ECHO IDAHO

K12 School Nurses

Rashes and Skin Conditions in School Settings

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College of Education, Health and Human Sciences

Project ECHO®

Learning Objectives

- Be able to describe rashes– terminology and characteristics
- Recognize when a rash is an emergency - effective triage
- Recognize when a rash requires a visit to a medical provider
- Recognize when a rash warrants a call home
- Recognize common skin conditions
- Wound care do’s and don'ts

Terminology and Characteristics

- Morphology
  - Macule - flat
  - Papule – solid bump raised with distinct borders
  - Vesicle – clear fluid-filled bump, thin-walled
  - Pustule – cloudy fluid-filled bump, thick-walled
  - Nodule – raised, greater than 1 cm (fibroma, wart)
  - Maculopapular – combination of flat and raised components
  - Follicular – “goosebumps”’
- Shape: Ovoid versus circular versus other (dermatographia)
- Well-defined/well-circumscribed (you can trace the border easily with a pen) versus diffuse
- Blanching (vasodilation) versus non-blanching (blood in the skin)
- Color: light pink to deep red (erythematous) to violaceous (purple)
- Affected area and pattern of spread
- Presence of pruritis
- Presence of pain

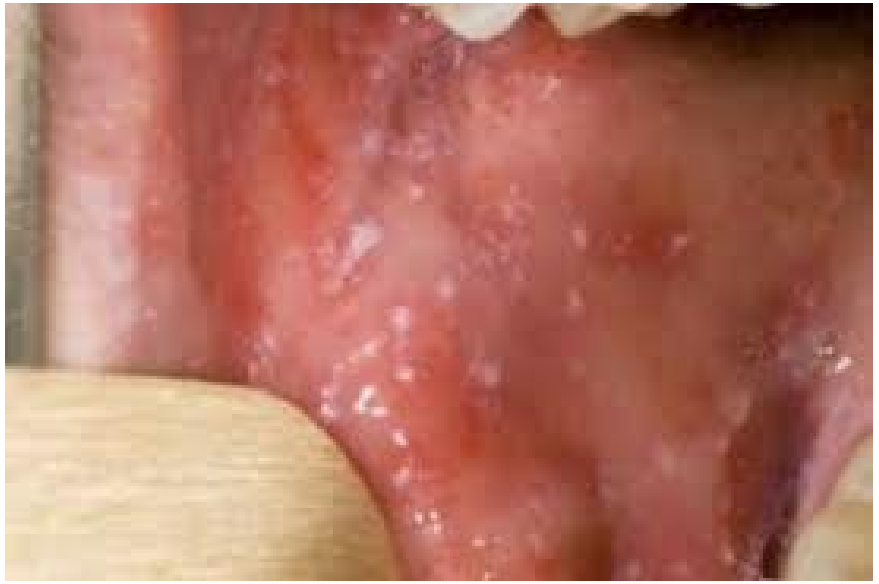
Rashes requiring urgent evaluation

- Start with ABC's before evaluating rash, especially if ill-appearing!
- Rash of any kind with vital sign instability – meningococcemia, toxic shock syndrome, anaphylaxis
- Rash with significant pain out of proportion to findings – indication of deep tissue infection: GAS cellulitis
- Rash with mucous membrane changes: red eyes, lips or tongue

  Toxic epidermal necrolysis
- Rash suspicious of nonaccidental trauma – bruises not over bony surfaces (cheeks, abdomen, buttocks), burns consistent with inflicted items

Patient case

- An elementary student presents to you looking ill with a high fever. They have cough, runny nose and conjunctivitis
- White spots in the mouth are present.
- You note a maculopapular rash that the child said was only on their face but you notice a macular 1-2 mm blanching rash over the trunk and some on the upper arms.



Measles

- 1,281 measles cases in the US in 2026
  - 77% in pediatric population
  - 89% of cases were unvaccinated/unknown
  - 5% of cases required hospitalization
- Total US cases 2025: 2,283
- We will lose our elimination status declared in 2000
- Talking points with families
  - Worse in the very young
  - There is no cure
  - It can cause pneumonia and meningitis
  - Measles vaccine is highly effective and safe

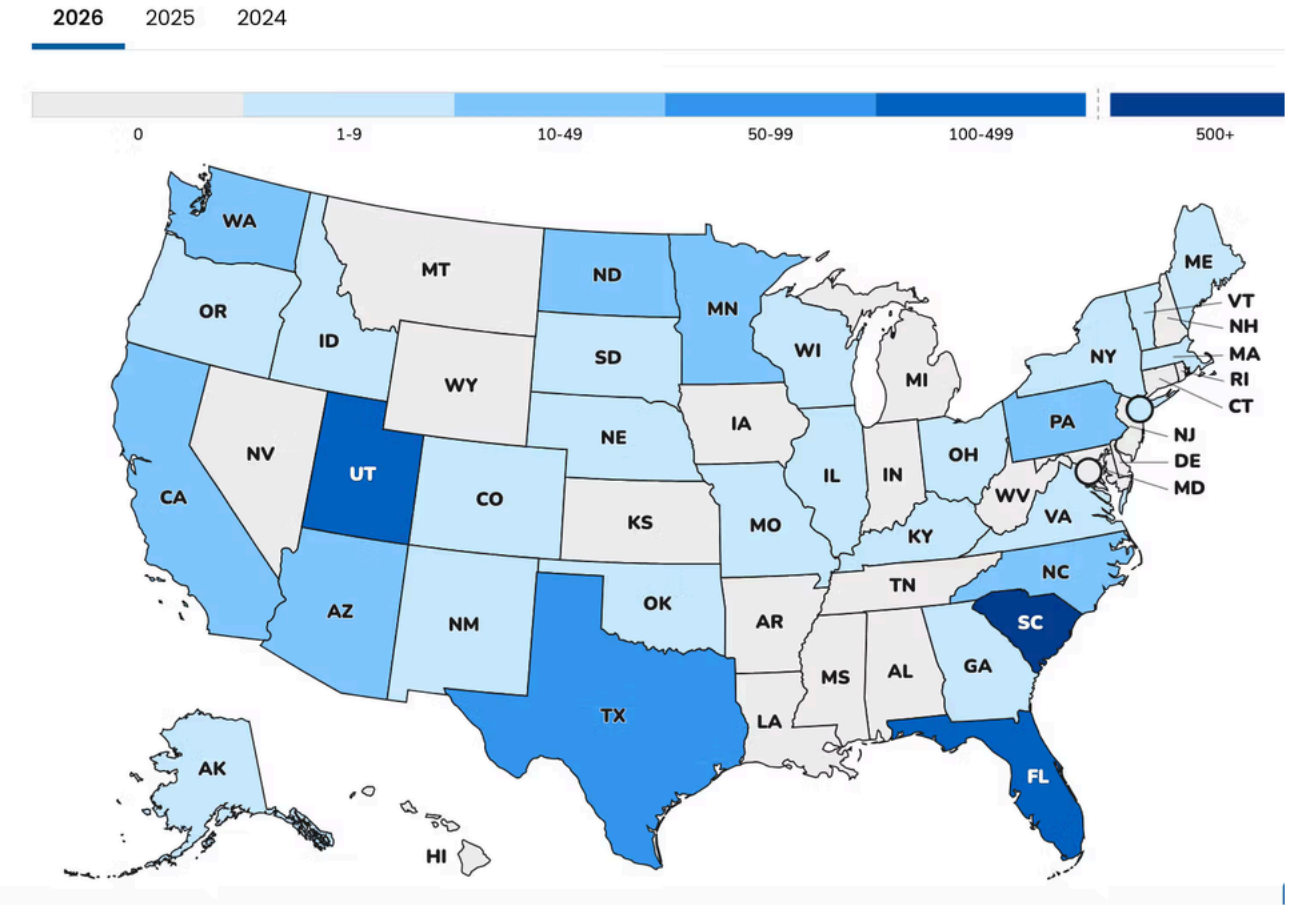
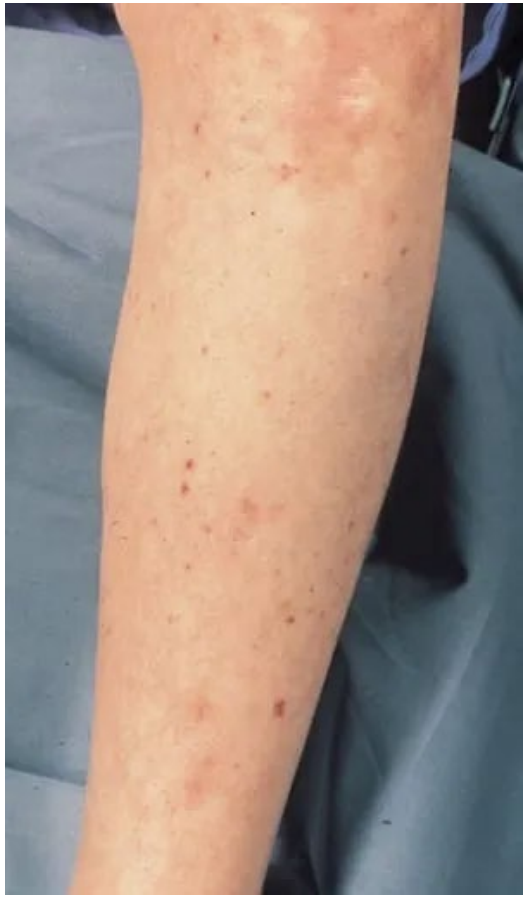


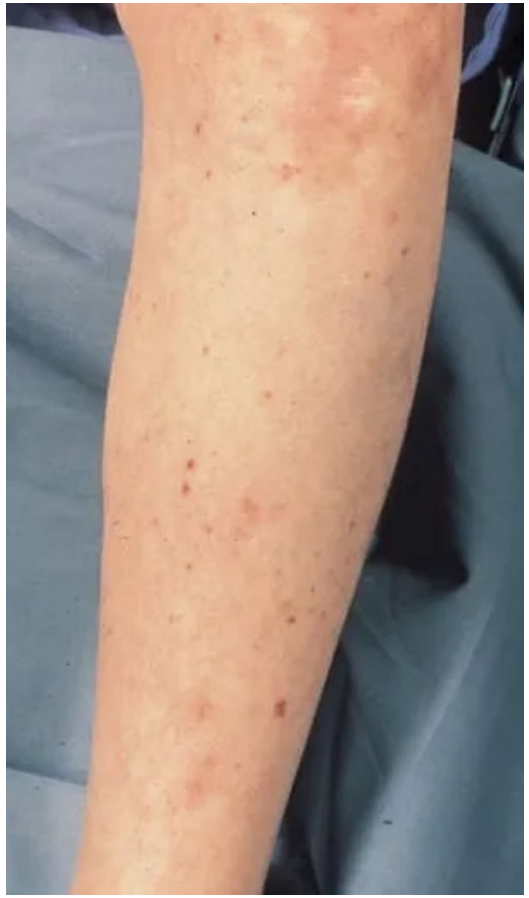
Image Credit: CDC

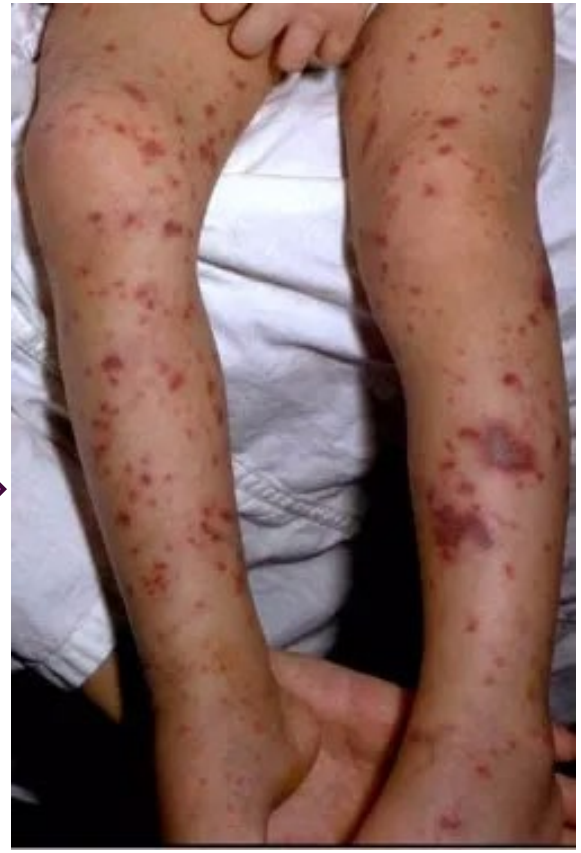
Patient Case

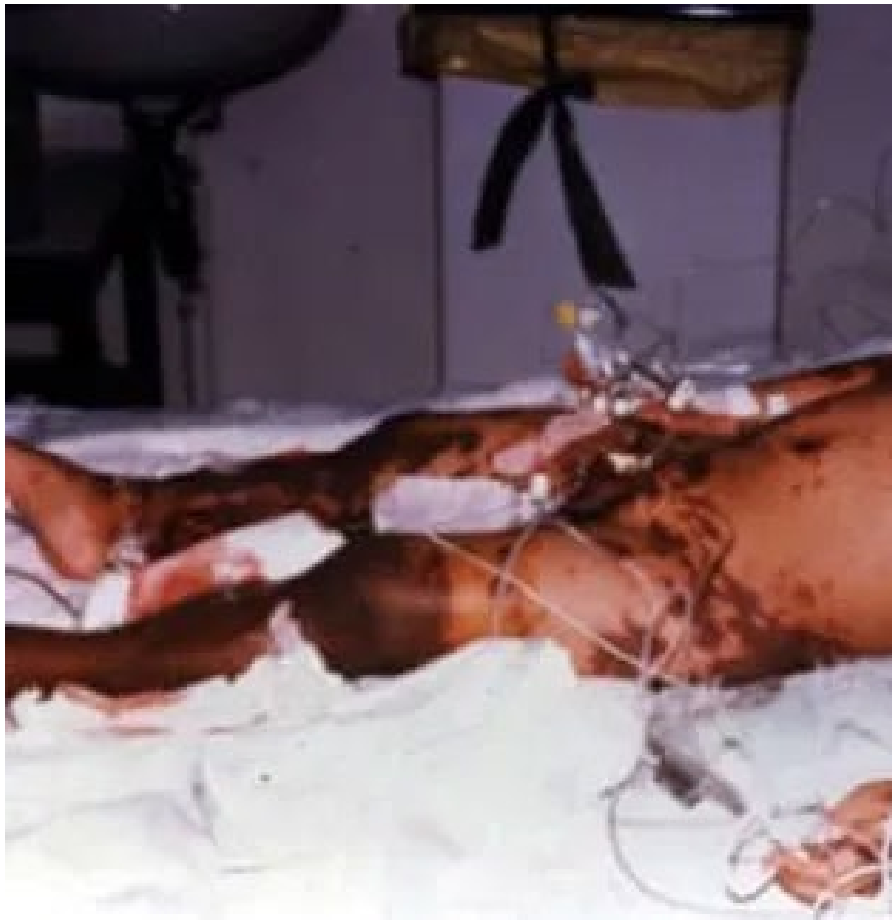


- A fourth-grade student presents to your office after passing out in the hallway. When you call his mother, she says that yesterday he developed a low-grade fever, headache and rash. The rash started around his underarms and wrists, but now is on his face. You take his temperature and it is 103.
- Rash: red and purple macules of different sizes, but they do not blanch when you press on them.

