Let’s Make a Rash Decision.

Kristin Rygg, MPAS, PA-C

Skin, Bones, Hearts & Private Parts

Kristin Rygg, MPAS, PA-C

- University of Florida, College of Medicine – 2008
- SDPA President Elect, 2024-2025
- SDPA Vice President, 2023-2024
- SDPA Director at Large, 2021-2023
- AAPA Huddle Representative, Dermatology, 2022
- Guest Faculty - University of Colorado PA Program
- Pharmaceutical Speaker
- Denver, Colorado

Overview

- Steroids
- Contact Dermatitis
- Eczema / Atopic Dermatitis
- Psoriasis, guttate
- Drug eruption, EM, SJS/TEN

Skin, Bones, Hearts & Private Parts

Steroid Classes

Medscape® www.medscape.com

Class	Generic Name	Formulation
Class 1 Very High Potency		
	Betamethasone dipropionate	0.05% G O (diprolene)
	Clobetasol	0.05% C F G L O
	Diflorasone diacetate	0.05% O
	Halobetasol propionate	0.05% C O
Class 2 High Potency		
	Amcinonide	0.1% O
	Betamethasone dipropionate	0.05% C (diprolene)
	Desoximetasone	0.05% G, 0.25% C O
	Fluocinonide	0.05% C G O S
	Halcinonide	0.1% C
	Mometasone furoate	0.1% O
Class 3 High Potency		
	Amcinonide	0.1% C L
	Betamethasone dipropionate	0.05% C (non-diprolene)
	Betamethasone valerate	0.1% O
	Desoximetasone	0.05% C
	Diflorasone diacetate	0.05% C
	Fluticasone propionate	0.005% O
	Halcinonide	0.1% O S
	Triamcinolone	0.1% O
Class 4 Mid Potency		
	Betamethasone valerate	0.12% F
	Flucinolone acetonide	0.025% O
	Flurandrenolide	0.05% O
	Hydrocortisone valerate	0.2% O
	Mometasone furoate	0.1% C
	Triamcinolone	0.1% C
Class 5 Mid Potency		
	Betamethasone dipropionate	0.05% L
	Betamethasone valerate	0.1% C
	Flucinolone acetonide	0.025% C
	Fluticasone propionate	0.05% C
	Flurandrenolide	0.05% C
	Hydrocortisone butyrate	0.1% C
	Hydrocortisone valerate	0.2% C
Class 6 Low Potency		
	Alcometasone dipropionate	0.05% C O
	Betamethasone valerate	0.1% L
	Desonide	0.05% C L O
	Flucinolone acetonide	0.01% C S
Class 7 Low Potency		
	Hydrocortisone acetate	0.5% C L O, 1% C O F
	Hydrocortisone hydrochloride	0.25% C L, 0.5% C L O S, 1% C L O S, 2% L, 2.5% C L O S

C = Cream, F = Foam, G = Gel, L = Lotion, O = Ointment, S = Solution

General adult use, but use caution

- Classes 1, 2: scalp, palms, soles
- Classes 3, 4, 5: trunk, extremities
- Classes 6, 7: face, folds, genitals

Infants/children

- Lowest potency steroid, least amount of time
- Be aware of peanut allergy

Skin, Bones, Hearts & Private Parts

Steroid Pearls

- Judicious use
- Vehicle matters: solution, lotion, cream, ointment
- Know one-two steroids in each class
- Know when, where and how to use them
- When treating peri-orbital area always ensure no cataract/glaucoma
- Always put stop date on rx instructions
- Careful with moderate-to-large BSA
- Avoid occlusion
- Steroids can cause glaucoma, cataract, HPA axis suppression, striae, atrophy
- Ensure steroid is age appropriate. Kids are different.
- Never give steroid/antifungal combo

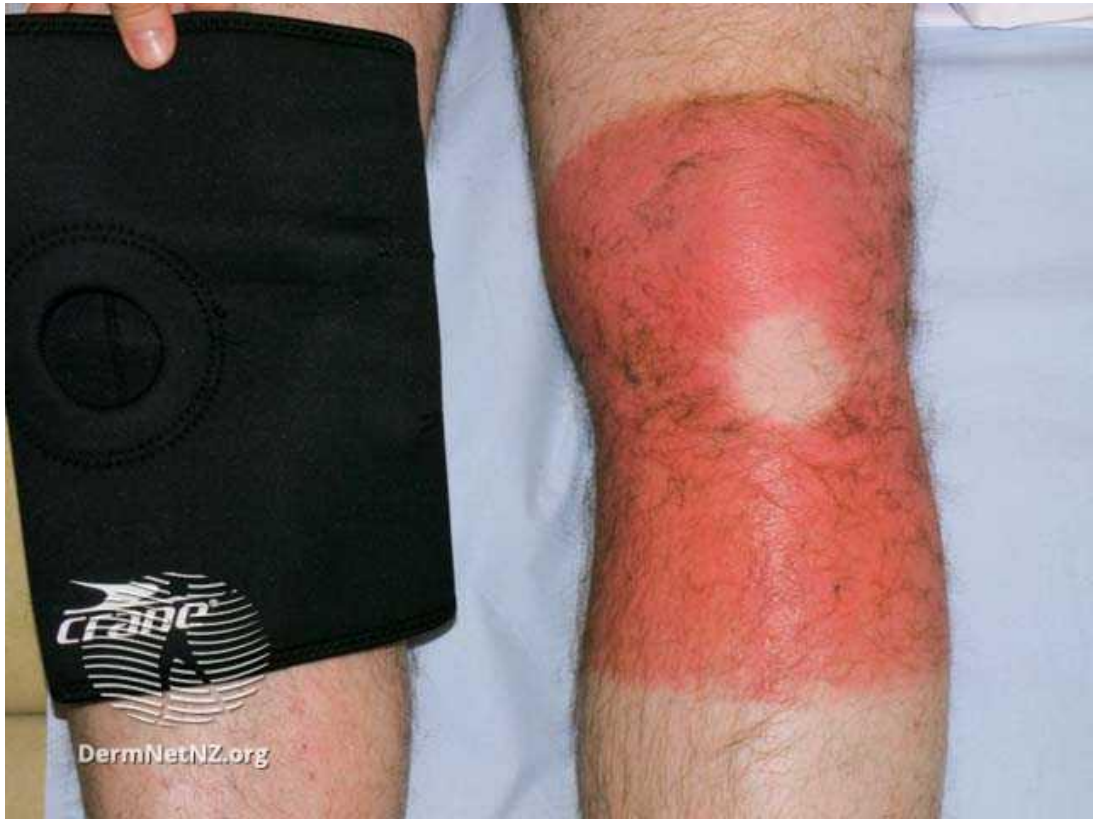
Skin, Bones, Hearts & Private Parts

Approach to Rashes

- History is King
  - Age
  - HPI
  - ROS
  - Unadulterated version?
  - New or changed medications?
- Distribution
- Are they sick? Do they look toxic?
- Biopsy
- Treatment

