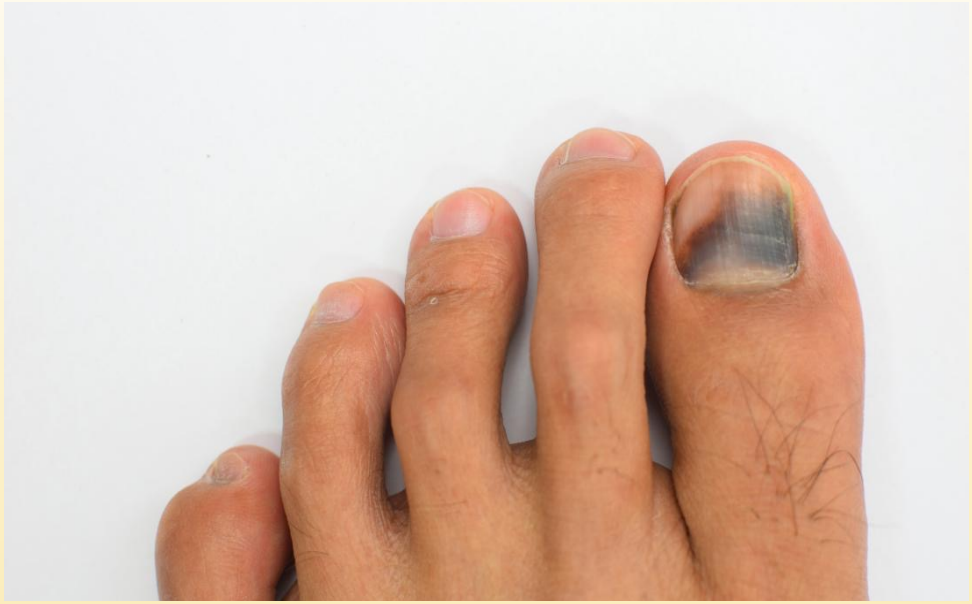
- Normally seen in adolescents and young adults
- Hyperpigmentation at upper edge of heel
- Secondary to intracorneal and subepidermal hemorrhage
- From shearing/ pinching stress at upper edge of heel fat pad

Talon noir

- No treatment necessary but paring can eradicate
- Prevent by slowly increasing new sporting activities
- Wear a felt heel pad if prone to lesions
- d/dx melanocytic neoplasms including melanoma
- Biopsy/ refer to Dermatology if unsure

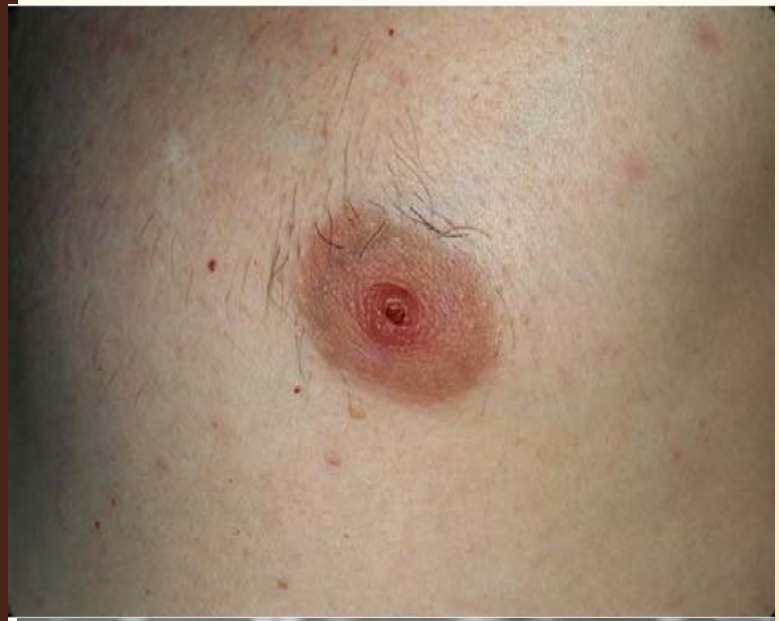






Subungual hematoma

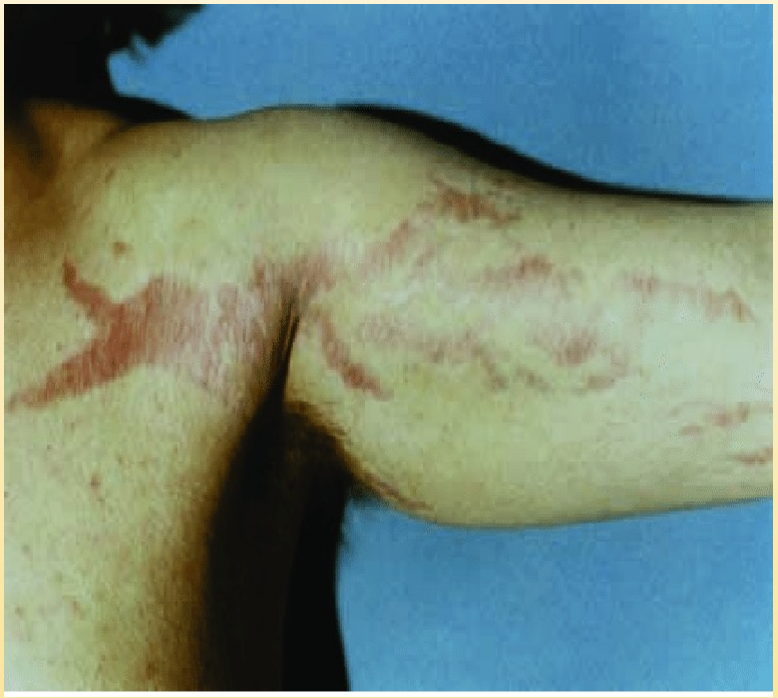
- Lesion exhibits red hue on exam; if unsure, refer
- Caused by repetitive contact of the shoe anteriorly or dorsiflexion of toe in restricted toebox
- Treatment: rest, foot soaking usually adequate; can drain blood under nail for immediate pain relief
- Prevention
  - *Good fitting footwear*
  - *Trimming toenails*
  - *Using a toe pad*