Meningococcemia







Patient Case

- Junior high student comes to your office because of sudden onset of coughing fits. Seems to be slightly out of it, not talking, not really answering your questions, says she feels dizzy. Mild facial swelling but hard to tell since you don't know her well. She tells you she feels like she's going to throw up when she coughs
- Splotchy pink raised rash on one cheek. Mainly appears pale

Anaphylaxis

Anaphylaxis is considered highly likely when any **one** of the following two criteria are met:

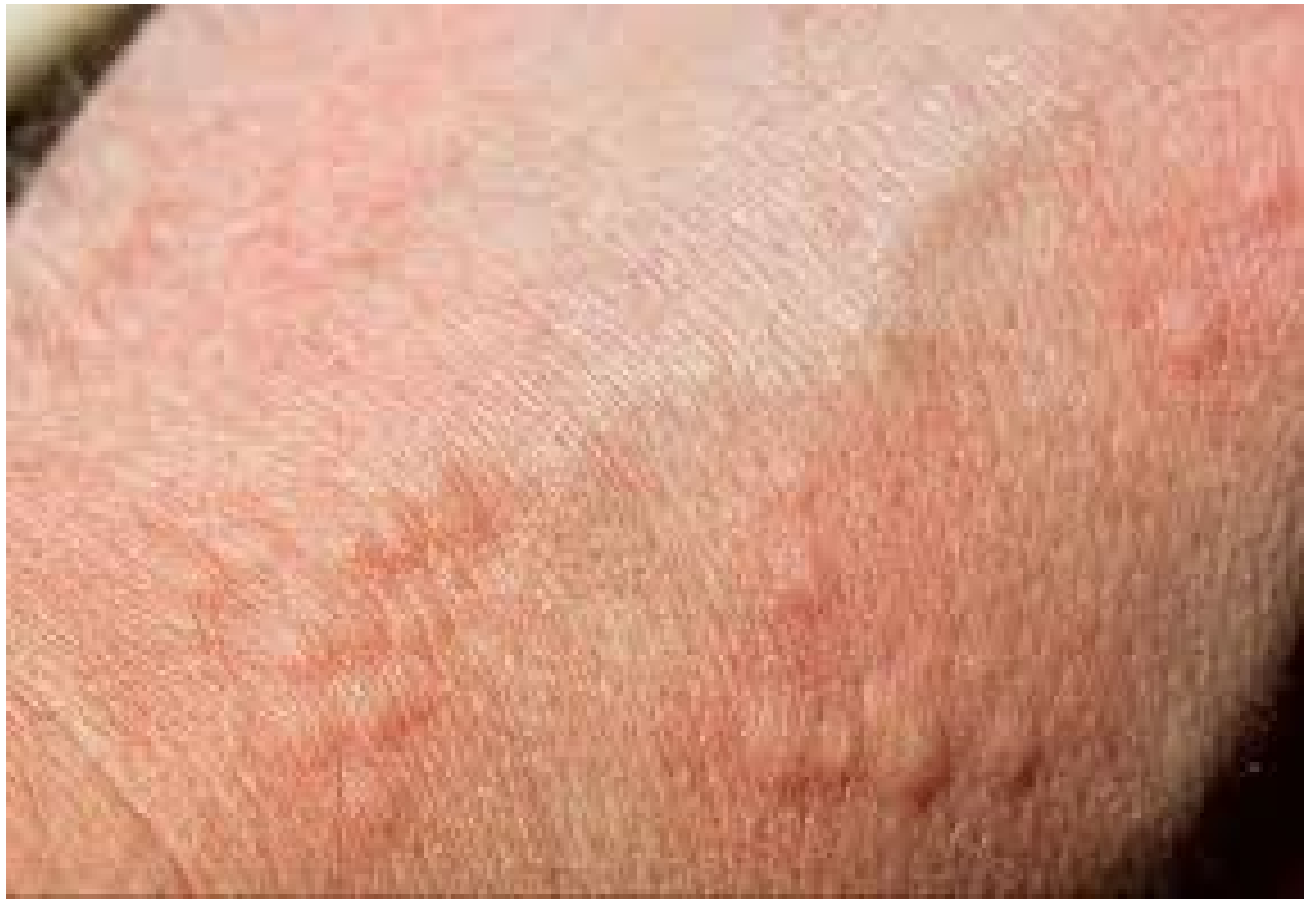
- **Criterion 1 (Multi-System):** Acute onset (minutes to hours) with skin/mucosal symptoms **AND** respiratory compromise, reduced blood pressure/end-organ dysfunction, or severe gastrointestinal symptoms.

- **Criterion 2 (Known Trigger):** Acute onset of hypotension, bronchospasm, or laryngeal involvement following exposure to a known allergen for that patient, even without skin symptoms

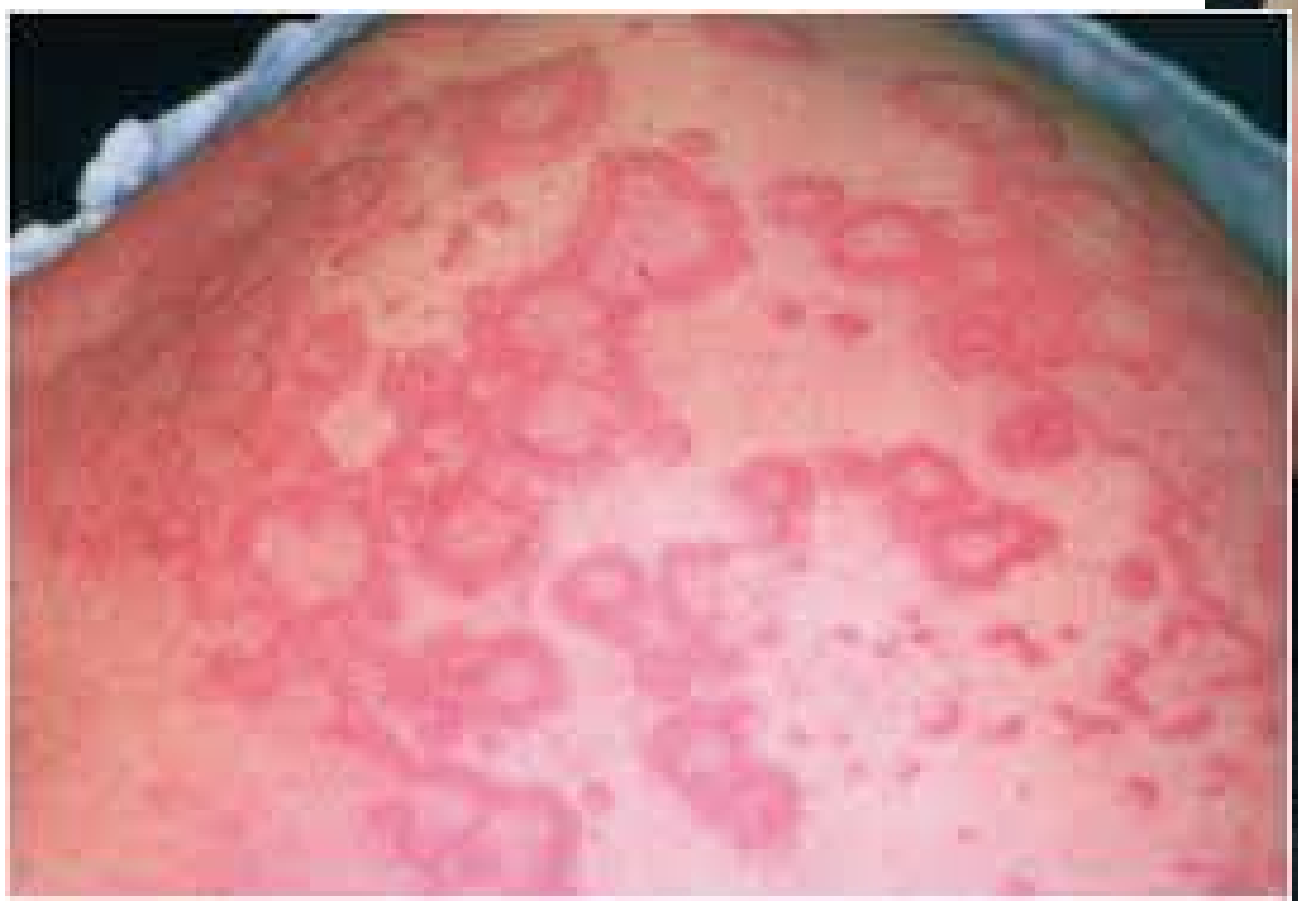
In our case, the clue is she was “slightly out of it” and pale. What should you do?

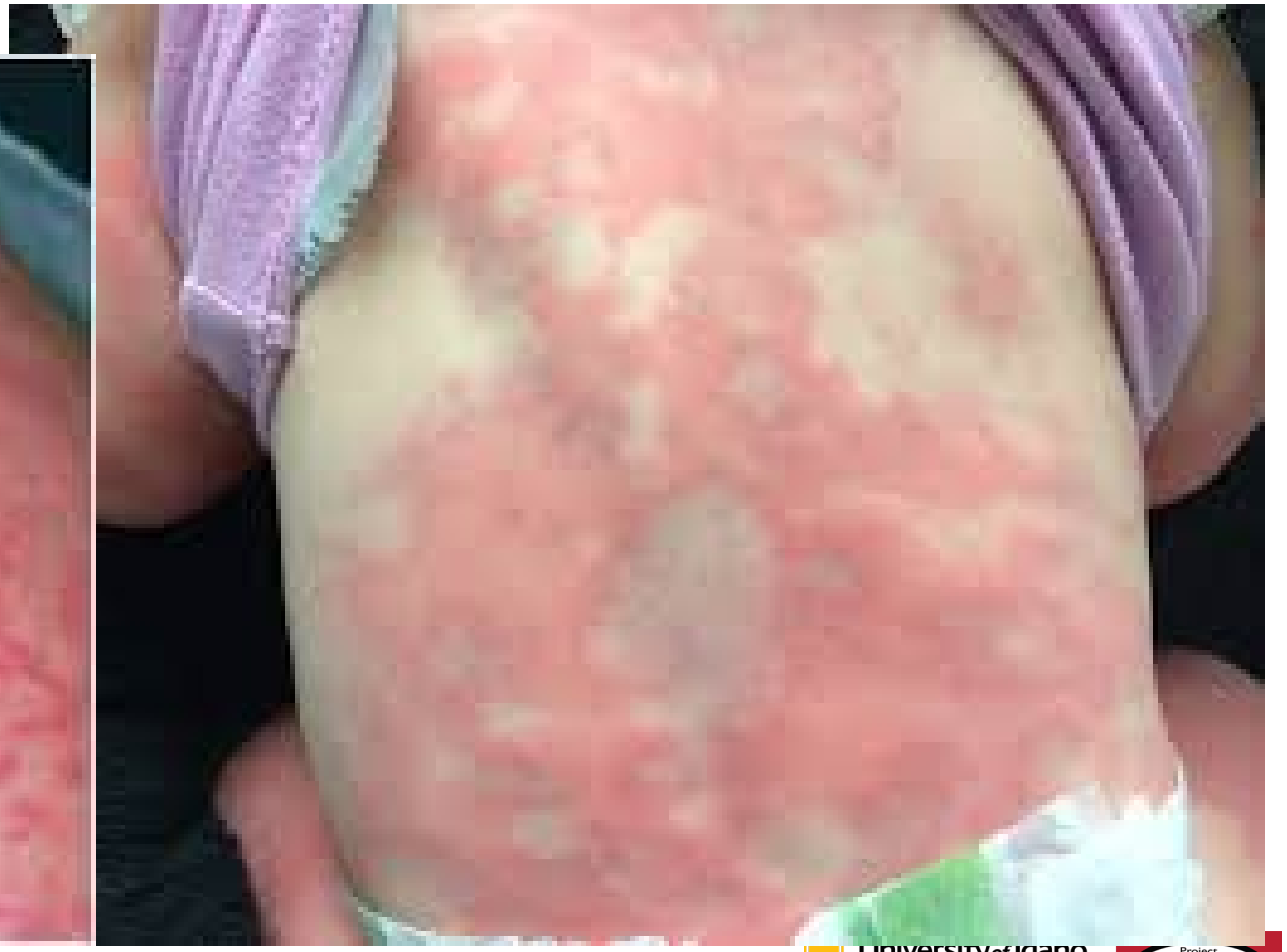
Uritcaria – When is it worrisome?