Skin, Bones, Hearts & Private Parts

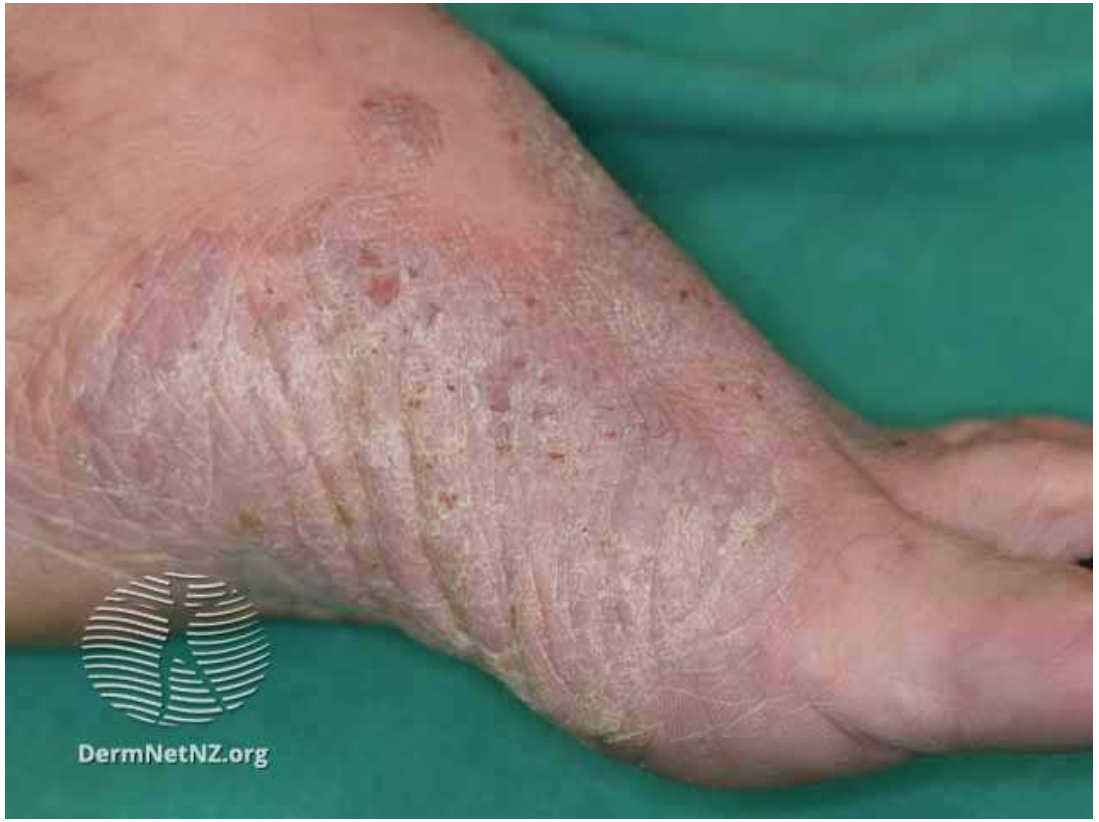
Contact Dermatitis

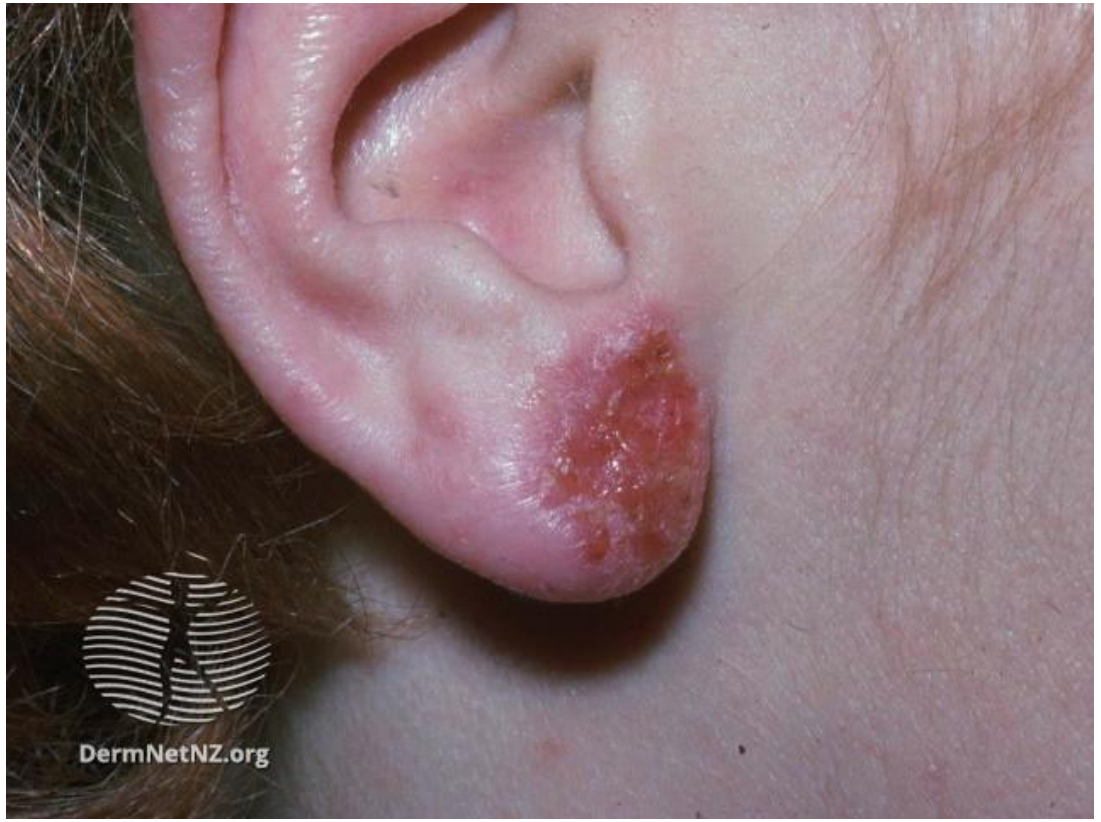


https://dermnetnz.org/assets/collection/Allergic-contact-dermatitis/allergic-contact-dermatitis-00001__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg
https://dermnetnz.org/assets/collection/Allergic-contact-dermatitis/allergic-contact-dermatitis-0023__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

Contact Dermatitis





https://dermnetnz.org/assets/collection/Allergic-contact-dermatitis/allergic-contact-dermatitis-0012__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

https://dermnetnz.org/assets/Uploads/nickel-contact-allergy__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG

Skin, Bones, Hearts & Private Parts

Contact Dermatitis: Overview

- Allergic (ACD)
  - Delayed hypersensitivity reaction and worsens with exposure
  - Inflammatory response to antigen or irritant
  - Common allergens: nickel, acrylic, formaldehyde, fragrance, plant, neomycin, adhesives, oxybenzone, cobalt
  - Appears within 24-96 hours after exposure

- Irritant (ICD)
  - Occurs only in area of direct contact
  - Commonly caused by chemical

- May be difficult to discern type
- May be well-demarcated
- May be airborne, occupation induced

Skin, Bones, Hearts & Private Parts

Contact Dermatitis (cont)

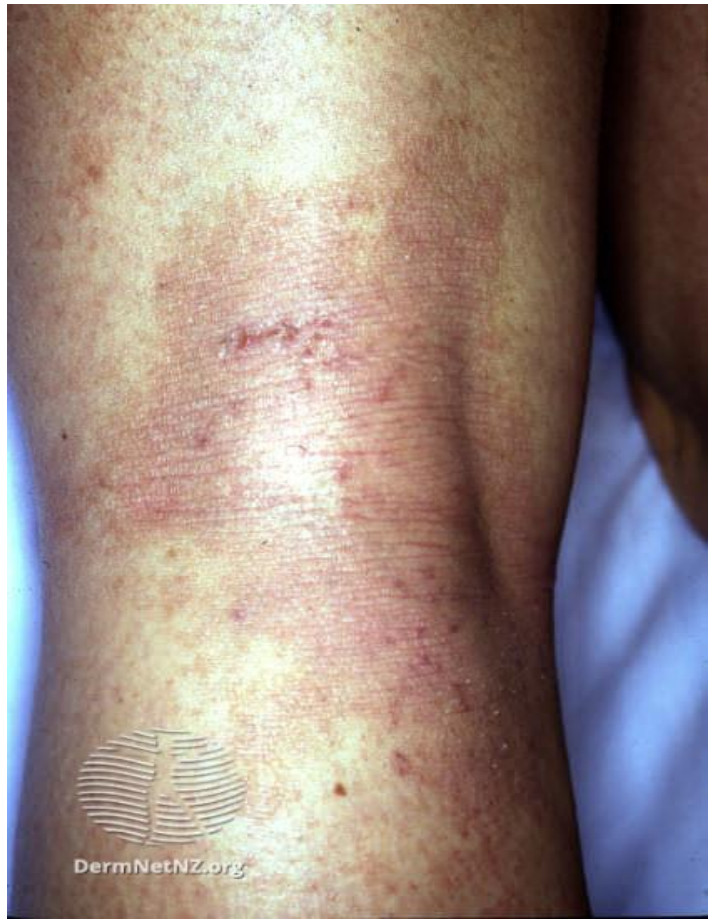
- Acute: clear, fluid-filled vesicles or bullae on erythematous and/or edematous skin; associated pruritis
- Subacute: formation of papules, pruritis
- Chronic: scaling, fissures, lichenification, pruritis

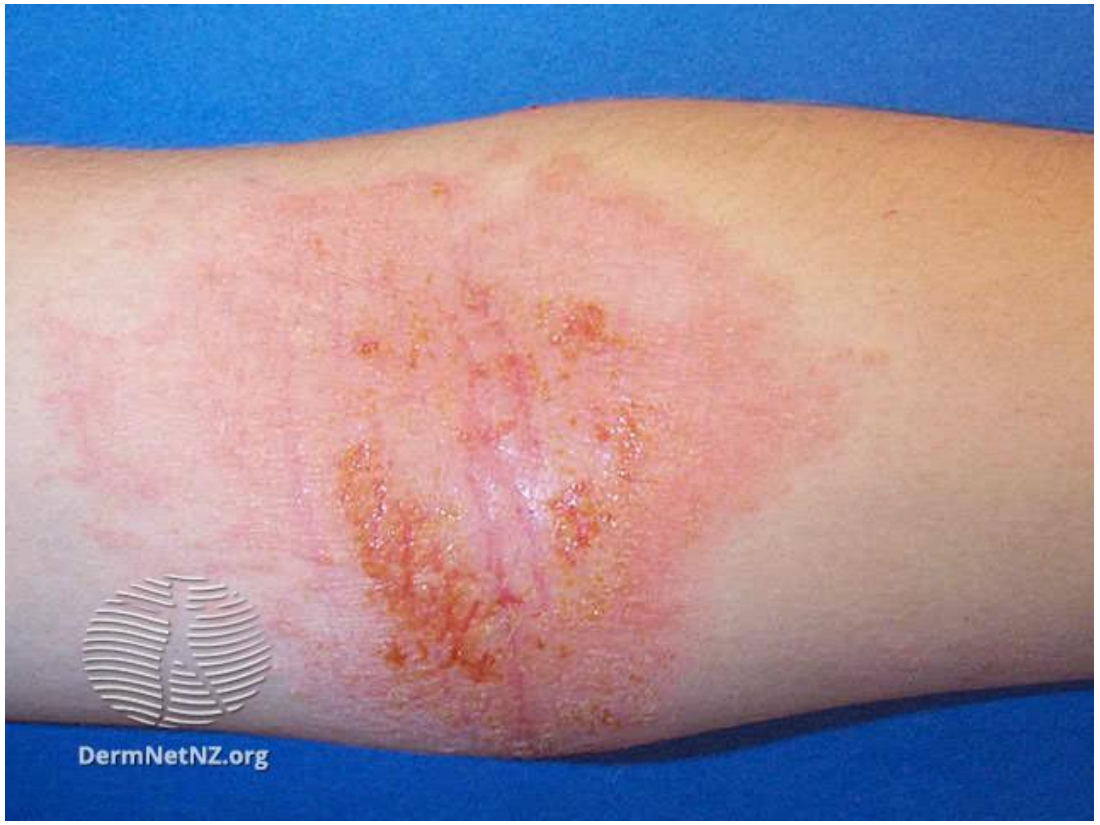
Contact Dermatitis: Treatment

- Stop/avoid offender
- Bland emollients
- Topical steroids
  - Body part specific, BID x 1-2 weeks. Stop 1 week. May repeat once.
- May use topical tacrolimus (BBW)
- Consider antihistamines
- Consider referral to allergy for patch testing