Jogger's nipples

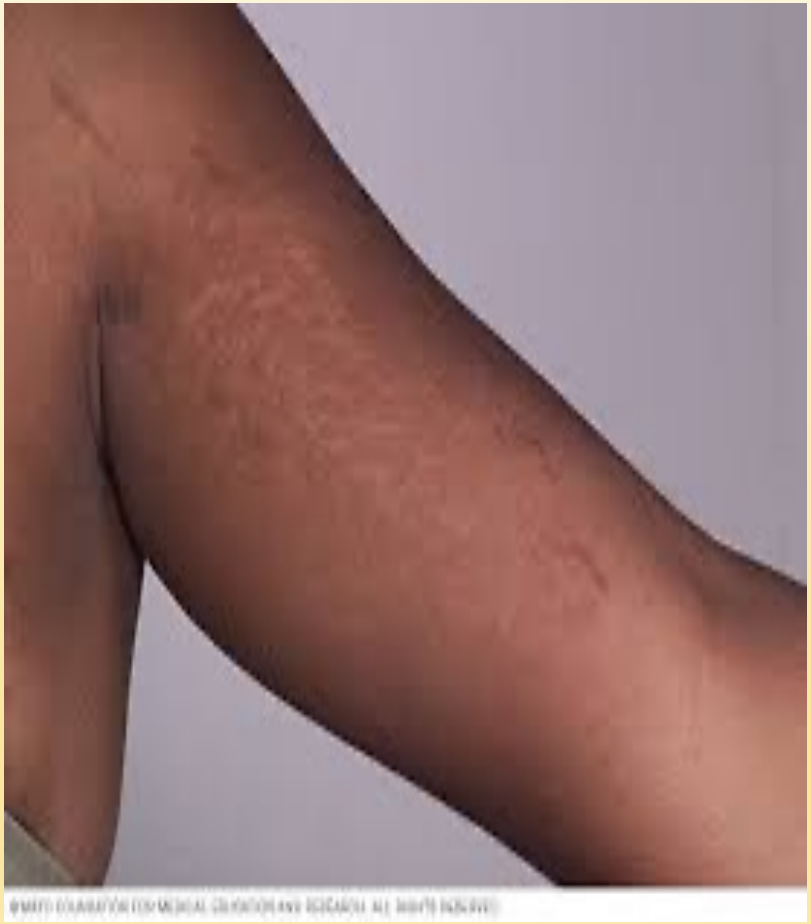
- Painful eroded dermatitis of the nipples
- Repetitive friction of shirt on nipples; often hard fabric such as polyester
- If superficially infected, apply topical antibiotic
- Otherwise, liberal petroleum jelly
- Sports bra for women; men can forgo shirt
- Protective bandage over nipples
- Petroleum jelly before run

Striae distensae



Striae distensae

- Linear atrophic plaques
- Caused by rupture of elastic fibers in reticular dermis
- Any location that has undergone underlying rapid growth
- Areas of repetitive stretching
- Underlying muscle hypertrophy
- Often anterior shoulders, lower back, thighs



Miscellaneous

Athletes nodule:

- Flesh colored nodules (form of callus) in areas of repetitive friction; often secondary to equipment; treat if symptoms; paring, IL steroids, surgery, laser

Golfers nails:

- Linear dark streaks (splinter hemorrhages) on golfer's nails; gripping club too tightly

Runners rump:

- hyperpigmentation on superior aspect of gluteal cleft due to underlying ecchymoses in long-distance runners; asymptomatic; prevent with softer clothing and lubricants

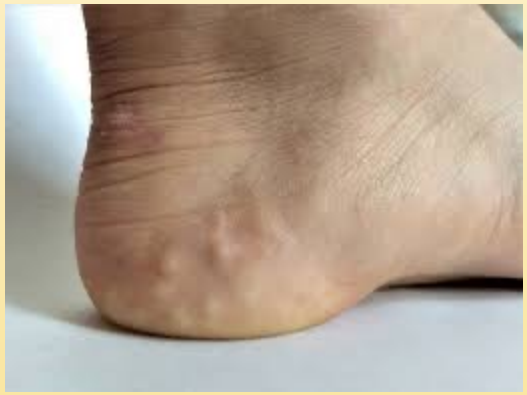
Rowers rump:

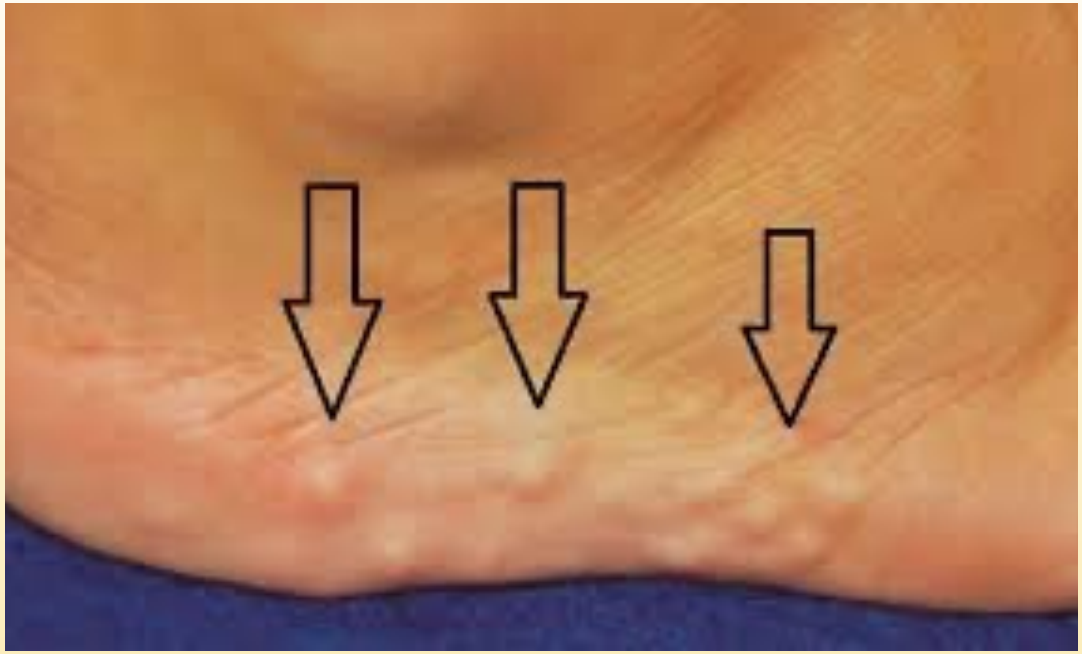
- Lichenified plaques in areas of contact with unpadded seat of rower; comparable to saddle sores in cyclists; sometimes itchy; steroids; pad seat

Swimmer's shoulder:

- beard repetitively rubbing against shoulder; steroids if itch; shave

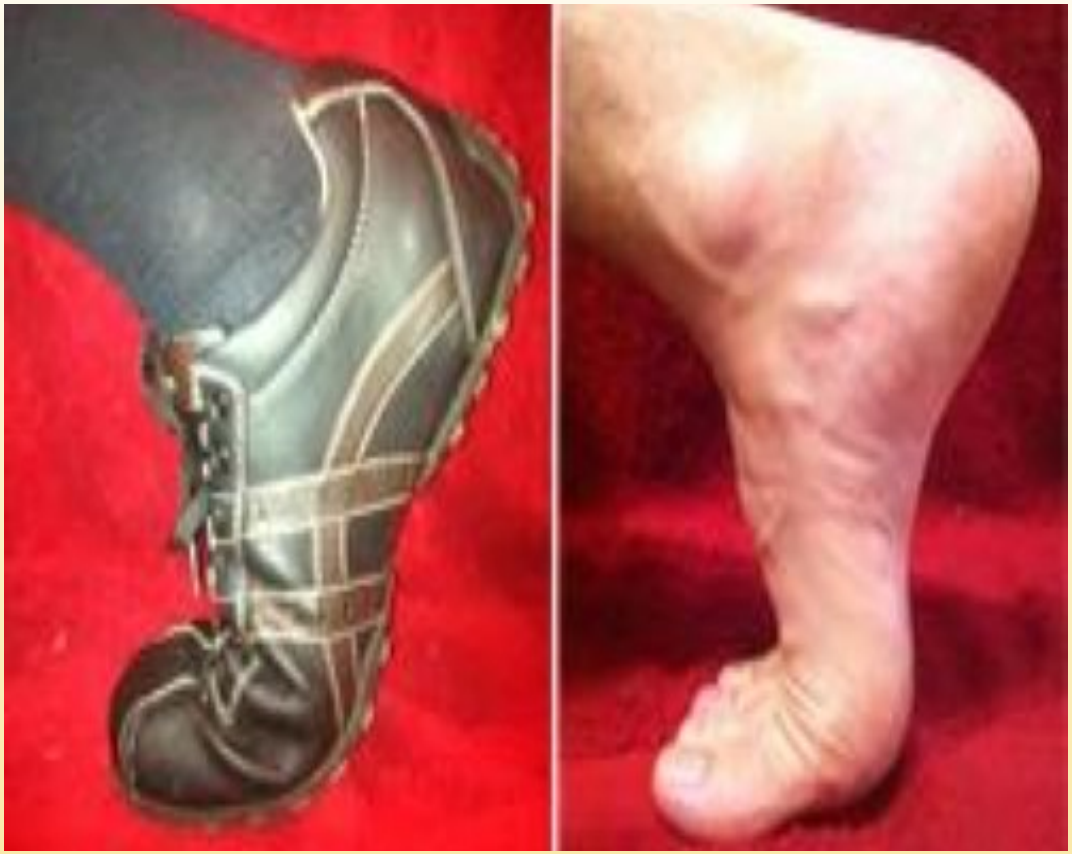
Piezogenic papules (Cutaneous Hernia)





Piezogenic (pressure-induced) papules

- Skin-colored papules and nodules; lateral feet
- Result from subdermal fat herniation
- From prolonged standing or exercise
- Most common in long-distance runners
- Overweight individuals with rapid start/ stop motions are at higher risk; weight loss helps
- No treatment is necessary; usually not painful



Turf Toe

- Forefoot is fixed on the ground, heel is raised, and a force pushes the big toe into hyperextension.
- Most often occurs among American football / soccer players on turf fields with rapid start-stop maneuvers
- A painful, red and swollen great toe because of tendonitis of the flexor and extensor tendons

Rest. Take a break from the causative activity (2-3 weeks); avoid walking or putting weight on your foot.

Ice. Cold packs for 20 minutes at a time, several times a day (not to skin directly)

Compression. To help prevent additional swelling, wear compression bandage.

Elevation. To reduce swelling, recline at rest, leg up higher than your heart.