- Answer – hardly ever! Only when it is accompanied by facial/neck swelling or difficulty breathing (anaphylaxis, angioedema)
- One of the very few “evanescent” rashes



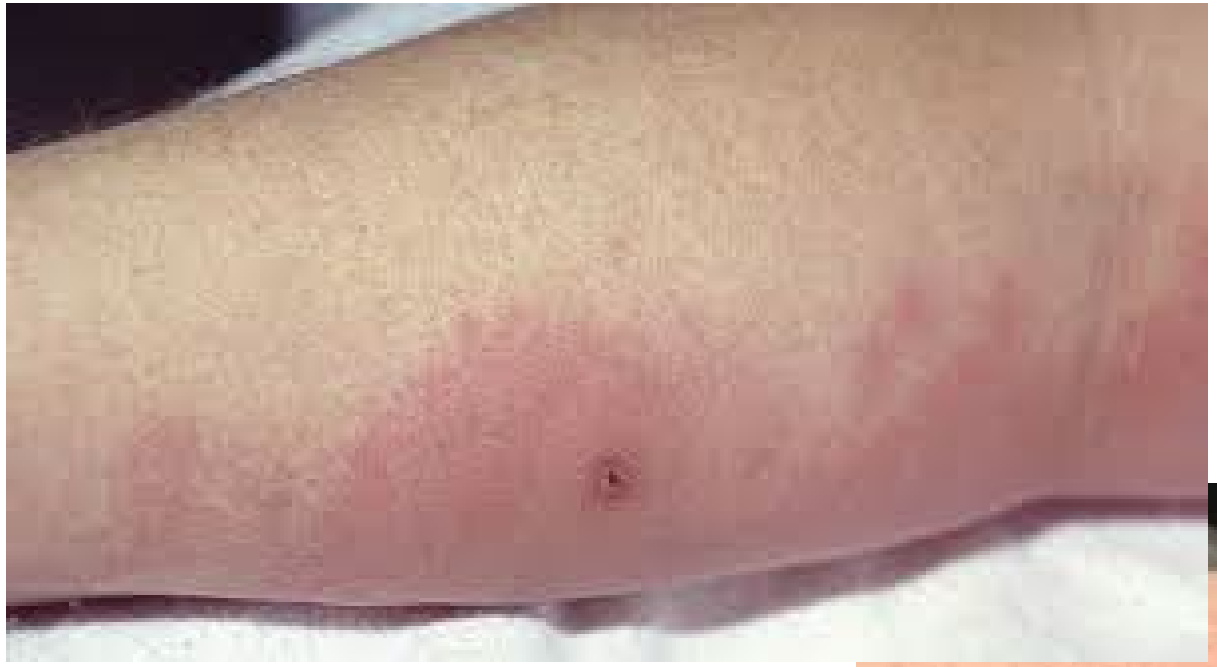
Erythema multiforme

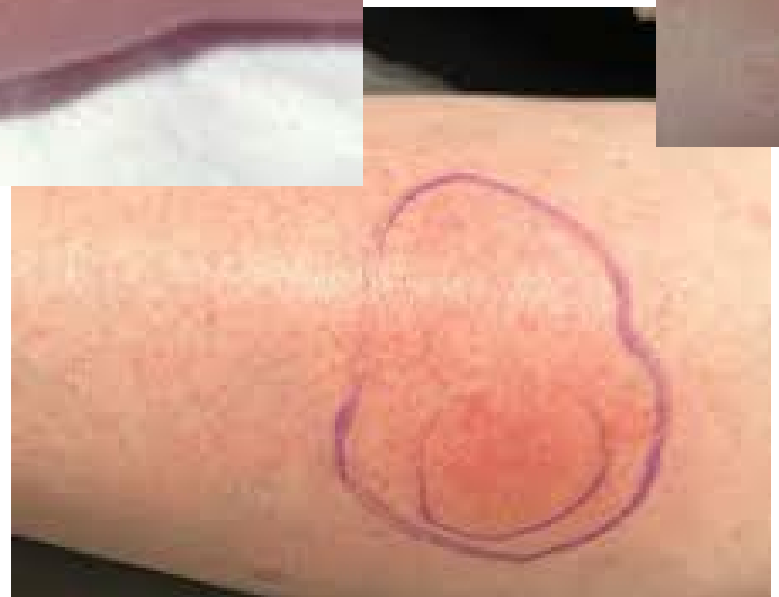




Cellulitis

tumor/rubror/calor/dolor





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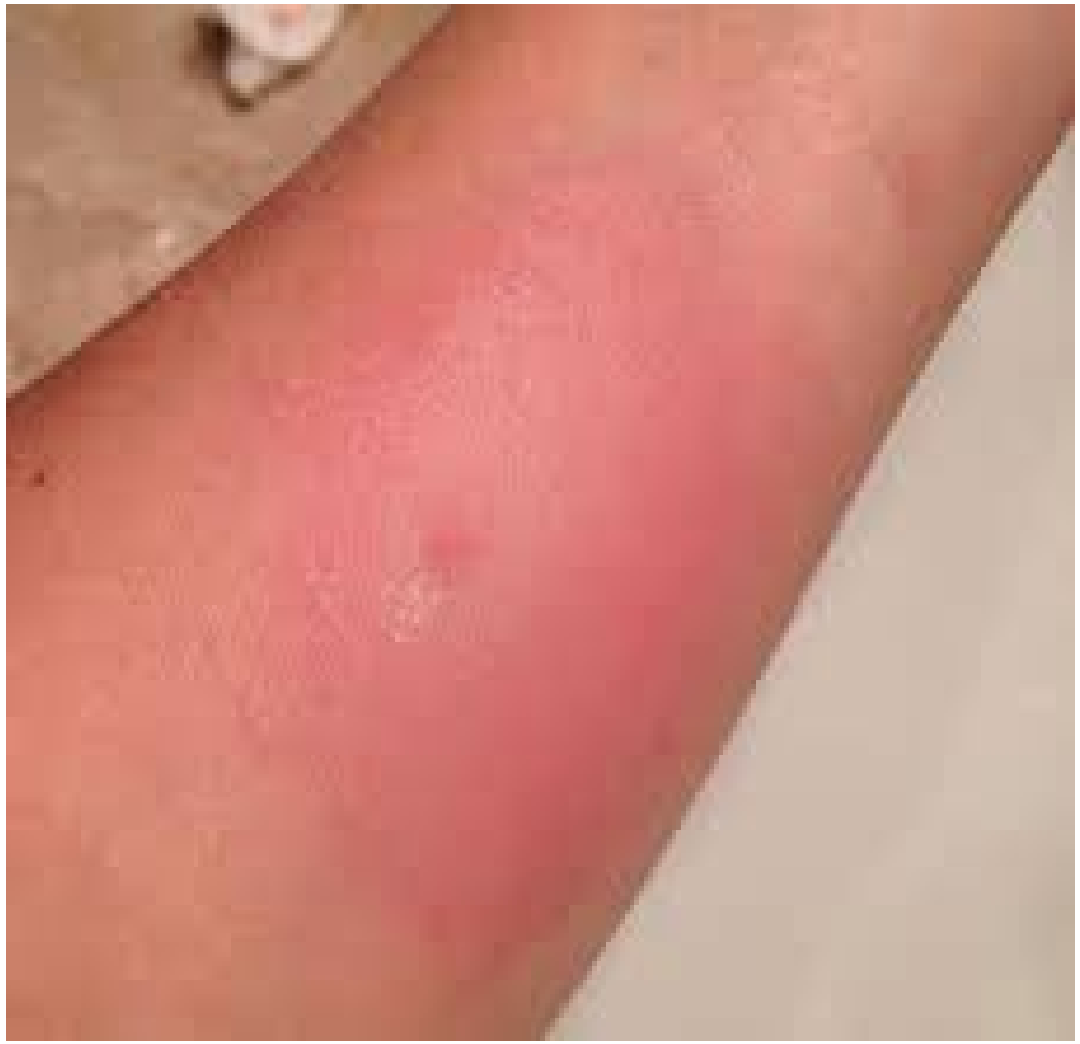
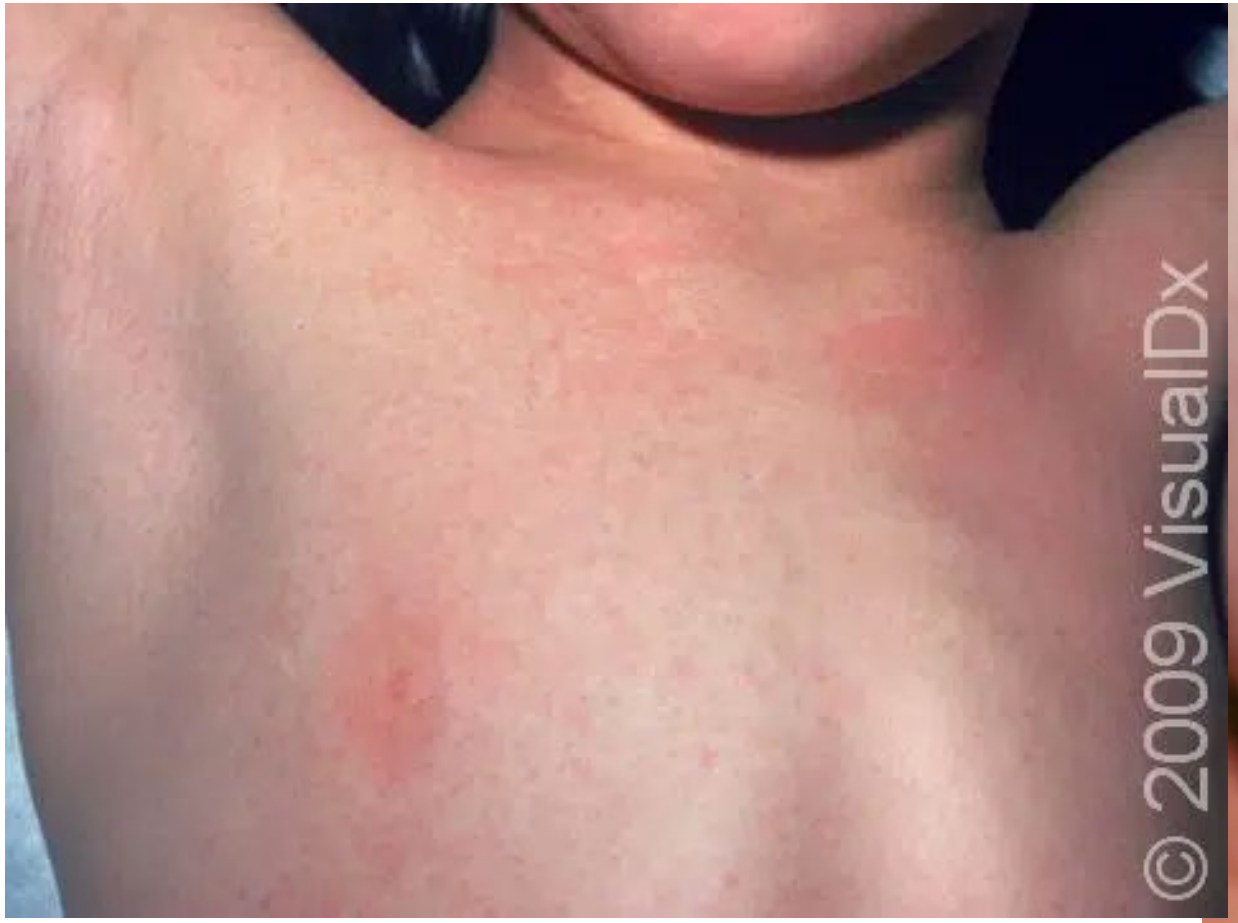
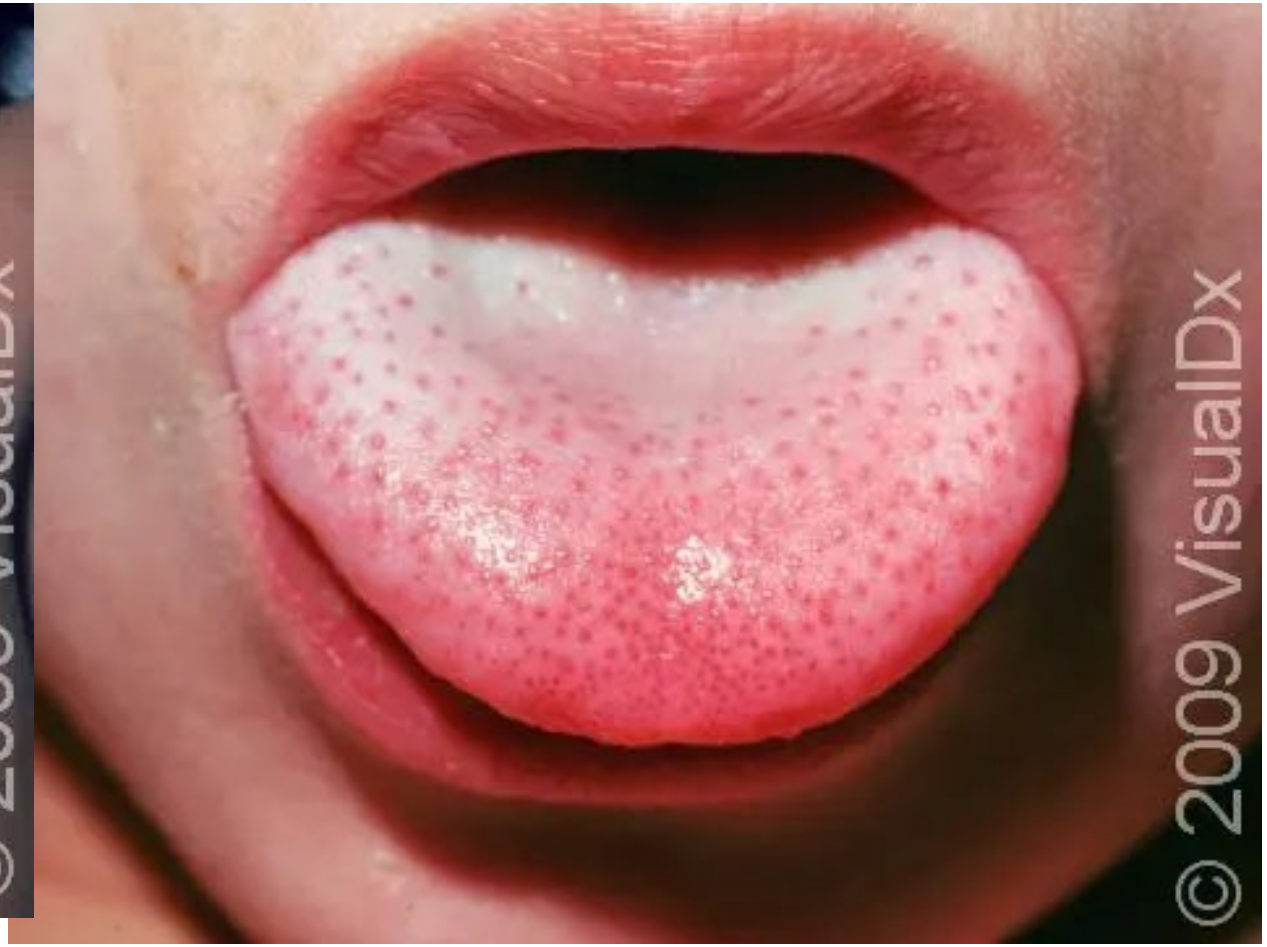
Hymenoptera sting – ***not*** cellulitis