Skin, Bones, Hearts & Private Parts

Eczema and Atopic Dermatitis

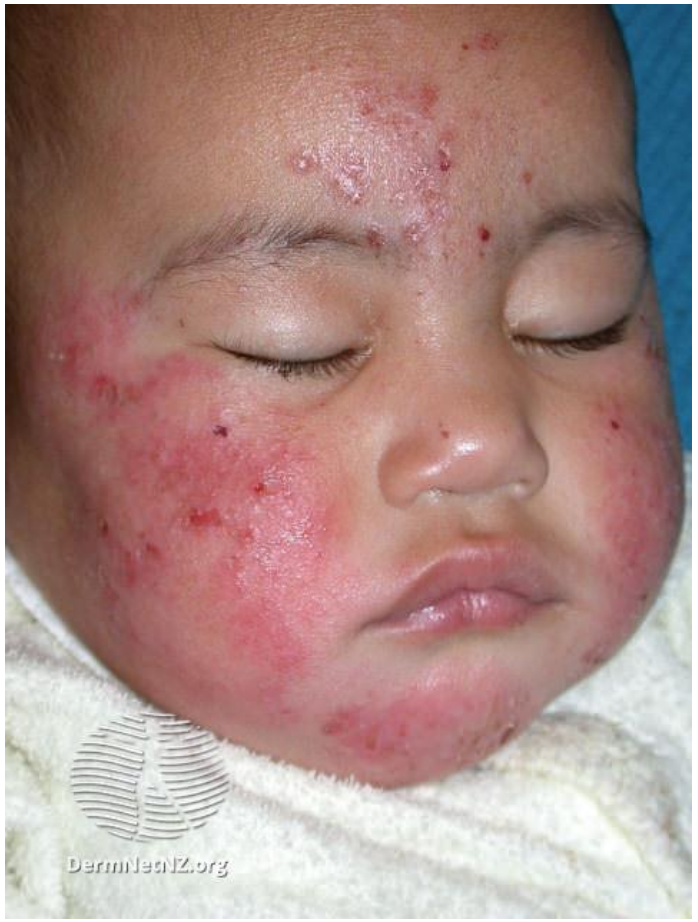


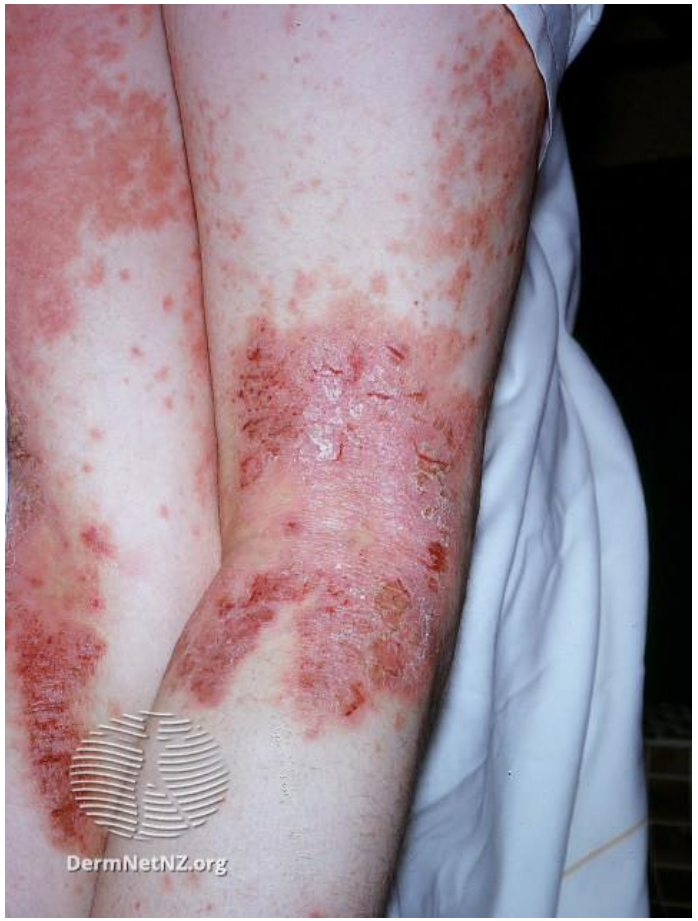


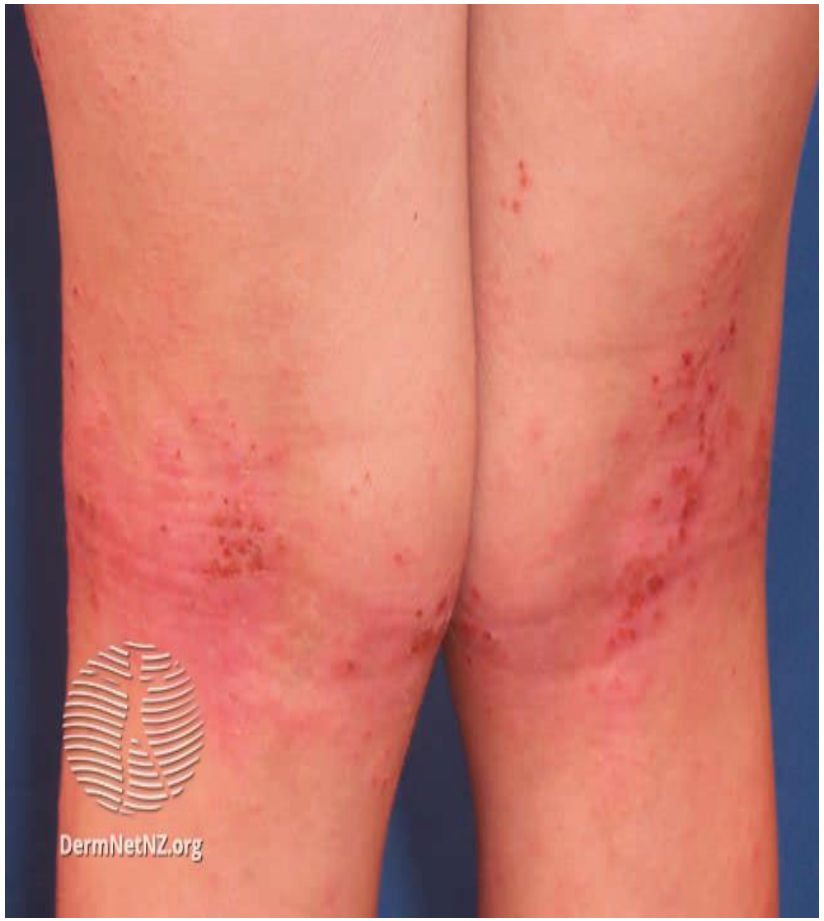
https://dermnetnz.org/assets/Uploads/doctors/dermatitis/images/ecz-atopic10__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg
https://dermnetnz.org/assets/Uploads/doctors/dermatitis/images/ecz-atopic16__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

Eczema and Atopic Dermatitis







https://dermnetnz.org/assets/Uploads/doctors/dermatitis/images/ecz-atopic2__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg
https://dermnetnz.org/assets/Uploads/doctors/dermatitis/images/ecz-atopic24__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg
https://dermnetnz.org/assets/Uploads/doctors/dermatitis/images/ecz-atopic5__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

Eczema and Atopic Dermatitis: Overview

- Poorly demarcated, erythematous scaley patches, lichenification, excoriations, vesicles, hyper- or hypo-pigmentation
- Skin flexural surfaces (neck, acf and popliteal) but can be anywhere
- Pruritis
- Frequently associated with secondary infection
- Multifactorial: allergens, stress, genetics, atopy (asthma, allergic rhinitis, AD)
- Nummular eczema: variant of AD presents mostly 40-50's
  - Pruritis, coin-shaped patches with scale
- Clinical diagnosis but biopsy if uncertain