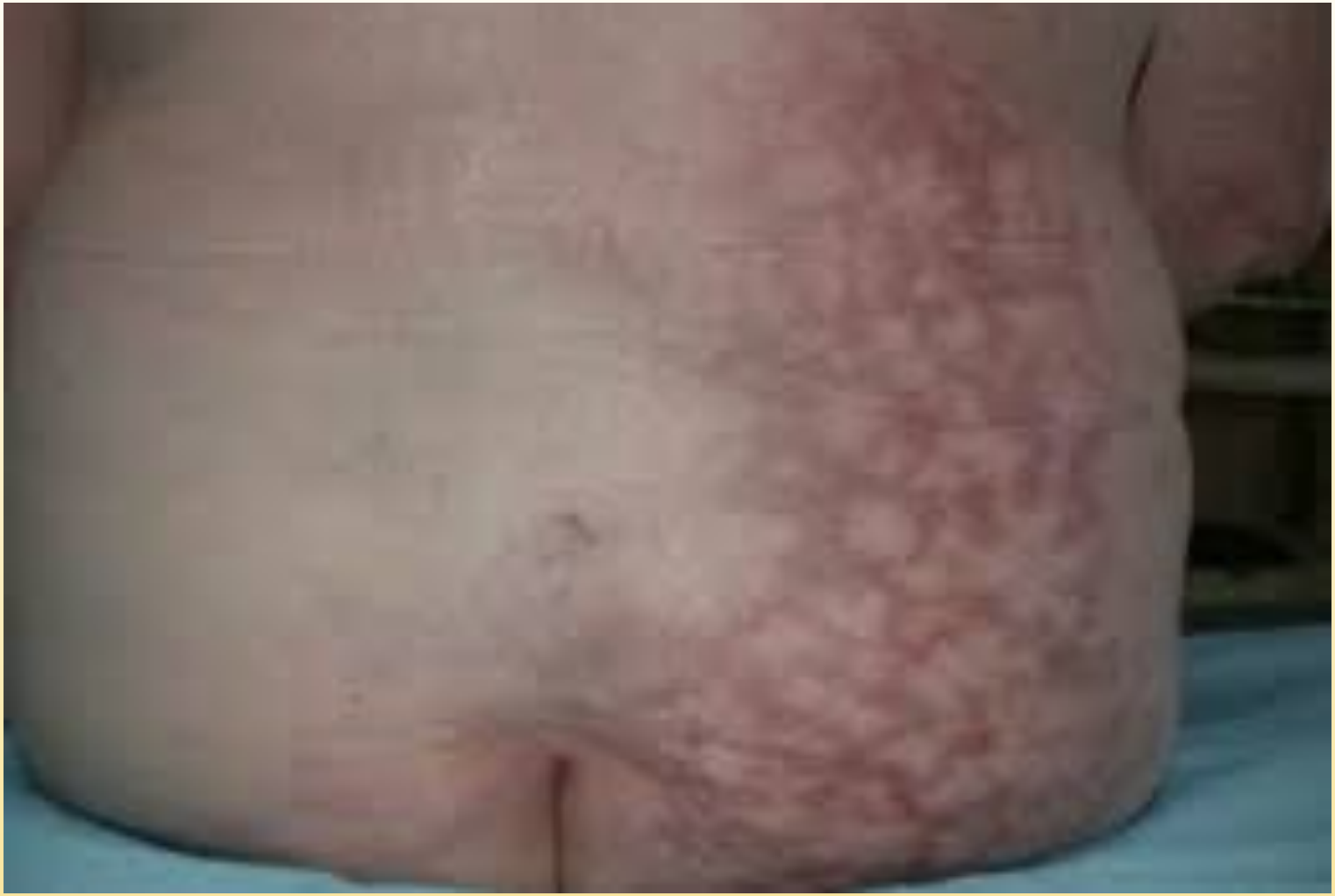
In addition, over-the-counter **anti-inflammatory medications**

Consider X-rays initially – r/o fracture

MRI if symptoms persist with negative x-ray or extreme pain

d/dx – acute gouty arthritis or acute paronychia

Turf Toe



Erythema ab igne

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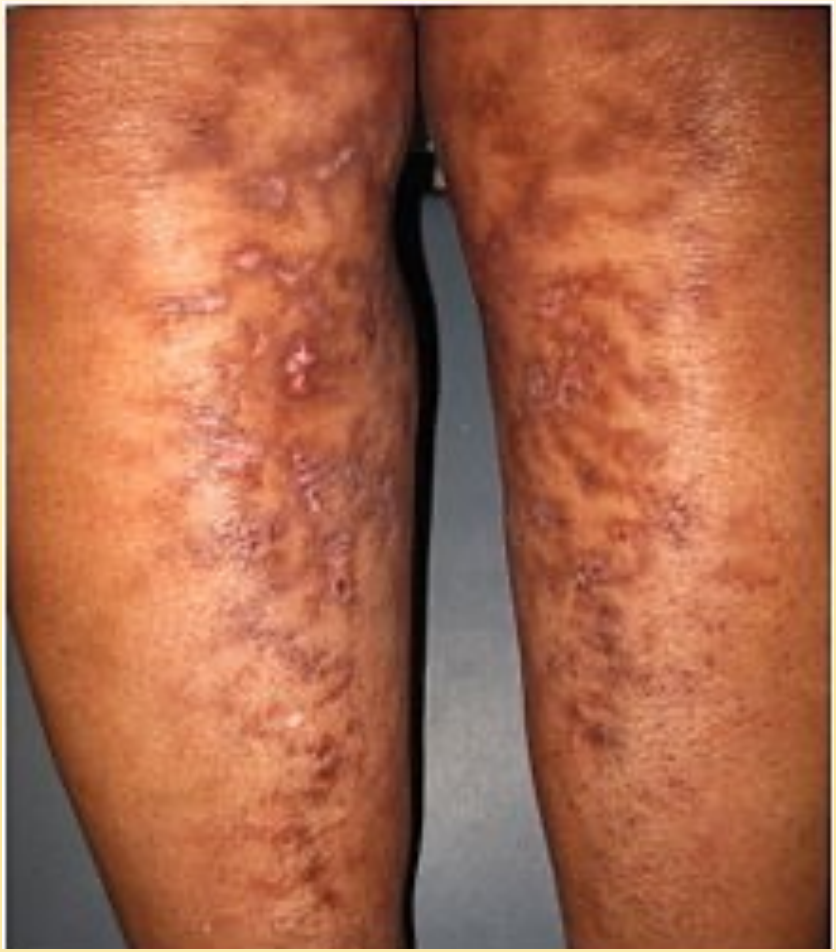