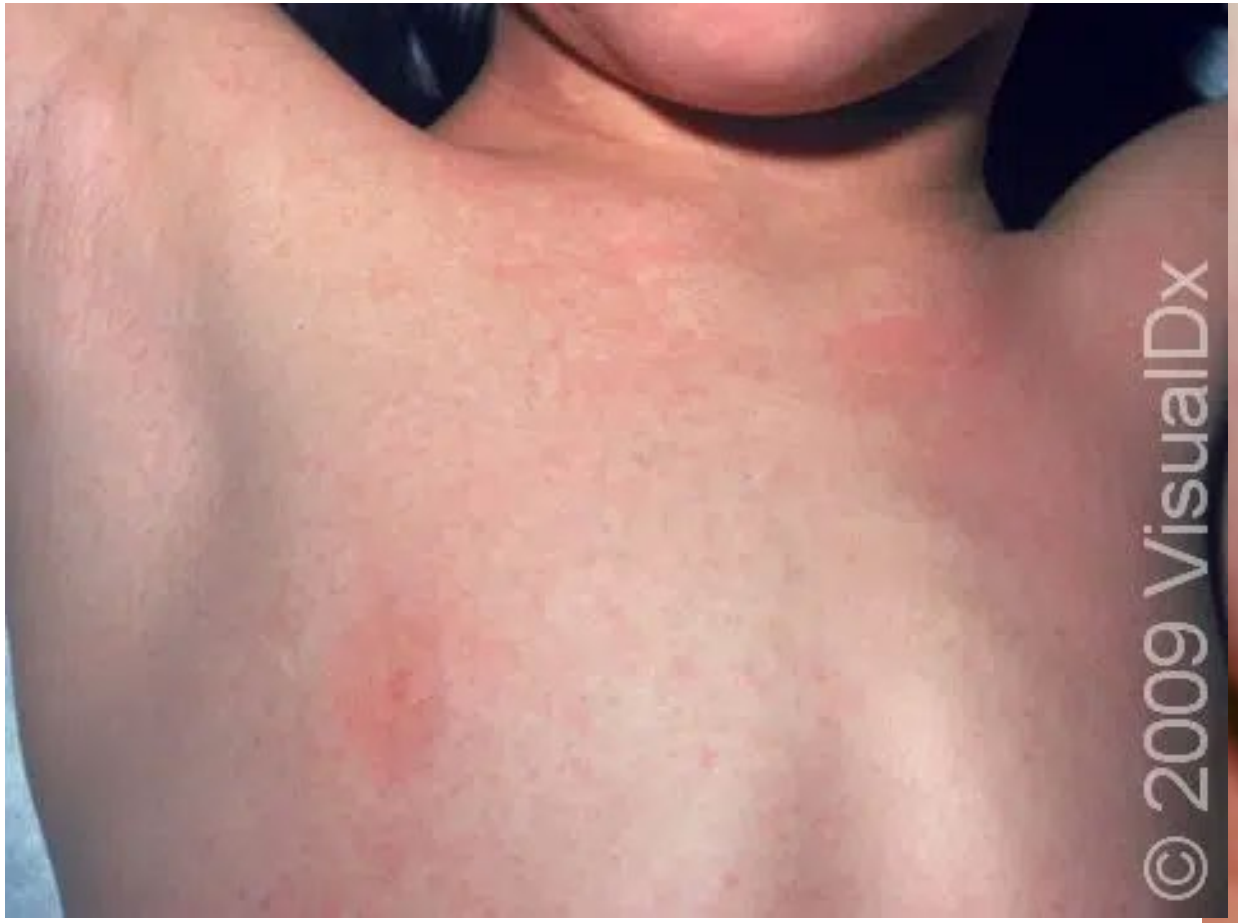


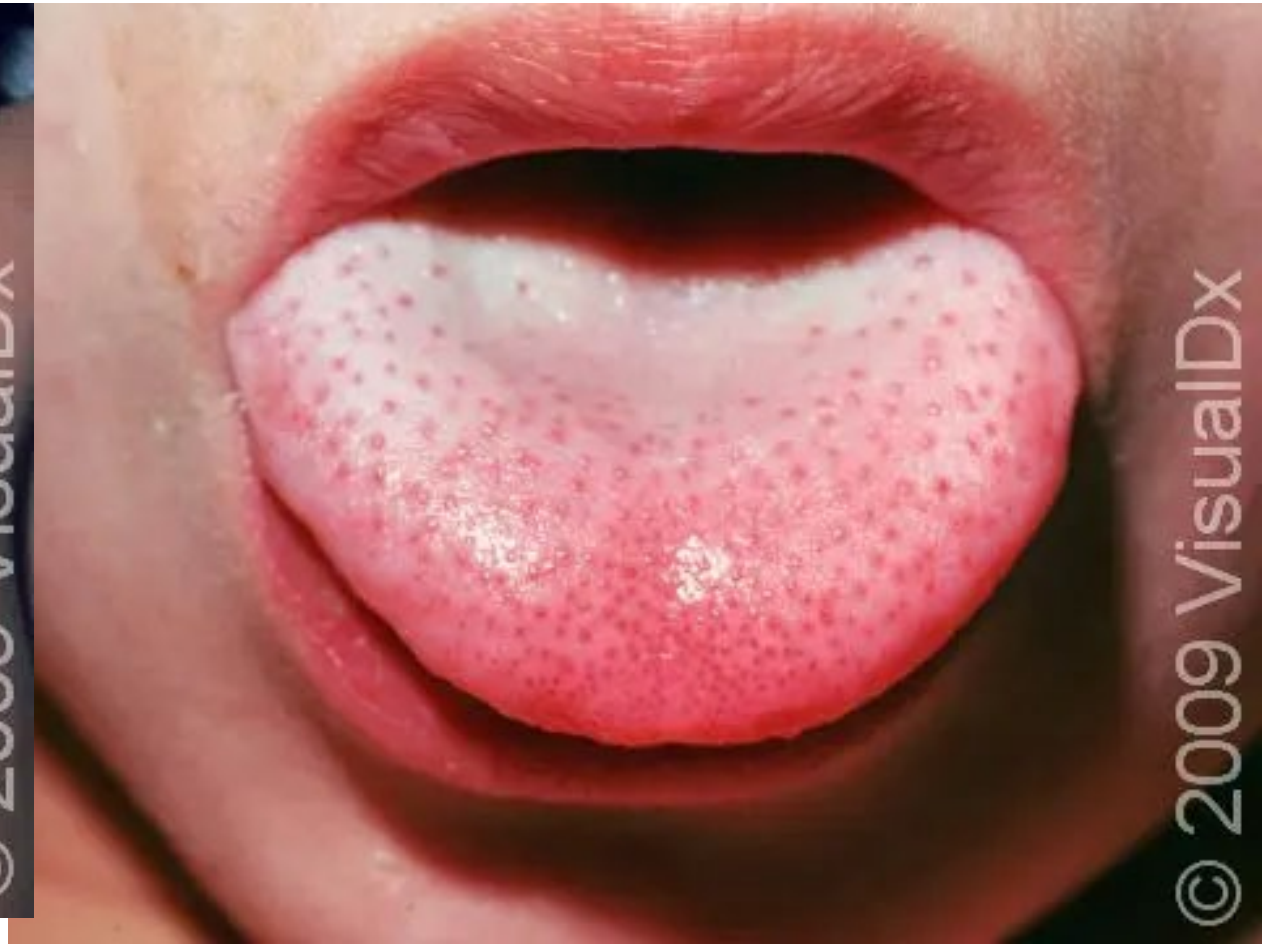
Patient case





Scarlet fever :: Strep pharyngitis



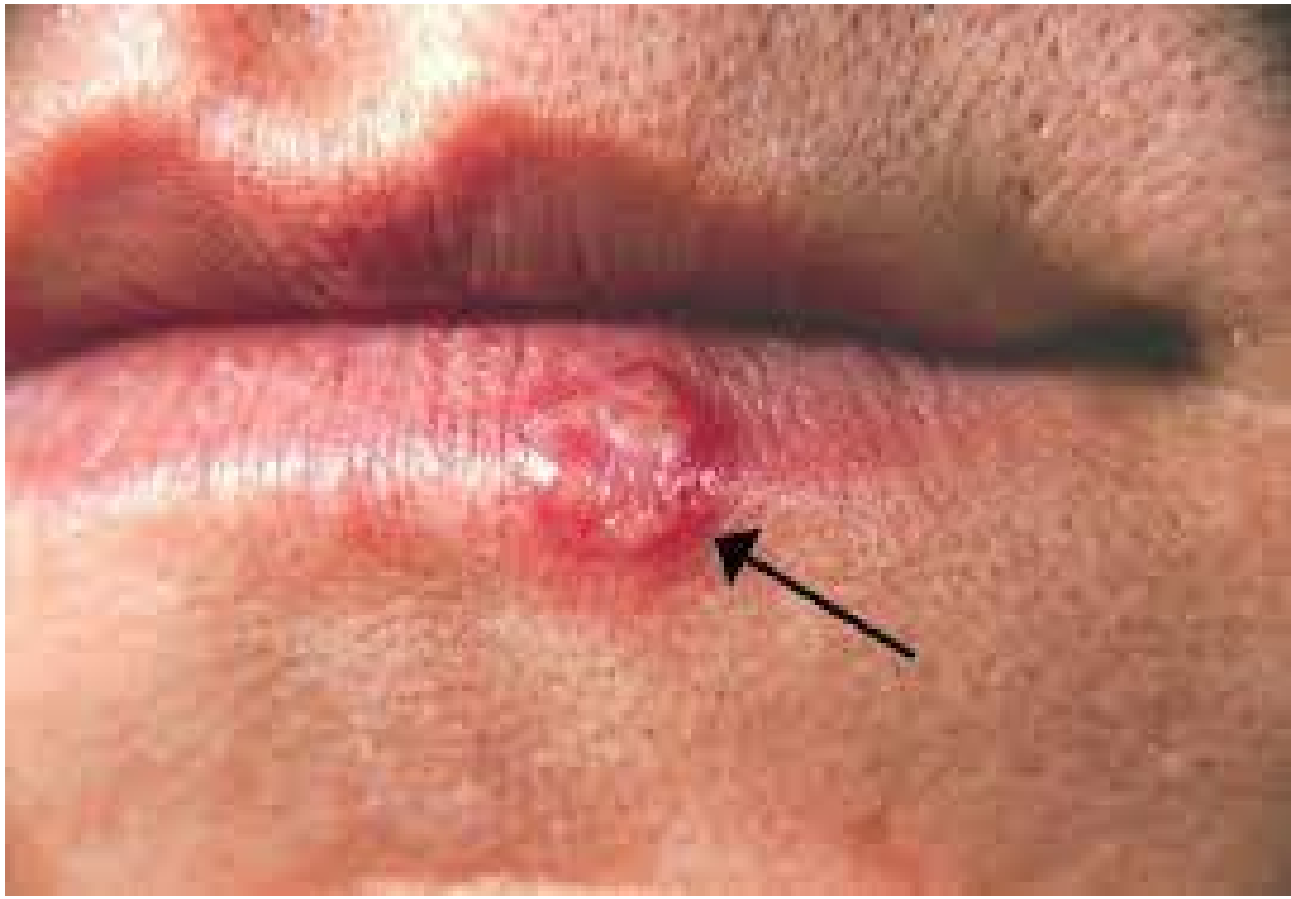


Hand Foot Mouth – Coxsackie Virus