Skin, Bones, Hearts & Private Parts

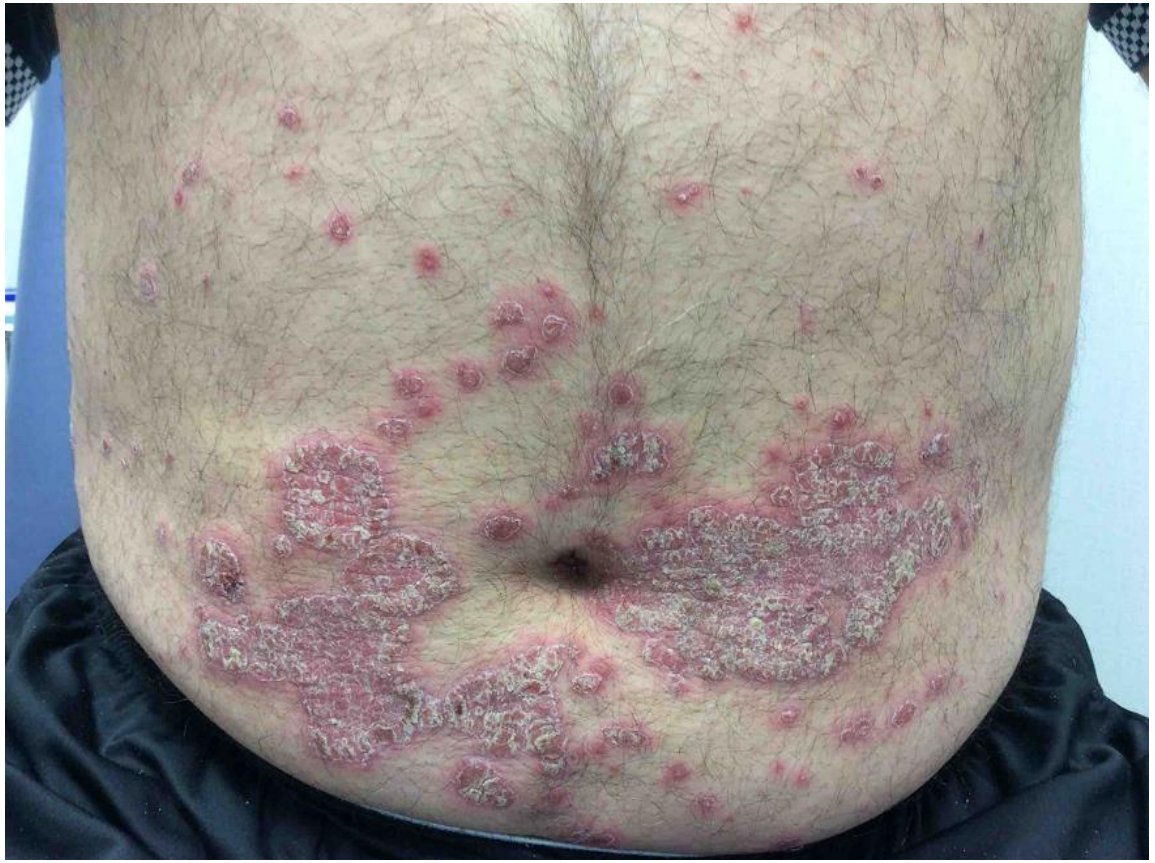
Eczema and Atopic Dermatitis: Treatment

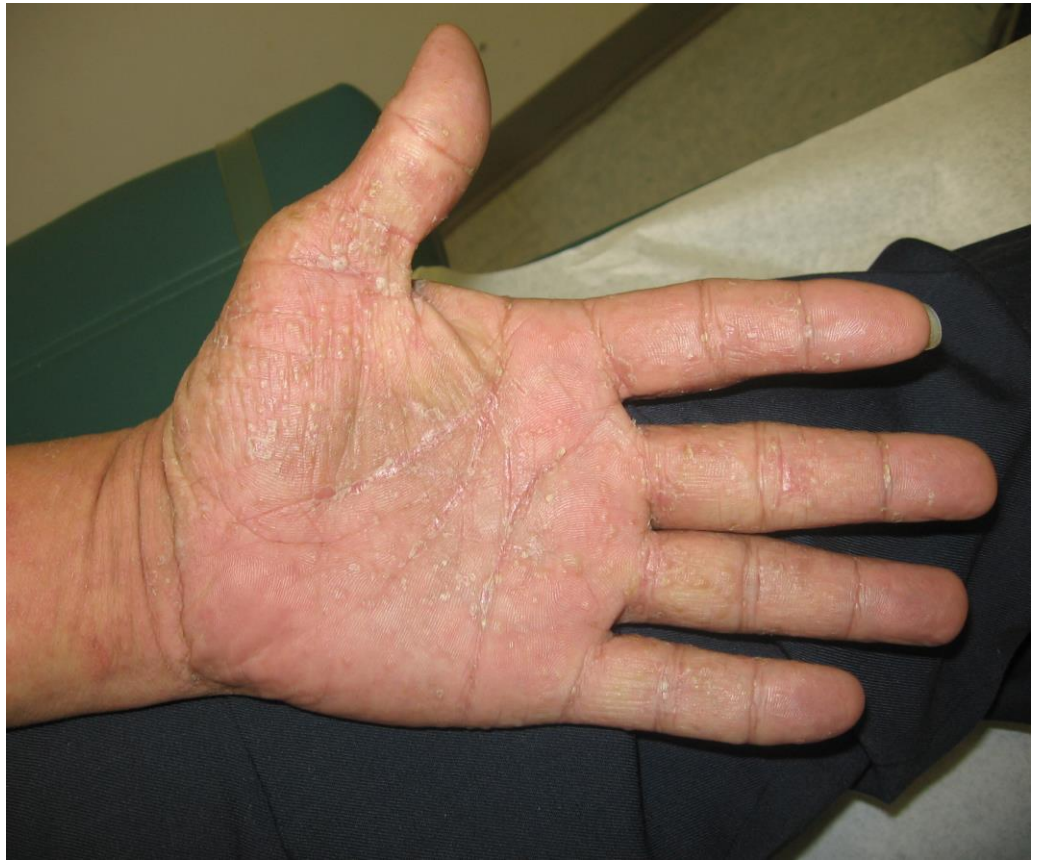
- Topical therapies are first-line if limited BSA or minimal disease
  - Steroid (body part specific) BID x 2 weeks. Stop 1 week. Repeat once.
  - Tacrolimus or Pimecrolimus
    - BBW, greater than 2 yo
  - Crisaborole (2%) oint BID
  - Ruxolitinib (1.5%) cream BID

- Systemic therapy for moderate-severe disease
  - Dupilimumab
    - Adult: Start 600 mg SC divided in 2 sites x 1 then 300 mg SC q2weeks
    - Pediatric: weight and age dependent
  - Tralokinumab
  - JAKS (Abrocitinib, Upadacitinib)
  - IL-31 – new drug pending FDA approval