- Erythematous or hyperpigmented reticulate patch; often on back but anywhere
- Skin reaction from chronic, repeated exposure to a heat source like a heating pad
- Treatment: resolves spontaneously with avoidance of heat source
- Caveat: small chance of developing skin cancer
- Thus important to diagnose, avoid heat and monitor for resolution

Inflammatory Conditions in Sports

Contact dermatitis

- **Irritant:** (more common; 80%)
  - direct damage of keratinocytes by the chemical itself; minutes to hours.
- **Allergic** (~20%) – immune response:
  - delayed type IV hypersensitivity reaction to allergens to which previously sensitized; hours to days

Solar urticaria

Cholinergic urticaria

Cold urticaria

Common contact dermatitis (CD) rashes in sports

All sports:

- topical benzocaine and lanolin in many creams –*allergic* CD

Swimming:

- goggles w/ rubber, neoprene, formaldehyde resin, thioureas
- Rubber swim caps w/ mercaptobenzothiazole
- Disinfectant chemicals – chlorine, bromine

Running

- benzocaine and lanolin; ask if deodorizer in shoes; insoles; rubber & sweat

Soccer

- Shin guards – urea and formaldehyde
- Phytodermatitis – plants on field
- Lime in paint for field markings; upper inner thighs; irritant

Common contact dermatitis (CD) rashes in sports

Tennis / racket sports

- Rackets contain isophorone diamine -→ ACD; Neoprene splints for tennis elbow; rubber additives – rubber balls – hand ball; squash

Basketball:

- Rubber ball

Hockey

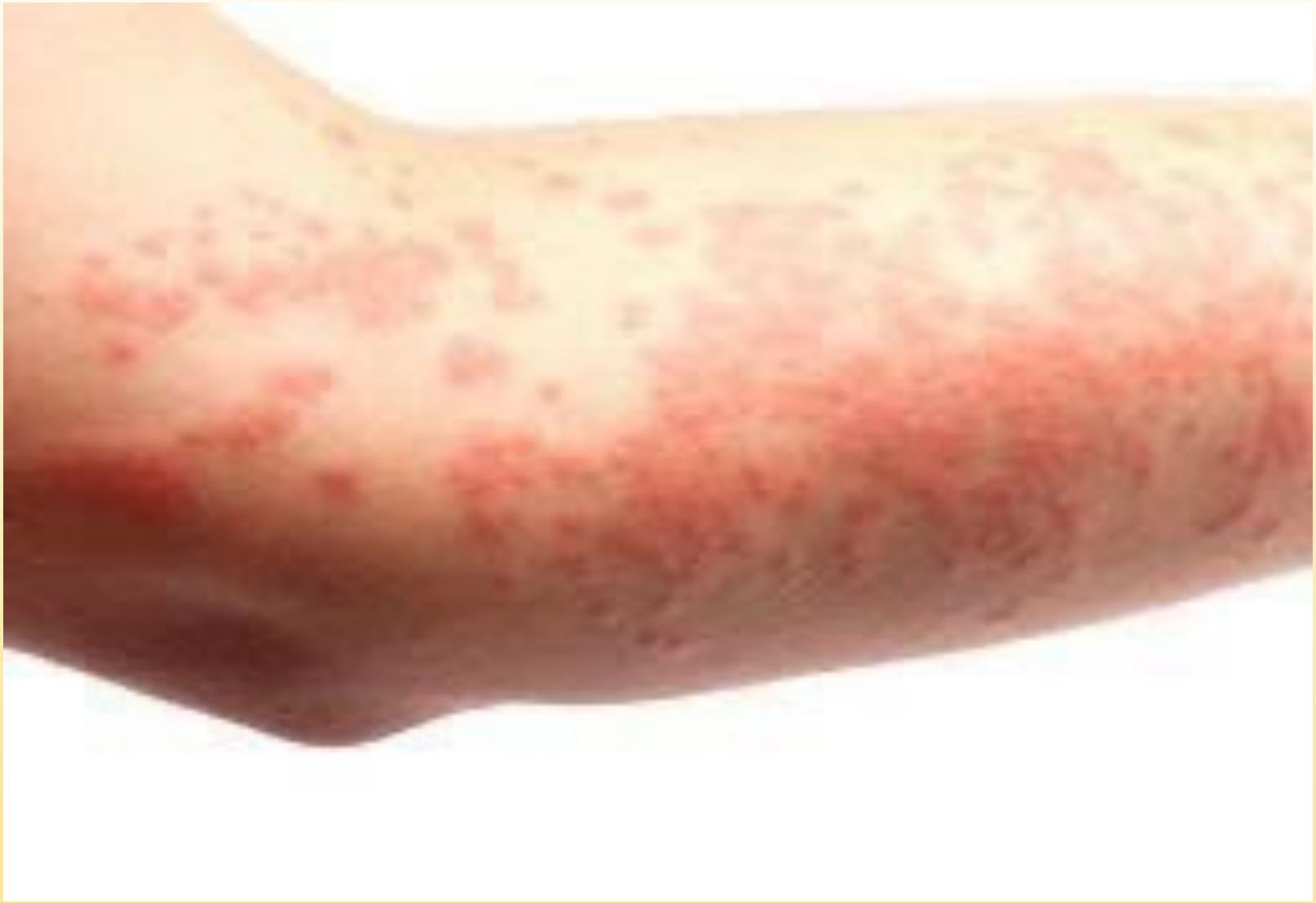
- Fiberglass in hockey sticks; epoxy resins in facemasks; formaldehyde