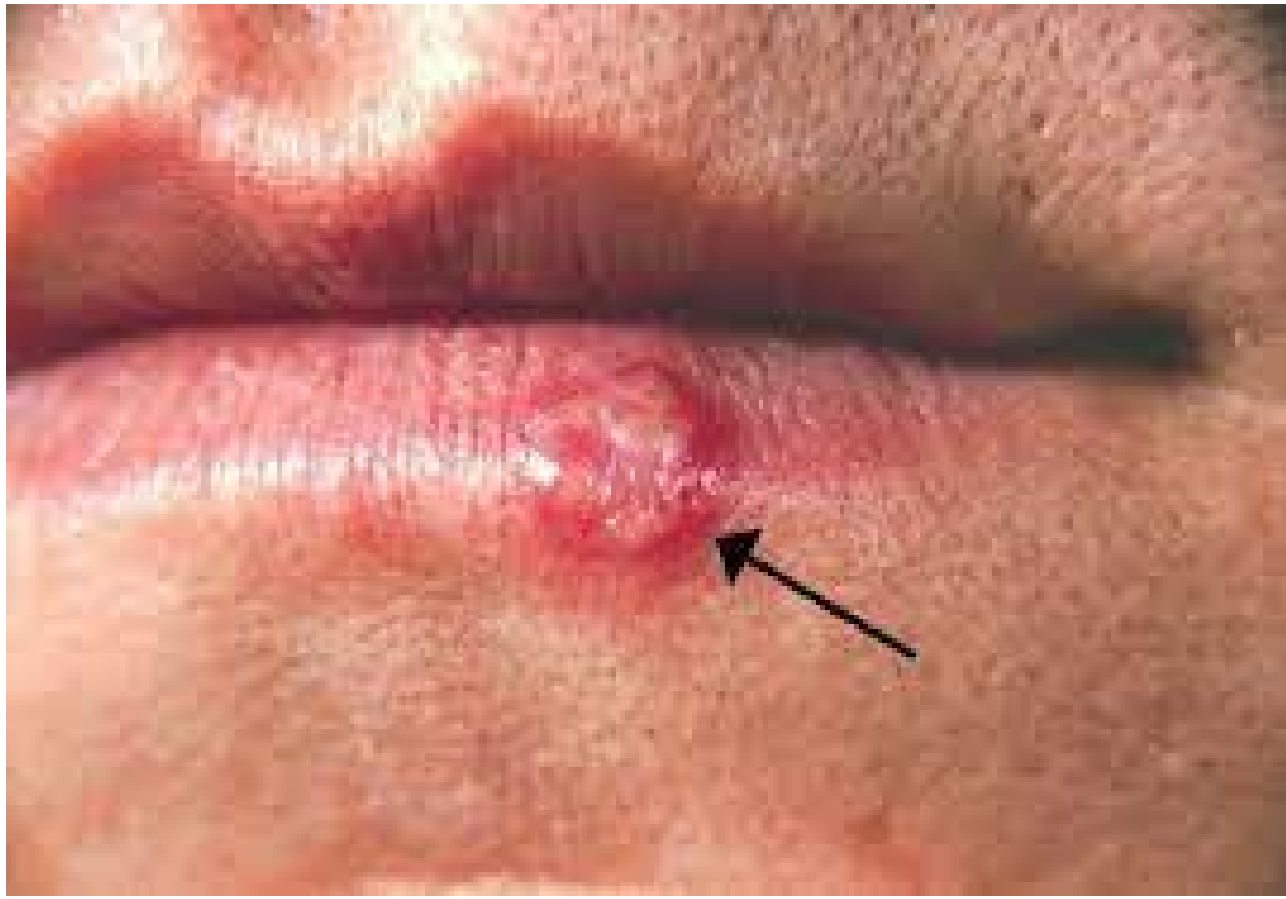
Patient Case

Impetigo

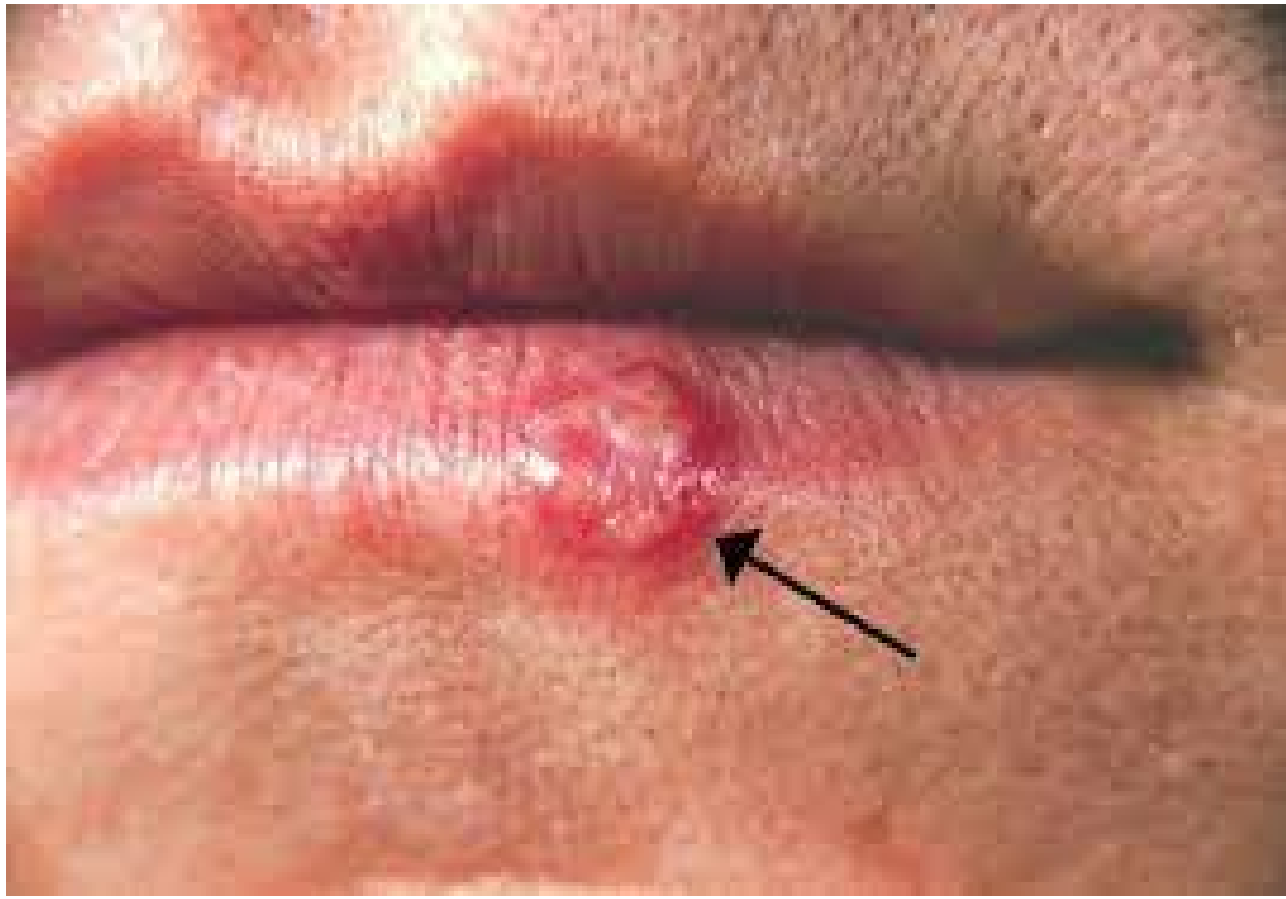
Patient case



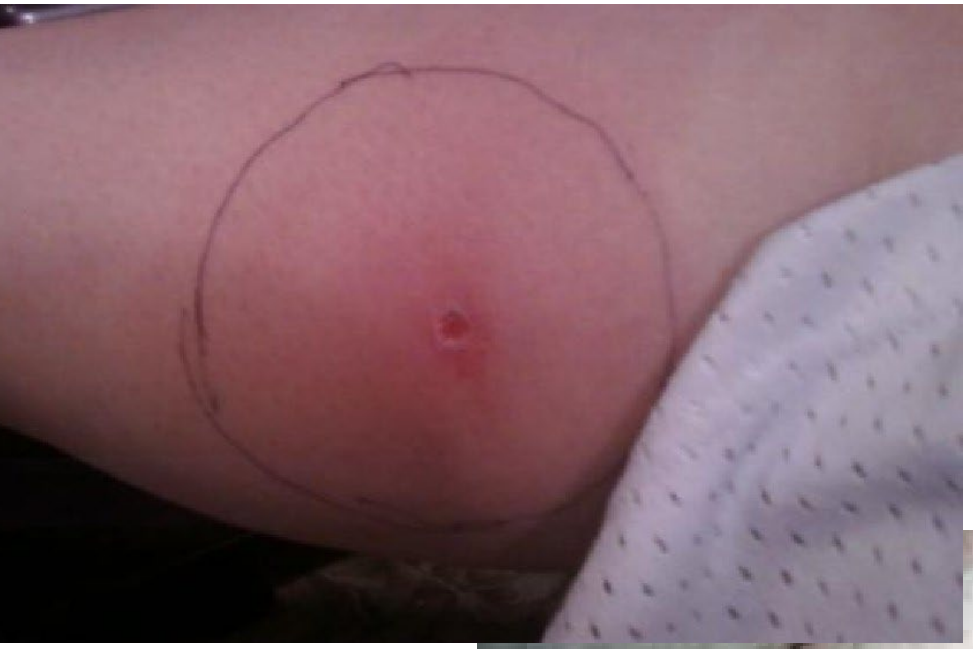
Herpes simplex type 1

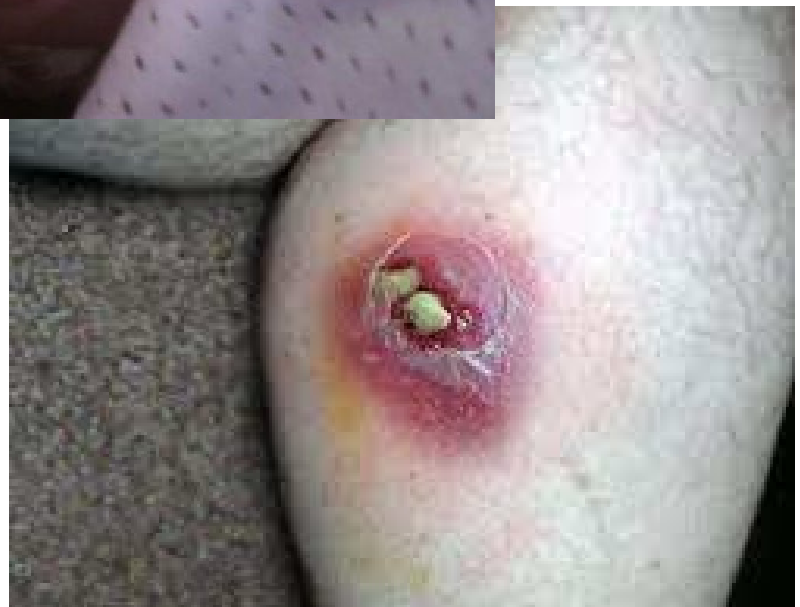


Impetigo versus HSV 1?