Skin, Bones, Hearts & Private Parts

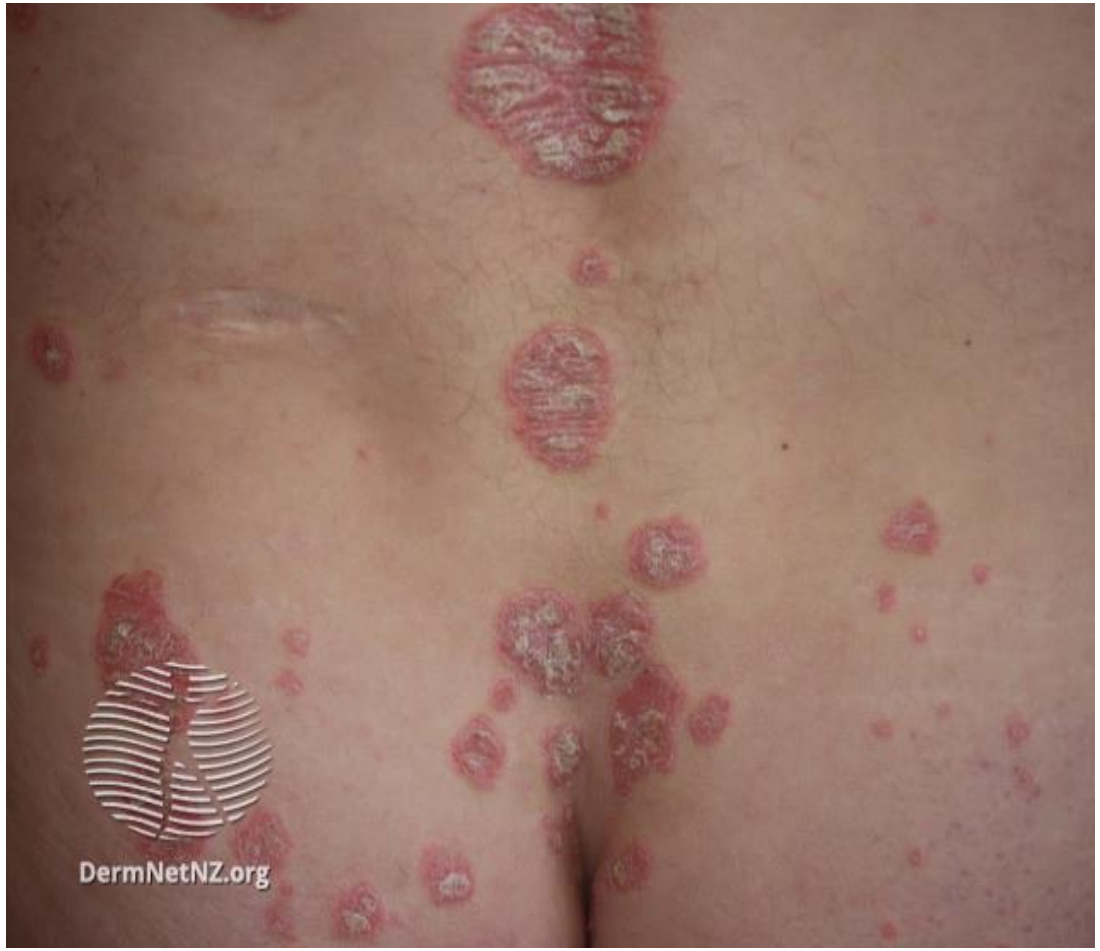
Psoriasis and Guttate Psoriasis

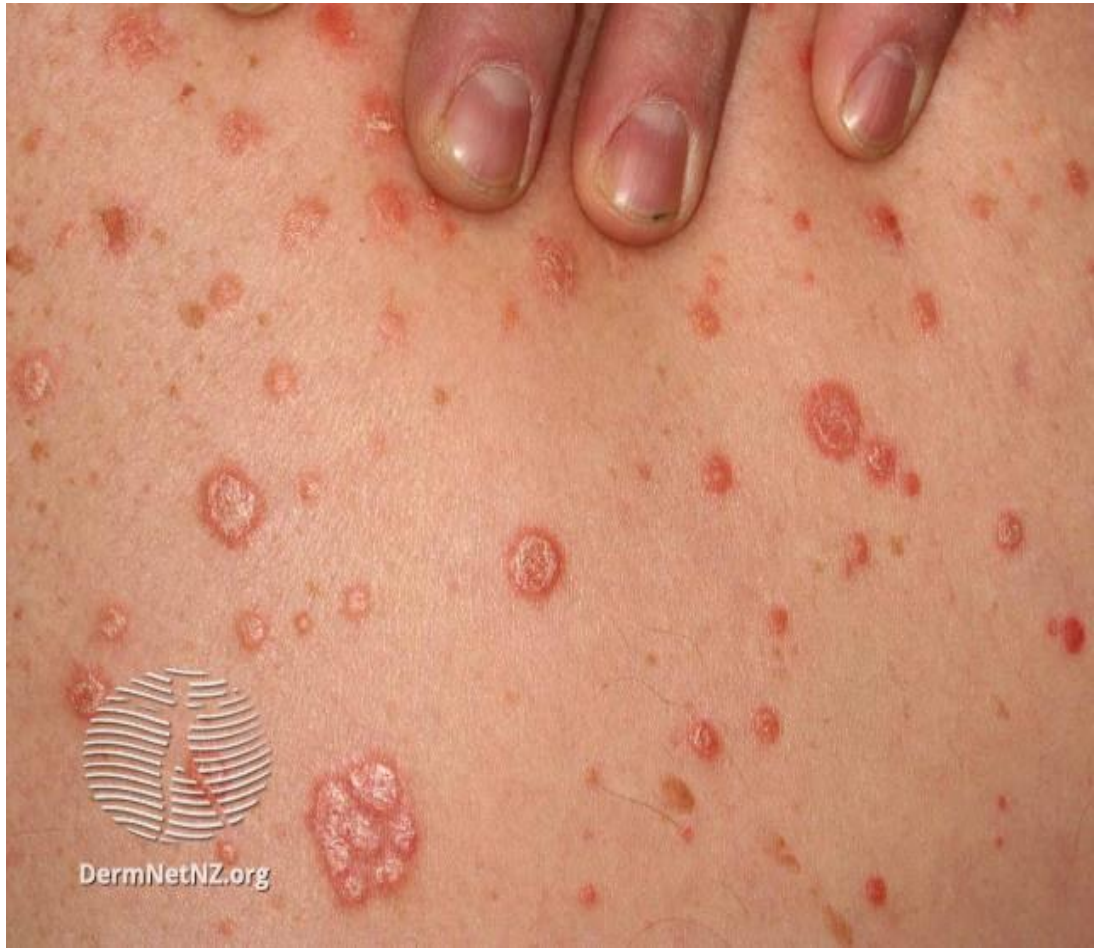




Skin, Bones, Hearts & Private Parts

Psoriasis and Guttate Psoriasis





https://dermnetnz.org/assets/Uploads/chronic-plaque-psoriasis-19__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg
https://dermnetnz.org/assets/Uploads/psoriasis-guttate-24__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG

Skin, Bones, Hearts & Private Parts

Psoriasis: Overview

- Chronic multisystem inflammatory disease that mostly affects skin and joints

- Classic disease
  - Pink to bright red well-demarcated plaques with silver scale o
  - Extensor surfaces of knees and elbows
  - Can present anywhere including scalp, umbilicus, gluteal cleft, trunk, nails, genitalia

- Inverse psoriasis
  - Shiny, glistening, pink red plaques in creases

- Guttate psoriasis
  - “Raindrop” papules and plaques on trunk and extremities
  - Frequently follows strep infections

- Koebner phenomenon – new skin plaques due to trauma
- Clinical diagnosis, biopsy if uncertain

Skin, Bones, Hearts & Private Parts

Psoriasis: PEST Score

Have you ever had a swollen joint (or joints)?

2. Has a provider ever told you that you have arthritis?

3. Do your fingernails or toenails have holes or pits?

4. Have you had pain in your heel?

5. Have you had a finger or toe that was completely swollen and painful for no apparent reason?

Skin, Bones, Hearts & Private Parts

Psoriasis: Treatment

- Topical therapies are first-line if limited BSA
  - Steroid (body part specific) BID x 2 weeks. Stop 1 week. Repeat once.
  - Betamethasone/calcipotriene (0.064%/0.005%) QD up to 8 weeks. Never on face/folds/genitals
  - Roflumalast 0.3% QD, 18 yo and up, Contraindicated: hepatic impairment
  - Tapinarof 1% QD, 18 yo and up
  - Tacrolimus or Pimecrolimus
    - BBW, greater than 2 yo

- If extensive disease and/or positive PEST
  - Consider referral to dermatology and/or Rheumatology
  - Narrow-band ultraviolet B phototherapy
  - Consider biologics

Skin, Bones, Hearts & Private Parts

Psoriasis: Treatment (cont.)

- Old pills
  - Acetretin, MTX, Cyclosporin
- Newer pills
  - PDE-4 inhibitor (Apremilast), TYK2 (Deucravacitinib)
- Biologics
  - TNF-Alpha, IL-17s, IL-23s, biosimilars

Skin, Bones, Hearts & Private Parts

Psoriasis: Treatment (cont)

- Ensure NO history:
  - Malignancy, CHF, IBD, CNS or demyelinating disorders, TB, Hepatitis, immunosuppression, active infection

- Labs prior to starting any biologic and yearly
  - Quant gold
  - Hepatitis
  - CBC with diff
  - CMP
  - HIV
  - **ASO Titer

- **Warnings: Increased skin cancer risk, serious infection risk, malignancy

Skin, Bones, Hearts & Private Parts

Drug Eruptions

Skin, Bones, Hearts & Private Parts

Drug Eruptions: Types

- Fixed drug eruption
- Exanthematous drug eruption
- Drug-induced hypersensitivity syndrome (DIHS), also called Drug-related eosinophilia with systemic symptoms (DRESS)
- Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN)
- Erythema multiforme

Skin, Bones, Hearts & Private Parts

Drug Eruptions

- Immediate vs. Delayed Reactions

- Immediate – occur less than 1 hour of the last dose
  - Urticaria
  - Angioedema
  - Anaphylaxis

- Delayed – occur after one hour; usually occur after 6 hours and occasionally up to weeks or months
  - Fixed drug eruptions
  - Exanthematous eruptions
  - Systemic reactions (DIHS, SJS, TEN)