Weightlifting

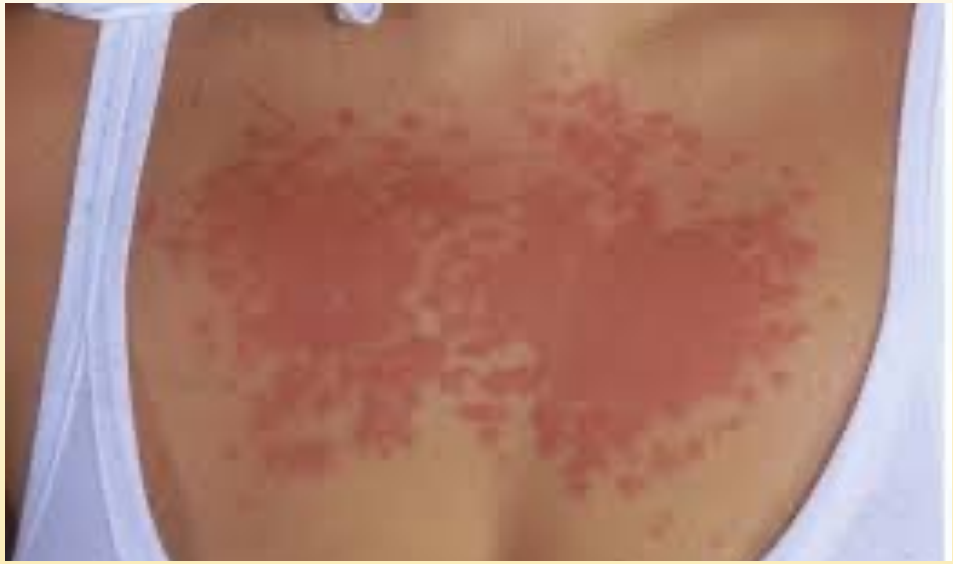
- Nickel in equipment; chalk (for grip);
- colophony (pine resin or resin) – also in gymnasts; baseball pitchers

Evaluation and Management of Contact Dermatitis

- Presentation:
  - *Often red, scaly, thickened (lichenified), itchy, burning (if irritant), plaques*
  - *May be blistered*
  - *Localized or generalized*
- Diagnosis
  - *History, physical, patch testing*
- Prevention
  - *Avoidance of substance; substitute safe products (see www.contactderm.org and www.dermatitisacademy.com)*
- Treatment – steroids and calcineurin inhibitors