Spider bite



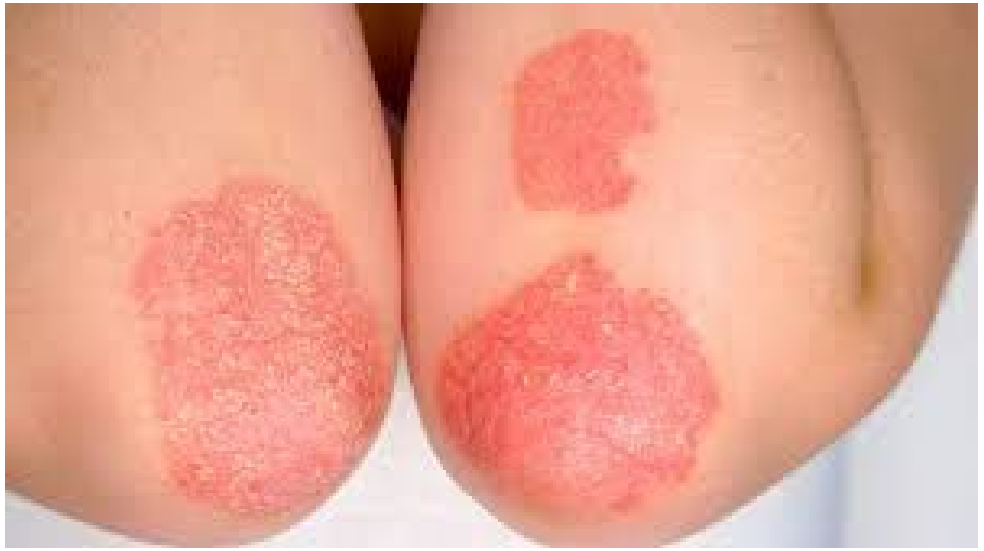


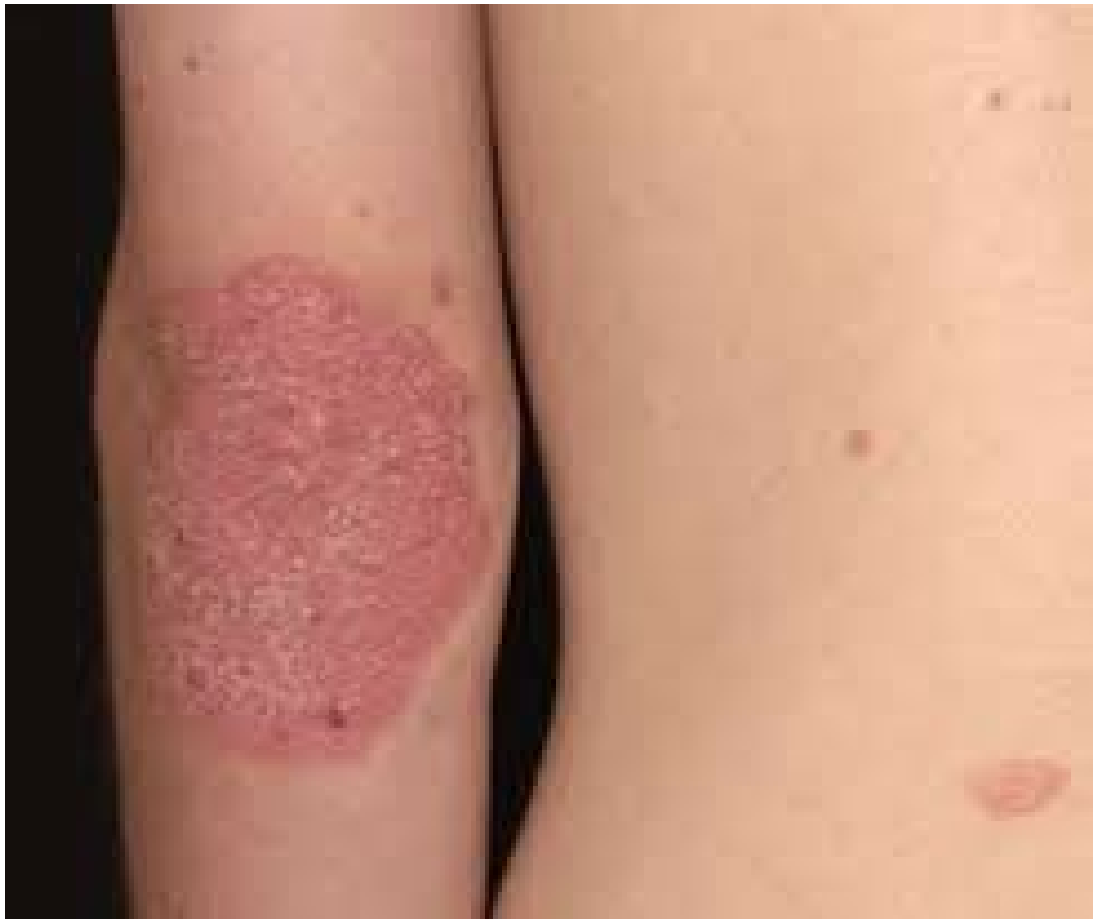
Atopic dermatitis - Eczema

- ”The itch that rashes”
- Adversely affects mental health, mainly via disruption of sleep
- Affects 15-20% of all children
- Peak prevalence at age 2, overall
- 2 Components
  - Dryness – moisturize!!!
  - Atopy – “egg-zema”

Psoriasis

- Incidence in children 0.13%
- Peaks in adolescence

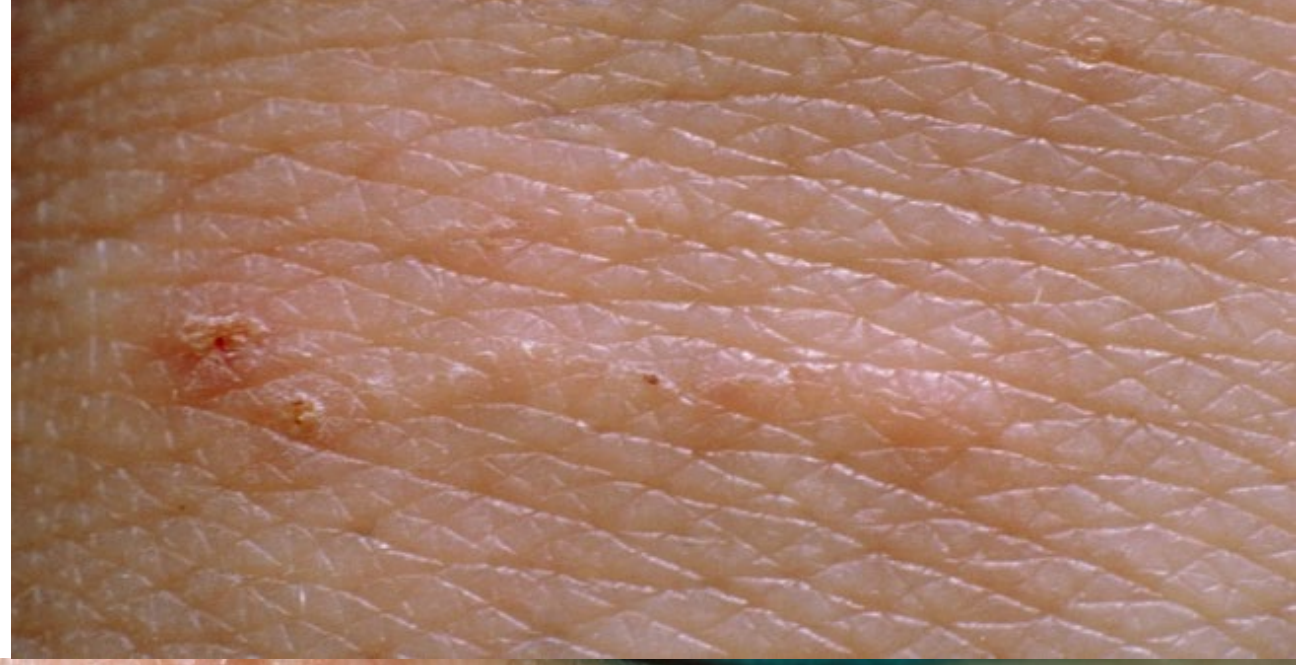


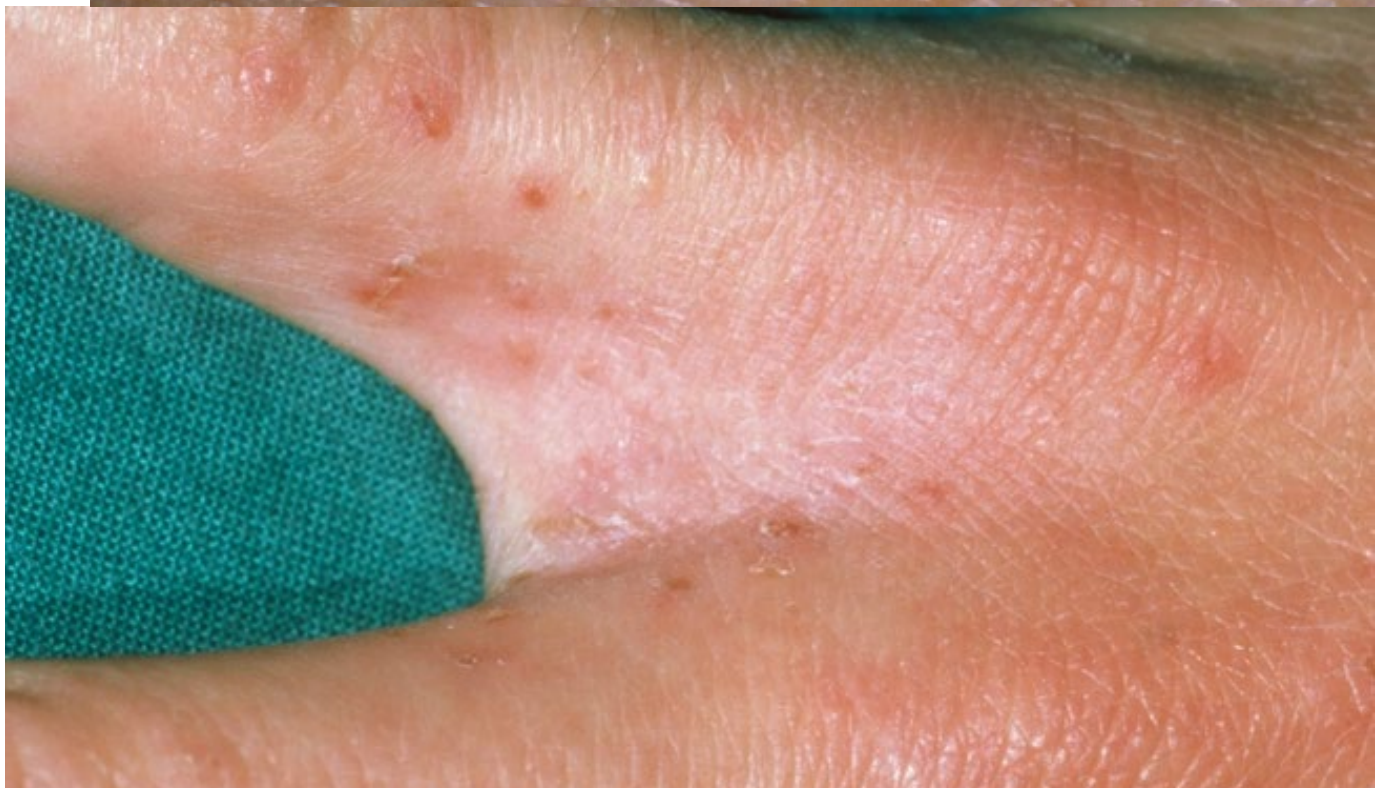


Liplicker’s Dermatitis

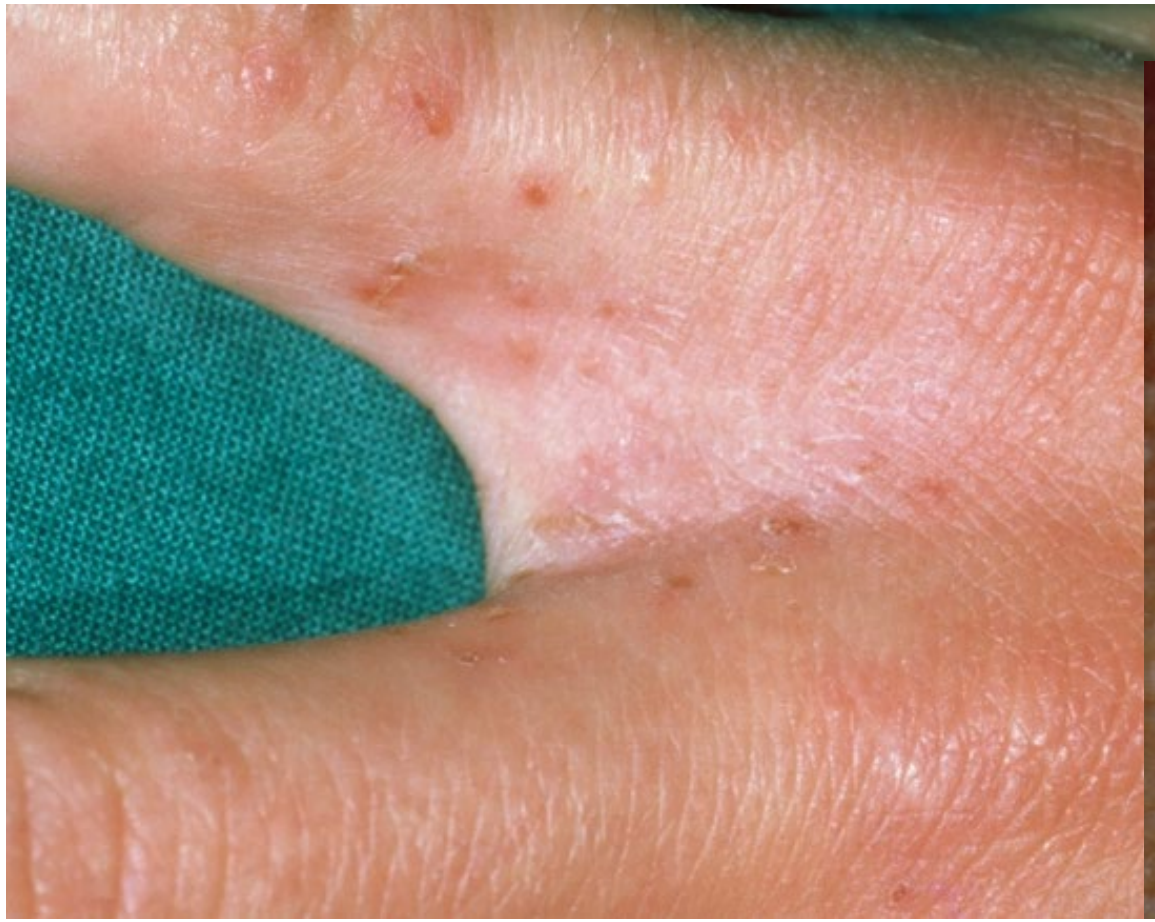
- Repetitive exposure to saliva—which contains digestive enzymes and has an alkaline pH—causes chronic irritation and breakdown of the lip's protective barrier
- More common in children with atopic dermatitis. Habit is often self-perpetuating, as licking provides relief but ultimately worsens underlying irritation
- Treatment includes behavior modification, alternative forms of moisturizing such as petroleum jelly