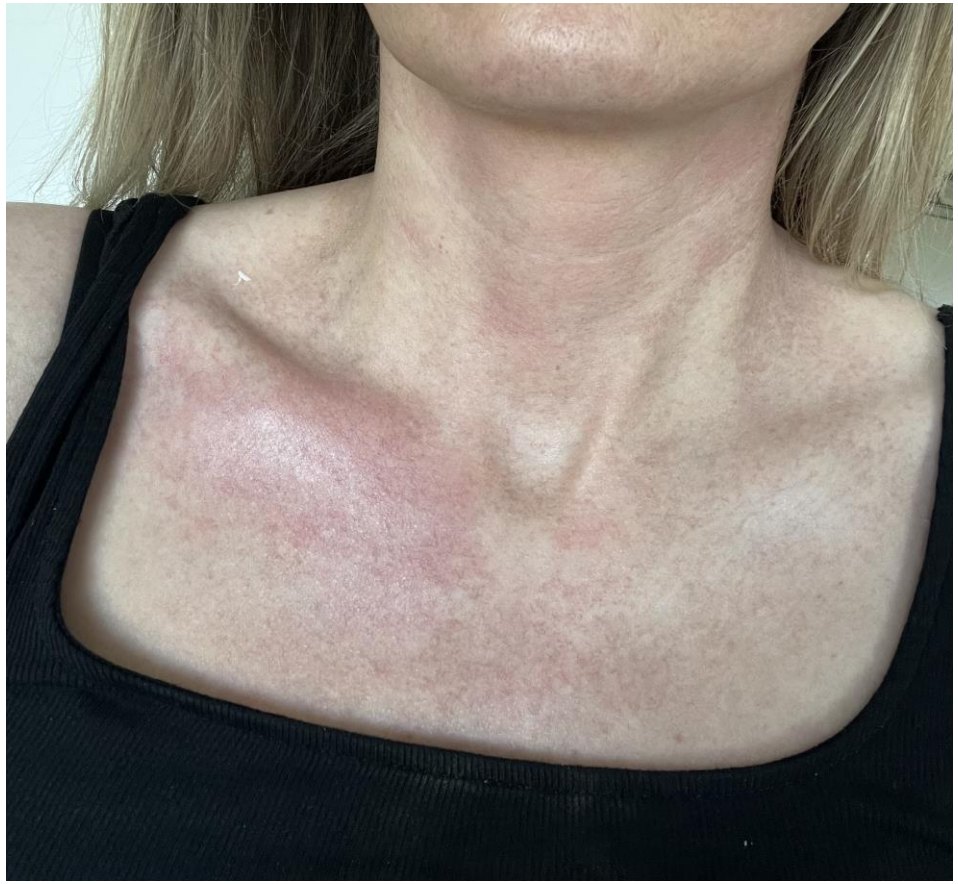
Skin, Bones, Hearts & Private Parts

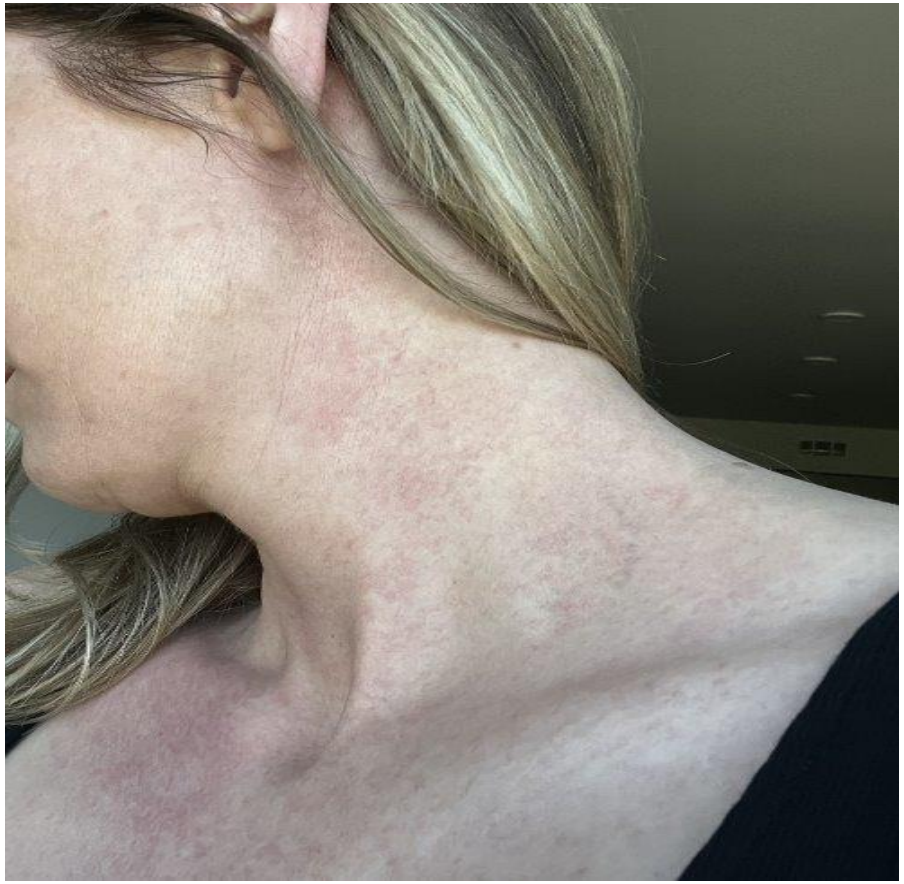
Drug Eruptions

- All types of drugs:
  - Instilled (eye drops, ear drops)
  - Inhaled (steroids, beta adrenergic)
  - Ingested (oral medications – capsules, tablets, syrup)
  - Inserted (suppositories)
  - Injected (IM, IV)
  - Incognito (alternative substances – “natural” medications, herbs, homeopathic, vitamins, over-the-counter, CBD)
  - Intermittent (any medications patients intermittently - cough, cold, sinus, pain relievers, etc.)
  - **Ask if pills have changed size, dose, shape or color

Skin, Bones, Hearts & Private Parts

Exanthematous Drug Eruption

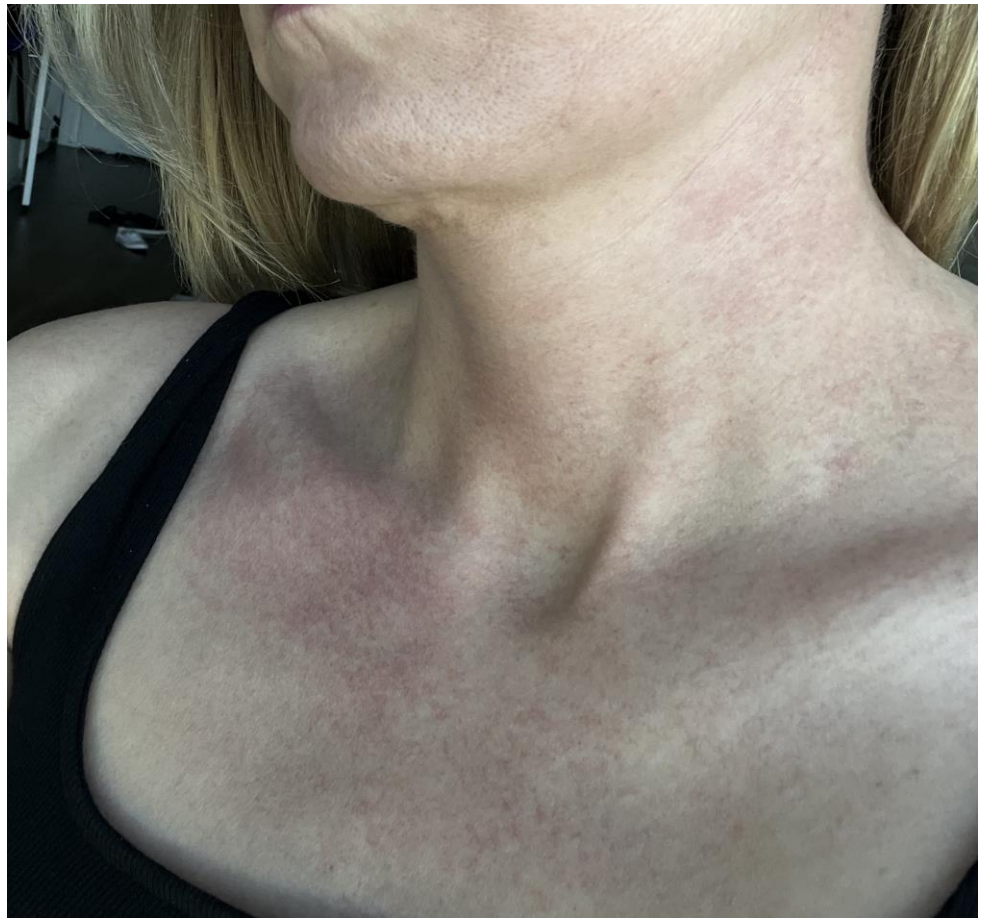




Skin, Bones, Hearts & Private Parts

Exanthematous Drug Eruption

- MPR "morbilliform"
- 1-5 mm diameter and may coalesce into plaques
- Chest, neck, upper trunk, spreads symmetrically