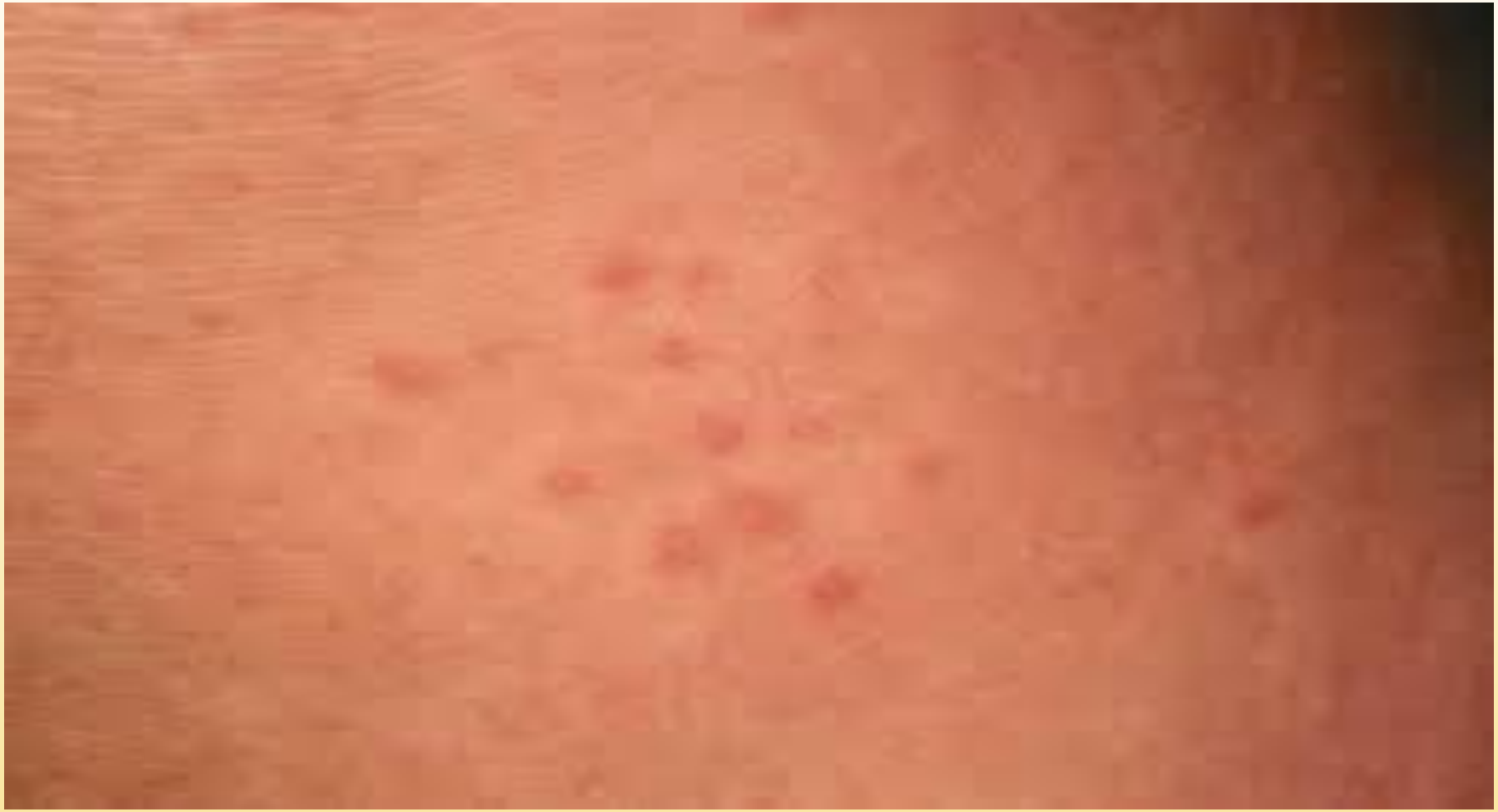


Solar urticaria

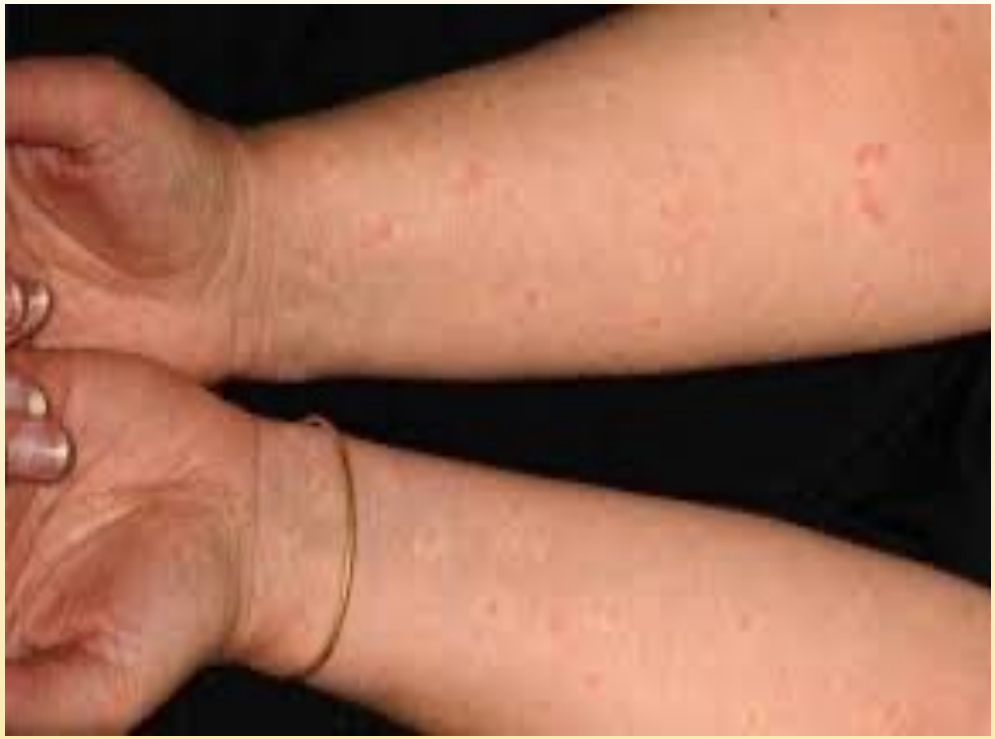


Solar urticaria

- Presentation and dx:
  - *Itchy, burning wheals within minutes of UV light exposure (sun or artificial); late spring/ early summer*
- Treatment:
  - *Antihistamines, sun-protective clothing, sunscreen*
  - *Hydroxychloroquine , PUVA if symptoms are refractory*
- Prevention:
  - *Skin usually becomes less sensitive with repeated sun exposure*
  - *If not, cover sun-exposed areas*
  - *Clothing better than just sunscreen*