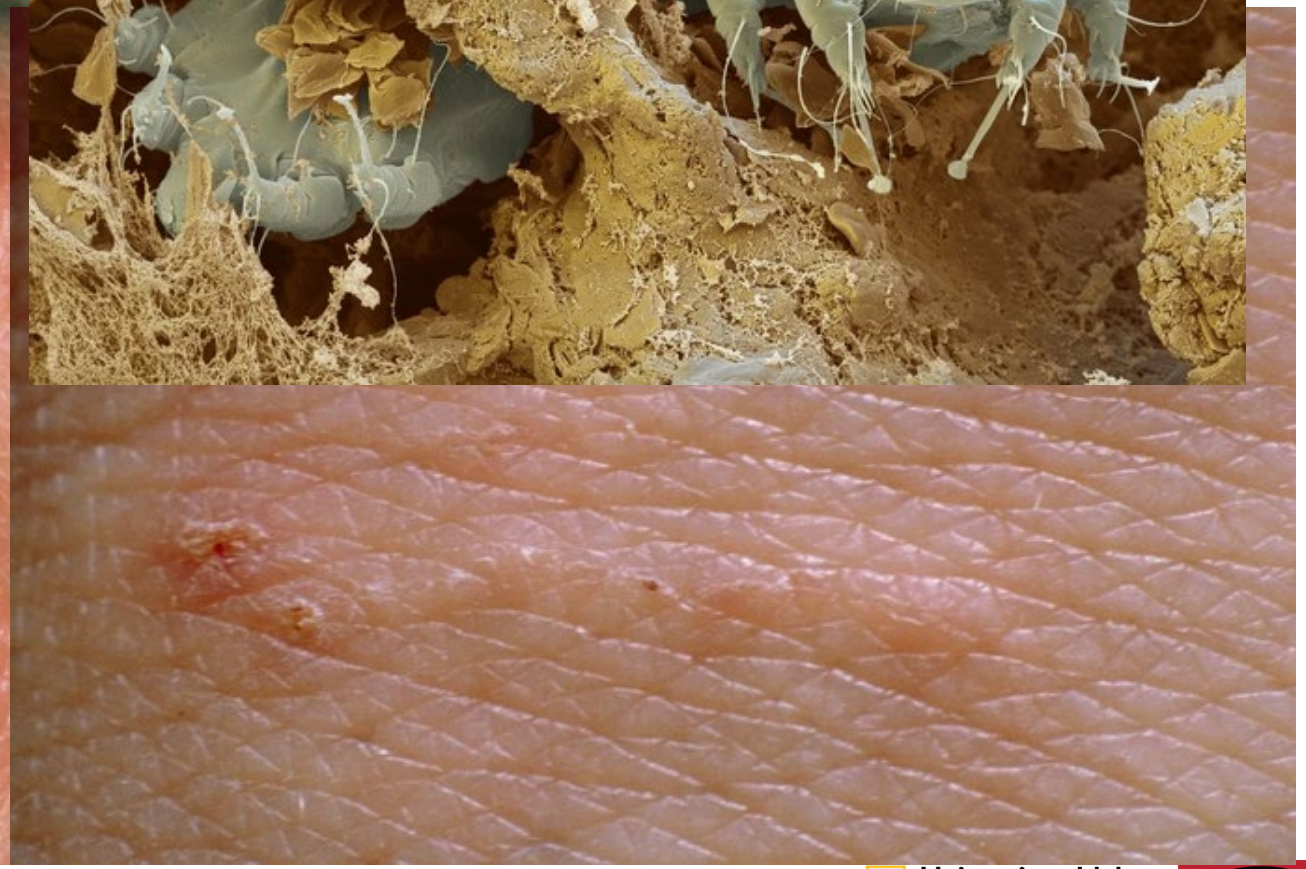
Second grader with extremely itchy rash; the teacher send them to you because the itching is interfering with learning
1-3 mm papular lesions, some in linear pattern
Intertriginous distribution



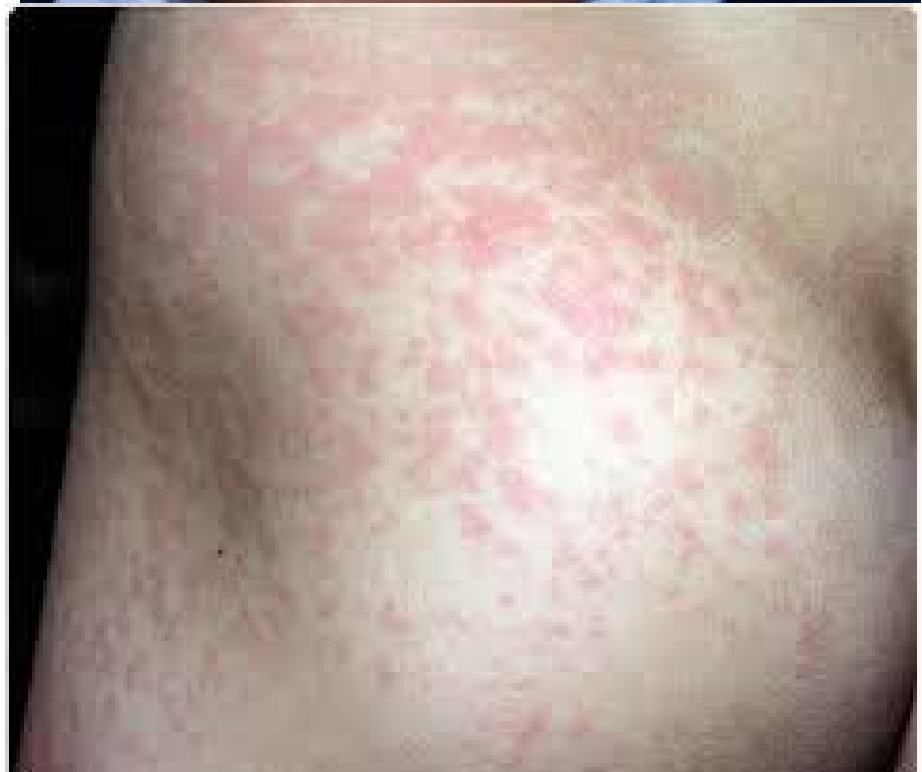


Scabies



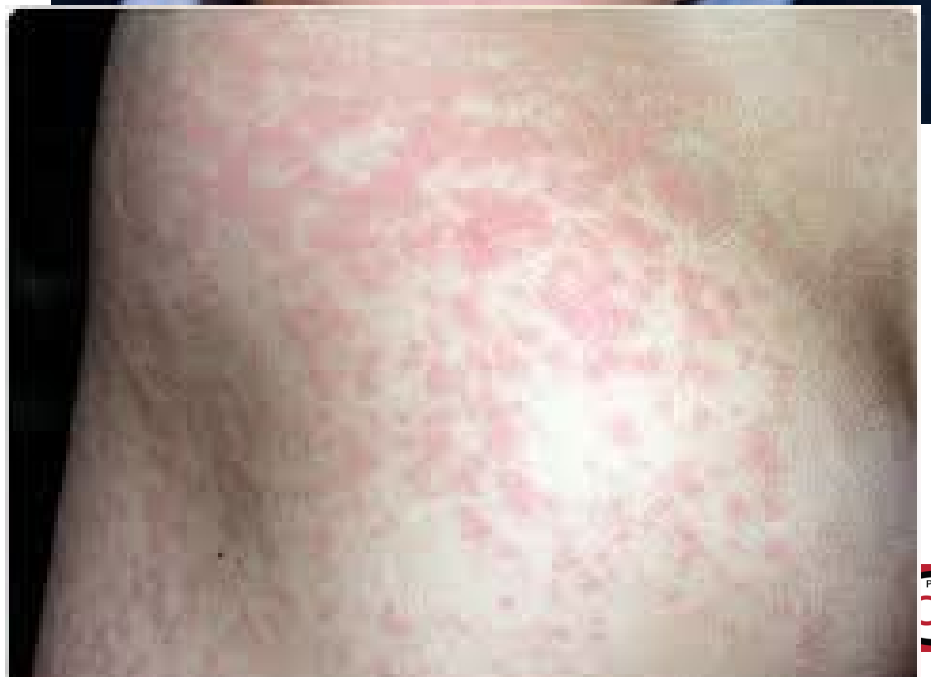


- Kindergartner who had never attended childcare or preschool before, presents with a maculopapular rash with distribution mainly on the cheeks (”slapped cheek appearance”) and also reticular fine papular rash over extremities.
- He is otherwise well-appearing, no fever

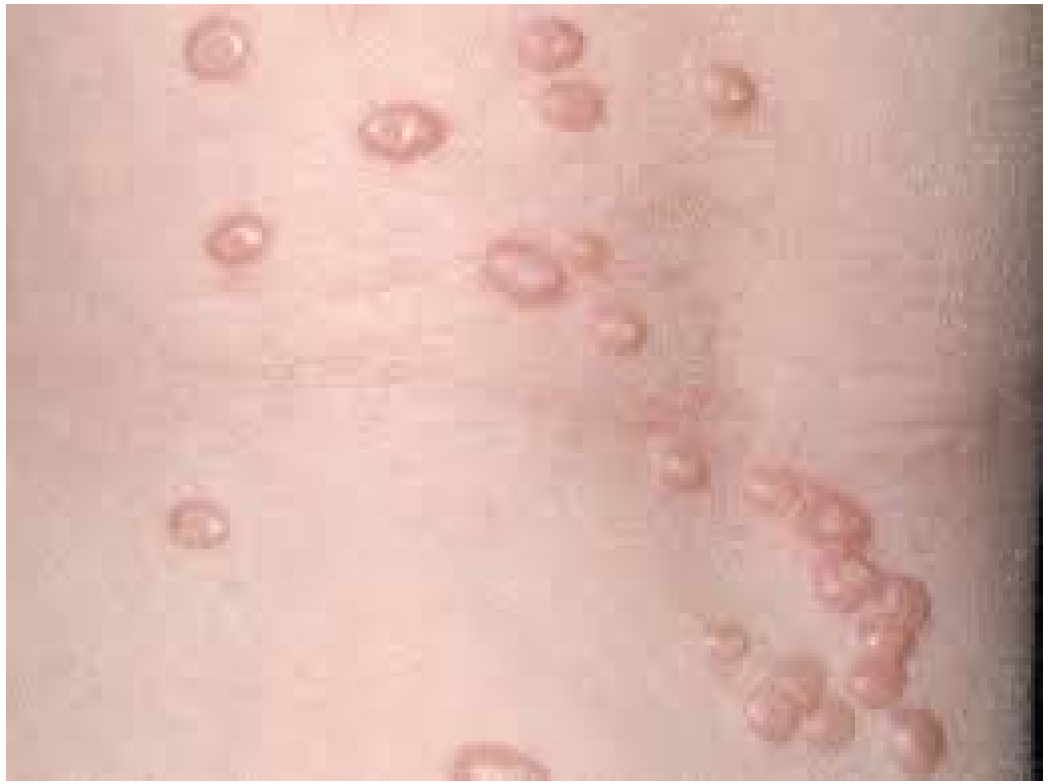


Erythema infectiosum (Fifth disease) Parvoviru

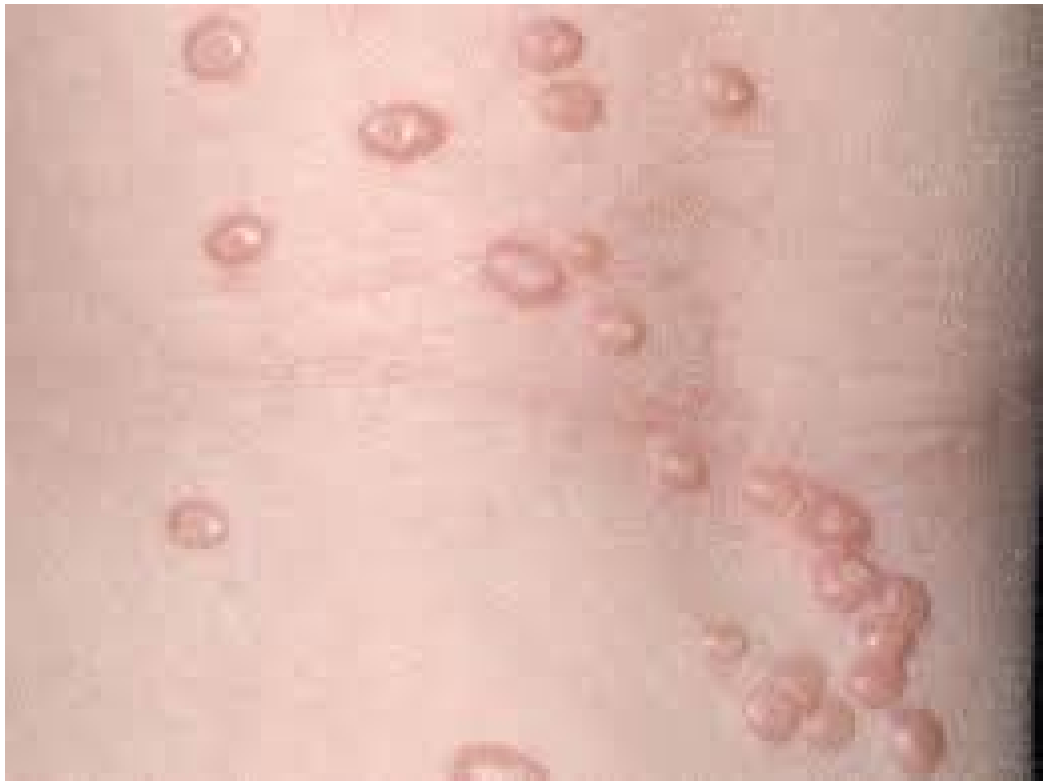
- Most common before 5 years of age, but can happen any age, including adults
- Can be life-threatening in 2 specific populations:
  - Sickle cell anemia
  - Pregnancy