Treatment

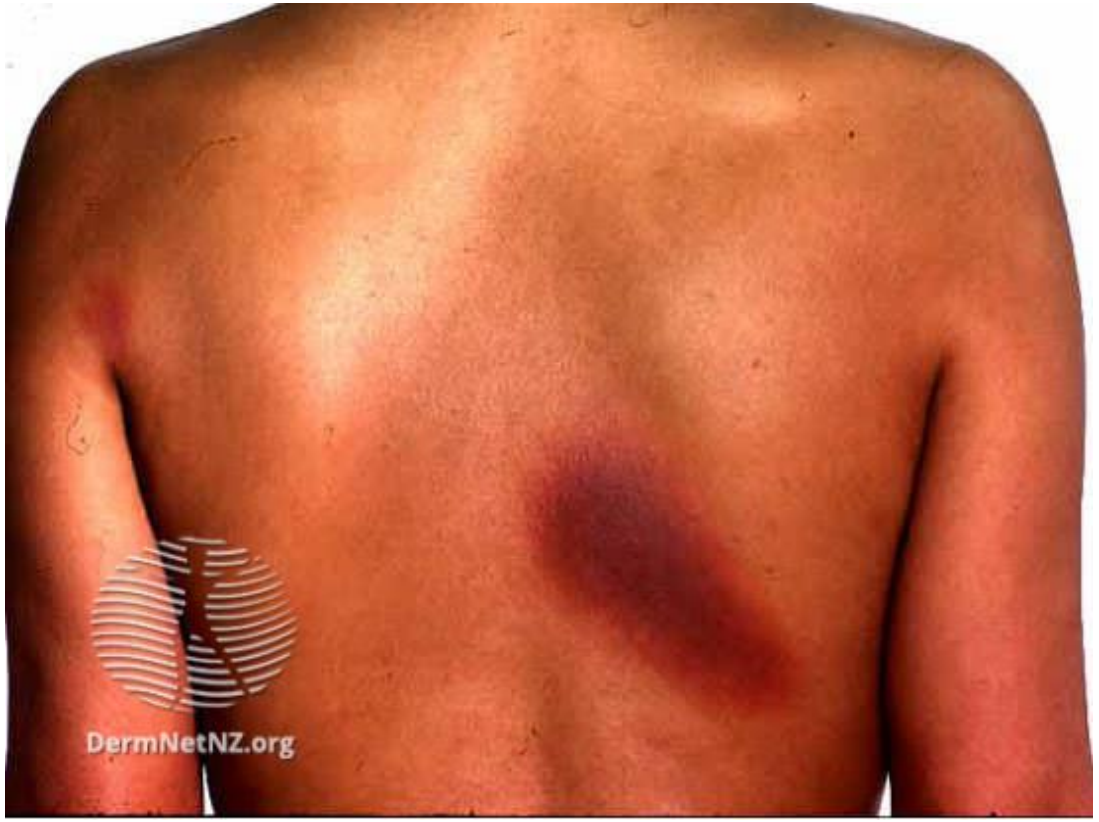
- Take careful history
- Consider biopsy
- Stop offending drug
- Oral Antihistamines (H1B and H2B), topical steroids, emollients

Skin, Bones, Hearts & Private Parts

Fixed Drug Eruption: Overview

- Characterized by the formation of a single or few round or oval patches or plaques
- recur at the same site when re-exposure to the drug occurs
- Most frequently affects mouth, genitalia, face and acral areas but can occur anywhere
- Occurs from 30 minutes to 8 hours after ingesting drug if previously sensitized
- Lesions become raised and then eventually form bullae and erosions
- Not typically accompanied by systemic symptoms
- Healing phase often involves a violet hue; post-inflammatory hyperpigmentation

Fixed Drug Eruption



https://dermnetnz.org/assets/Uploads/doctors/emergencies/images/drug3__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

https://dermnetnz.org/assets/Uploads/reactions/fde-lips__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

Fixed Drug Eruption: Common Offenders

- Phenolphthalein (laxatives)
- Tetracyclines: doxycycline, minocycline
- Metronidazole
- Sulfonamides (including Bactrim, sulfasalazine)
- Barbiturates
- NSAIDS
- Salicylates
- Yellow food coloring

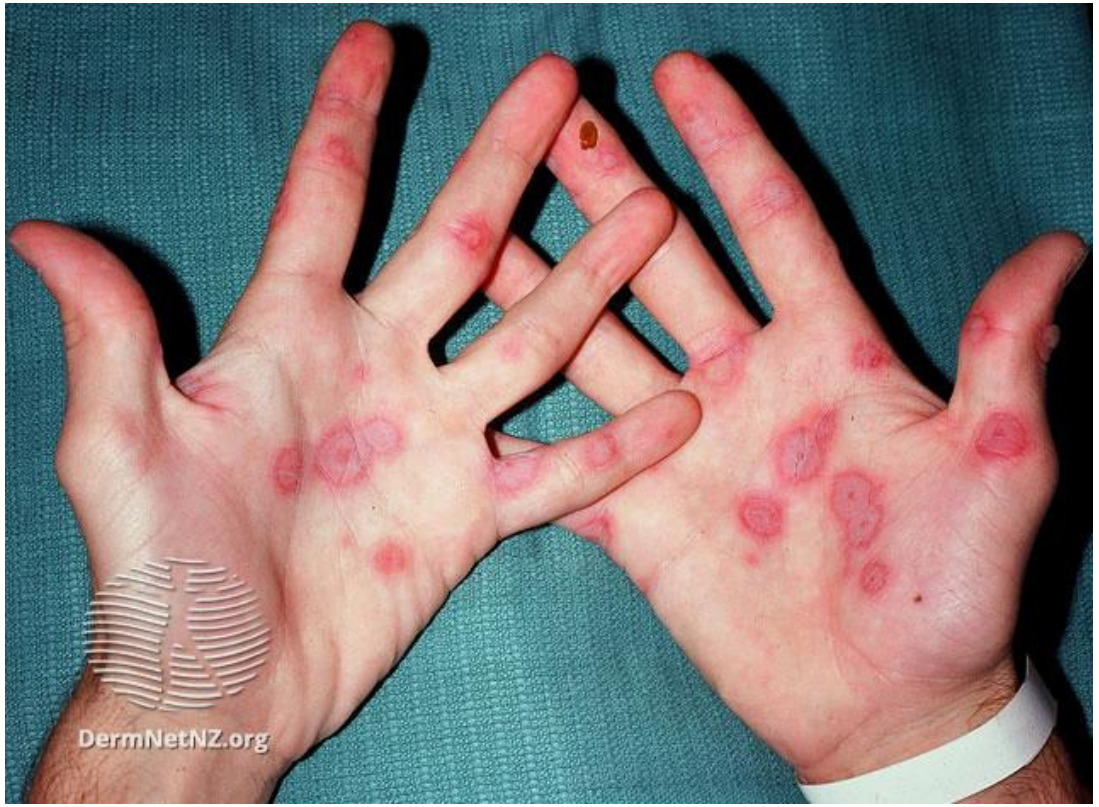
Skin, Bones, Hearts & Private Parts

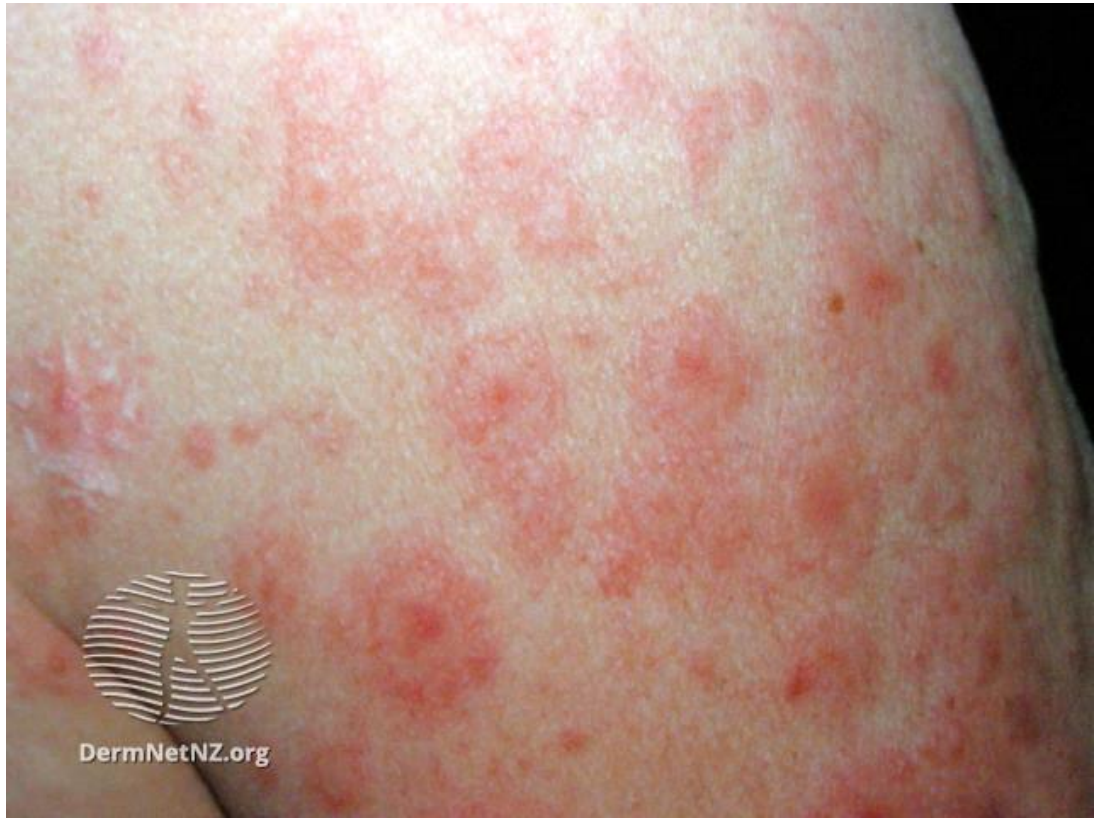
Fixed Drug Eruption: Treatment

- Resolution of lesions occurs days to weeks after drug is discontinued
- If non-eroded – treat with a potent topical corticosteroid ointment
- If eroded – treat with a protective or antimicrobial ointment; keep covered until reepithelialized
- Symptomatic treatment for pruritis/pain
- Refer to dermatology or ER if widespread or generalized

Skin, Bones, Hearts & Private Parts

Erythema Multiforme (EM)





https://dermnetnz.org/assets/Uploads/reactions/ac-em__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

https://dermnetnz.org/assets/Uploads/reactions/target-lesion-01__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