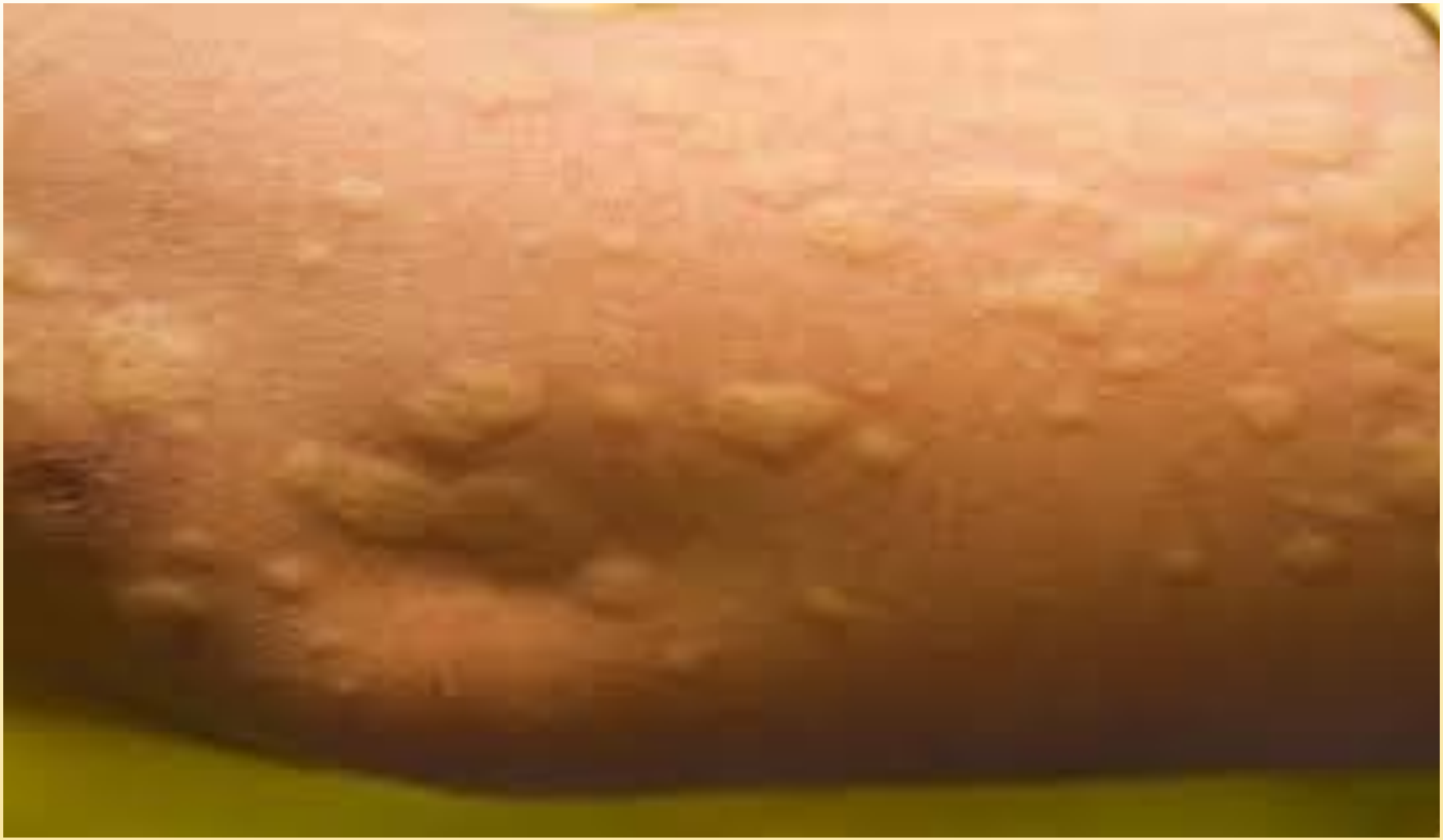


Cholinergic urticaria

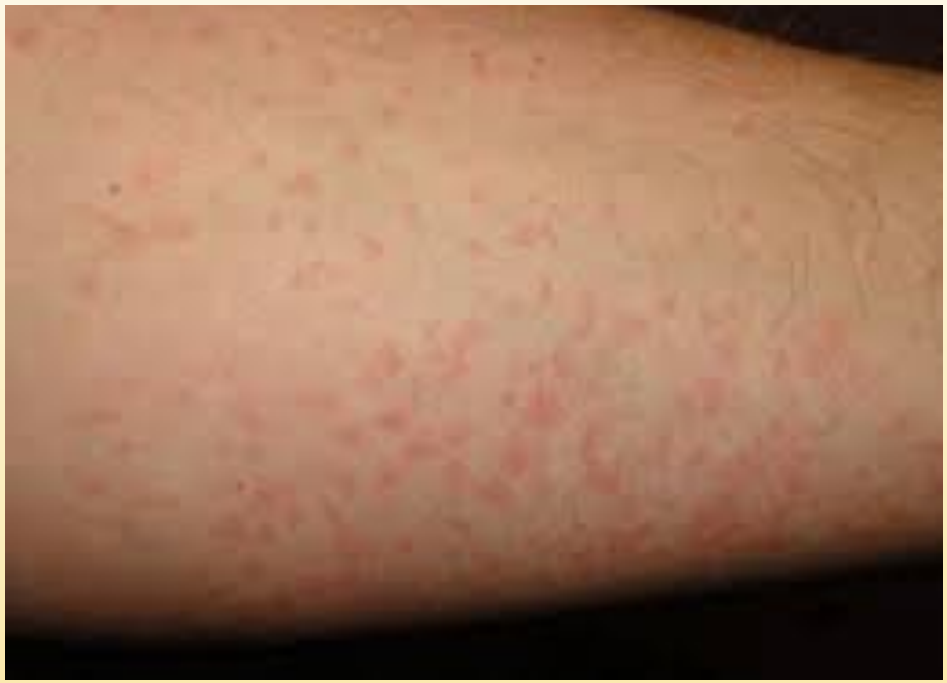


Cholinergic urticaria

- Presentation:
  - *Small wheals shortly after exercise; usually after sweating*
- Diagnosis:
  - *Urticaria develops with exercise*
- Treatment:
  - *Does NOT respond well to oral antihistamines (AH)*
  - *Tends to resolve with age*
- Prevention:
  - *Avoid exercise if AH do not control*



Cold urticaria



Cold urticaria

- Urticaria in areas of cold exposure or cold water contact
- Dx: application of ice to skin - → wheals after 5 minutes
- r/o secondary causes of cold urticaria – cryoglobulinemia; connective tissue disorders
- Antihistamines help; give epi-pen
- Patients should not swim alone - anaphylaxis & drowning risk

Skin infections in sports

- Among collegiate **athletes**, the prevalence of **skin** infections have been reported as follows:
- herpes viruses, 47%;
- impetigo, 37%;
- tinea 7%;
- cellulitis, 6%;
- methicillin-resistant Staphylococcus aureus (MRSA), 3%.

- close contact with other athletes
- poor cleansing of equipment
- environment
- trauma

- Of note: This topic discussed in other lectures

In conclusion…

We have discussed

1. potential effects of sports activities on skin
2. common mechanically-induced skin injuries from sports
3. common inflammatory conditions seen with sports
4. Tips to diagnose and treatment of mechanical and inflammatory skin conditions from sports
5. The frequency of and reasons for the most common infections in sports

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