Pearly papules with umbilication in clusters on trunk
Not itchy

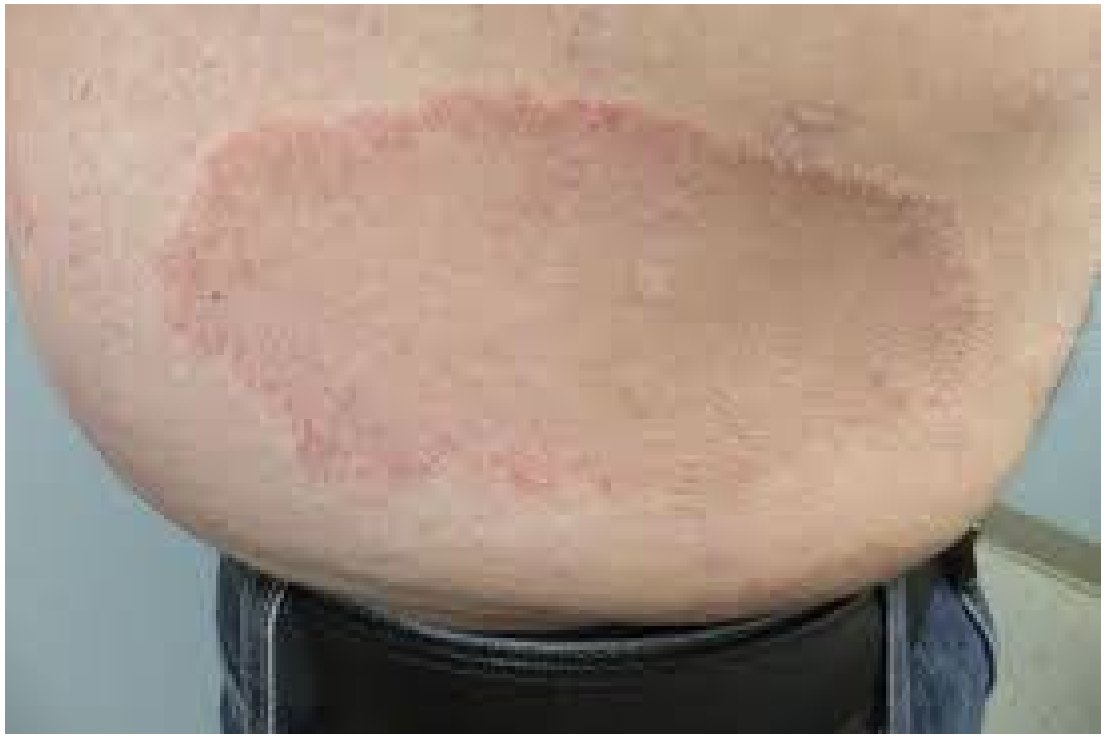


Molluscum contagiosum or “seed warts”



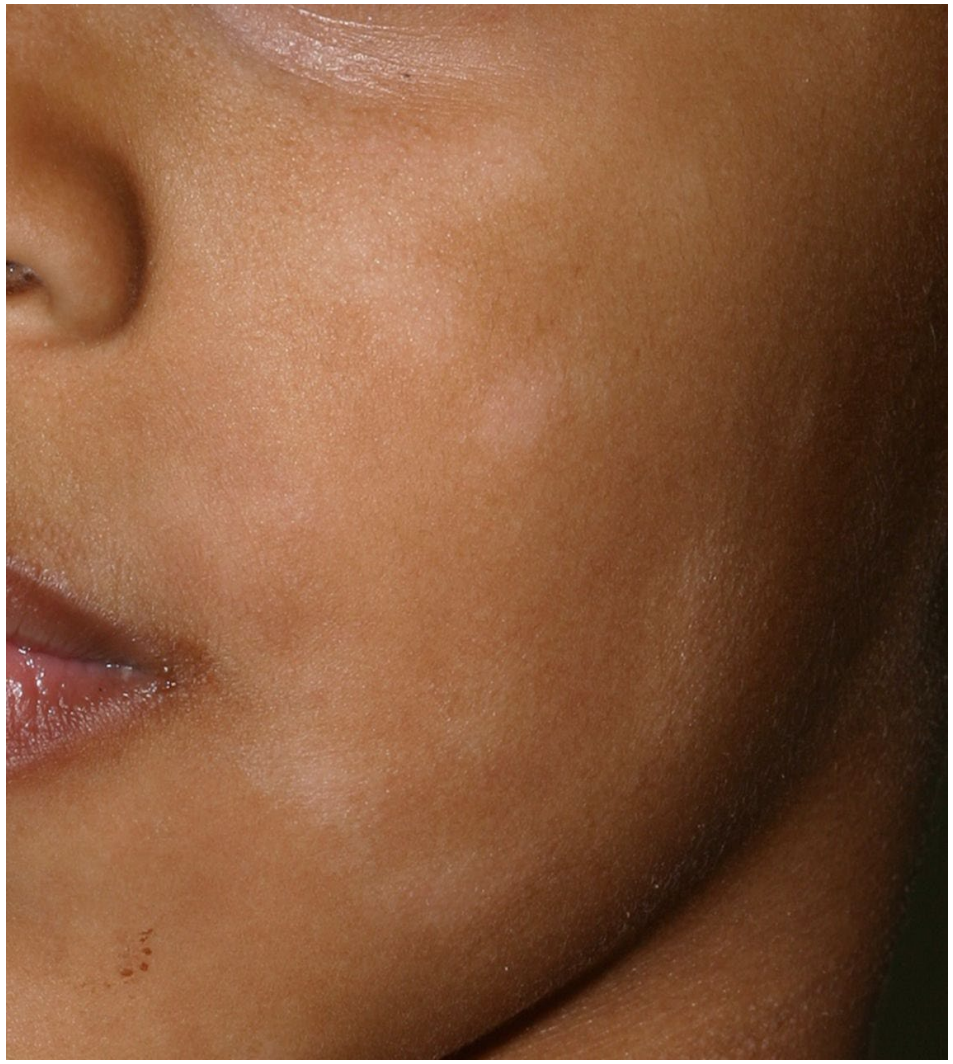
- Best treatment = no treatment!
- Happens mainly in children, as adults typically have immunity
- Treatment only necessary if they are disfiguring, causing recurrent infection or eczema flares
- Treatment includes irritating them (alcohol), or destruction by freezing

Tinea corporis (ring worm)

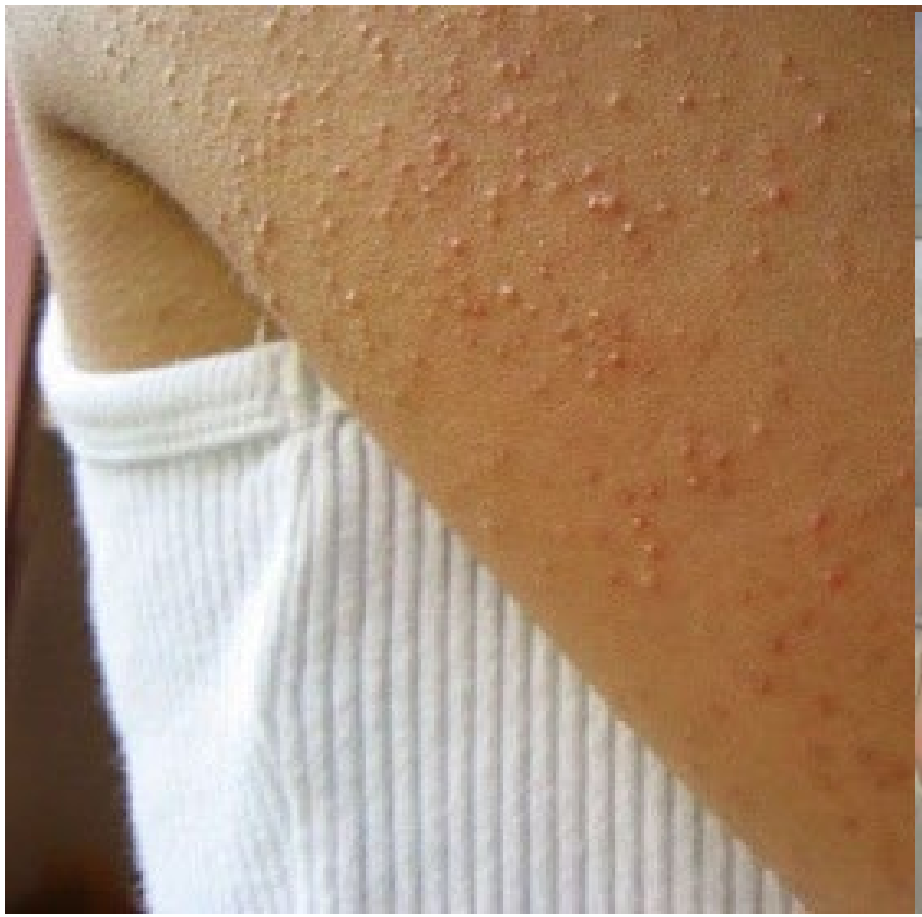


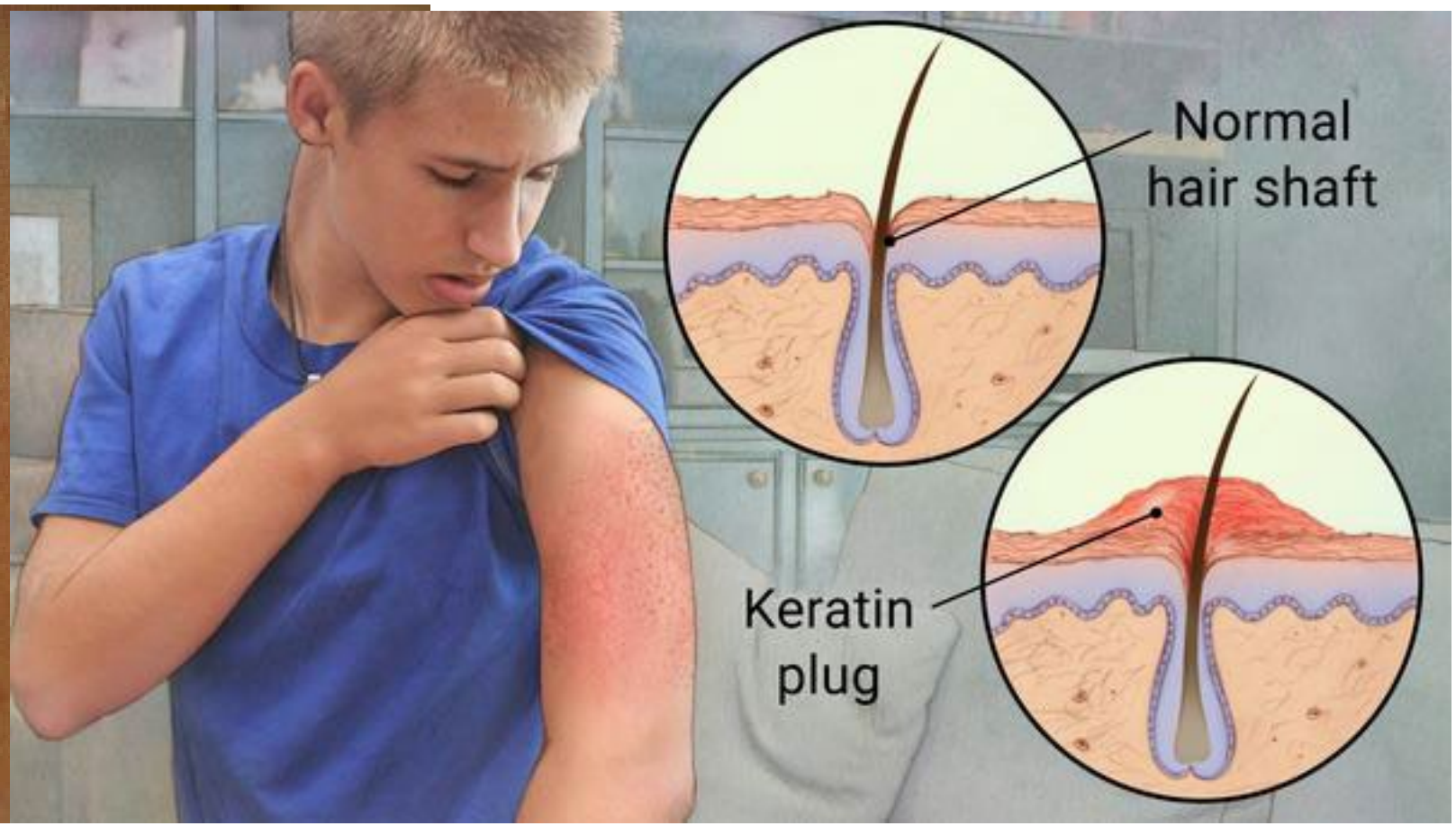
Pityriasis alba

- Benign condition, though may cause distress due to appearance
- Can be associated with eczema
- Due to inflammation leading to destruction of melanocytes, leading to temporary loss of pigment (melanin)
- Treatment – moisturizing, SPF protection
- Typically resolves within months



Keratosis pilaris





Wound Care Do's and Don'ts

- Washing a wound
  - Do not use hydrogen peroxide or rubbing alcohol on an open wound
  - Do use mild soap and water for minor wounds
  - Do use hypochlorous acid (Active), iodine, betadine for deeper wounds
- Dressing a wound
  - Do not use Neosporin
  - Do use white petrolatum ointment (Vaseline, Aquaphor)
- Wound healing
  - Do not dry or air it out
  - Do keep it moist

Key Points

- Think meningococcal disease for an ill-appearing student with progressing petechiae
- Think anaphylaxis for an ill-appearing student with sudden-onset difficulty breathing or cough, facial or tongue swelling, abdominal pain or vomiting. Check a blood pressure. When in doubt = EPI!
- Urticaria is very common, usually benign (though pruritic can be impairing)
- Don’t use hydrogen peroxide or alcohol on an open wound. It is best to use mild soap and water, and cover with white petroleum jelly or bacitracin ointment (NOT Neosporin or any neomycin product)

References

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- Atlas of Pediatric Physical Diagnosis, Zitelli and Davis, McIntire, Nowalk, Sixth Edition
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