EM: Overview

- Immune-mediate skin reaction
- Self-limited
- Most commonly occurs < 40 years
- **90% associated with infections – HSV**, M. pneumoniae
- <10% caused by medications – NSAIDS, antibiotics, antiepileptics
- Usually begin on extremities; may spread to trunk
- Distinct disease from Stevens-Johnson

Skin, Bones, Hearts & Private Parts

EM: Overview (cont)

- Initially begins as pink or red papules that enlarge to become plaques
- May burn or itch
- Within 3-5 days, they develop into the classic **target** (iris) lesion: round lesion of 3 concentric circles including a dark center surrounded by a lighter pink ring. Both of those are surrounded by a red ring.
- Often no identifying cause
- **May be associated with reactivation of HSV,** other viral illness
- May have up to 6 episodes/year for a period of 6-10 years
- Prophylactic treatment if >5 episodes of HSV or EM per year
- Persistence is rare – think IBD, malignancies

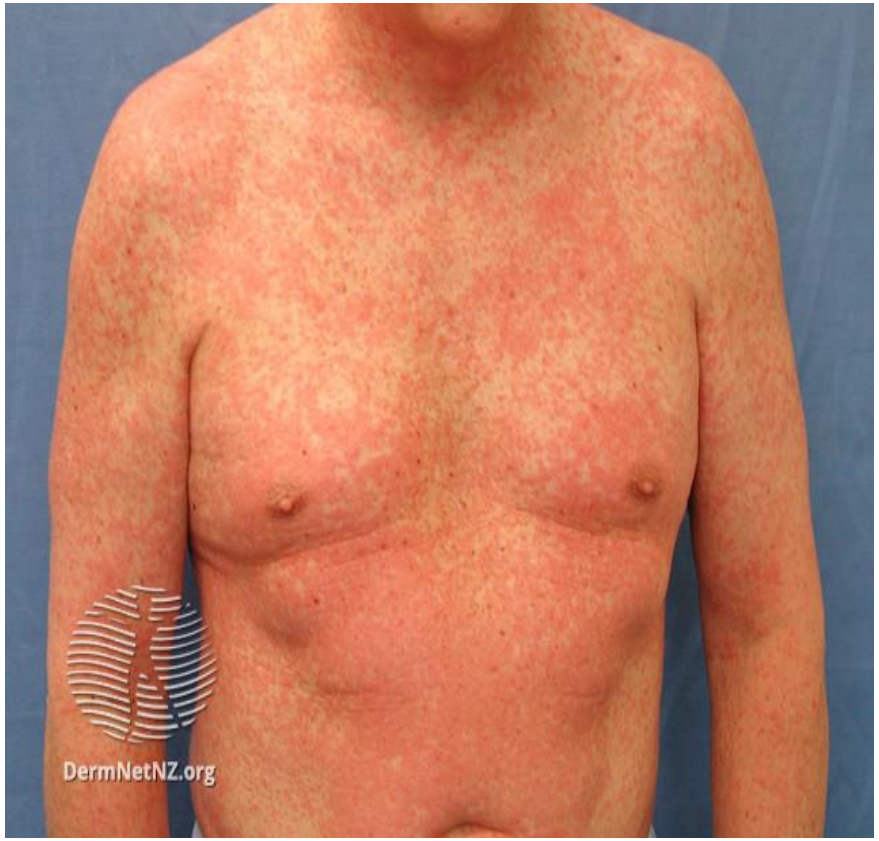
Skin, Bones, Hearts & Private Parts

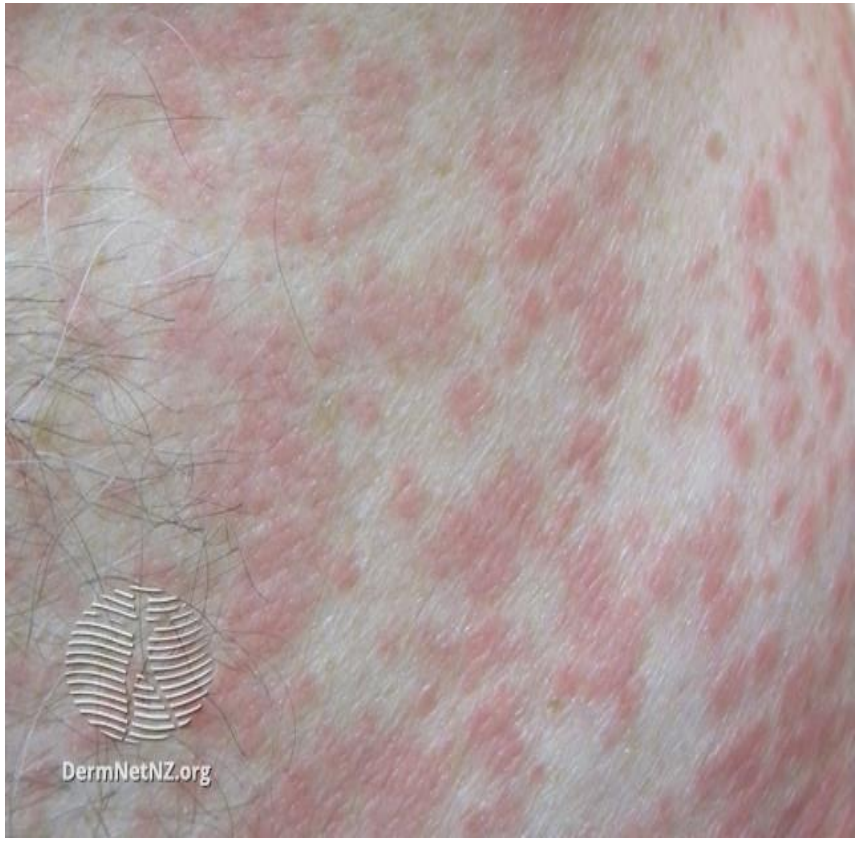
EM: Treatment

- Most cases require no further testing
- Labs to r/o other diagnoses
- Skin biopsy if unclear
- If caused by recent infection or medication, treat the infection or discontinue the drug
- If uncomplicated, treat symptomatically with topical steroids or antihistamines
- If HSV is causative agent – oral acyclovir or valacyclovir

Skin, Bones, Hearts & Private Parts

Drug Eruption: Exanthematous





https://dermnetnz.org/assets/Uploads/reactions/morbilliform1__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg
https://dermnetnz.org/assets/Uploads/reactions/morbilliform2__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

Drug Eruption: Exanthematous

- 90% of all skin drug reactions
- 2% of new prescriptions
- Limited to the skin
- Erythematous macules and papules appear on the trunk and spread to the extremities symmetrically
- May be accompanied by pruritus and mild fever
- Timing: 7-10 days after drug initiation in 1st episode; 24-48 hours in repeat exposures
- MORBILLIFORM RASH

Skin, Bones, Hearts & Private Parts

Drug Eruption: Exanthematous

- Beta-lactam antibiotics (penicillin, cephalosporins)
- Sulfonamindes
- Allopurinol
- Anti-epileptic drugs
- NSAIDS
- Others including herbal and natural therapies

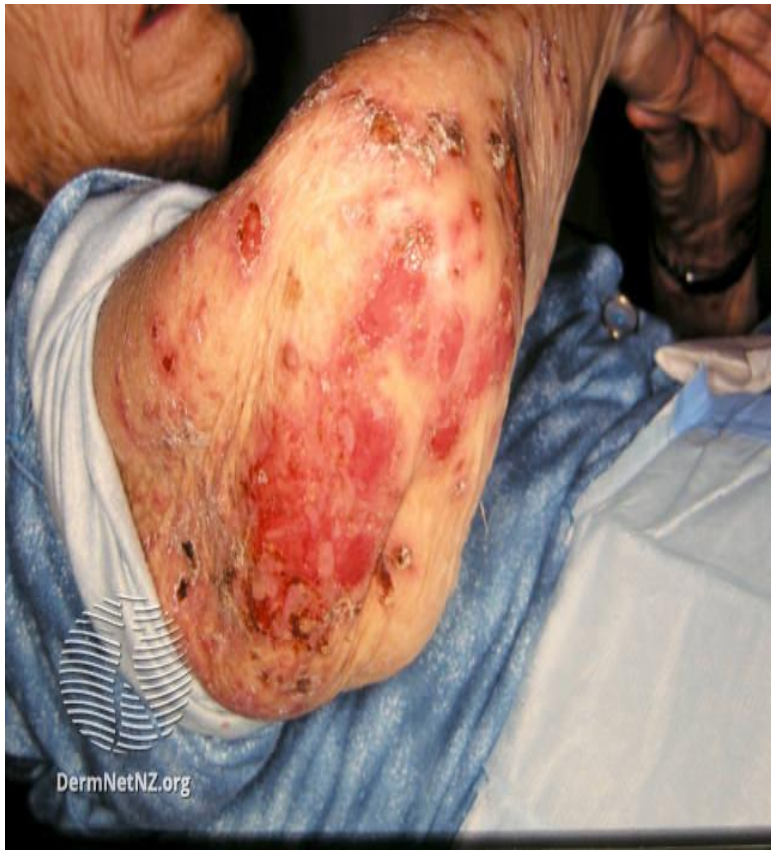
Skin, Bones, Hearts & Private Parts

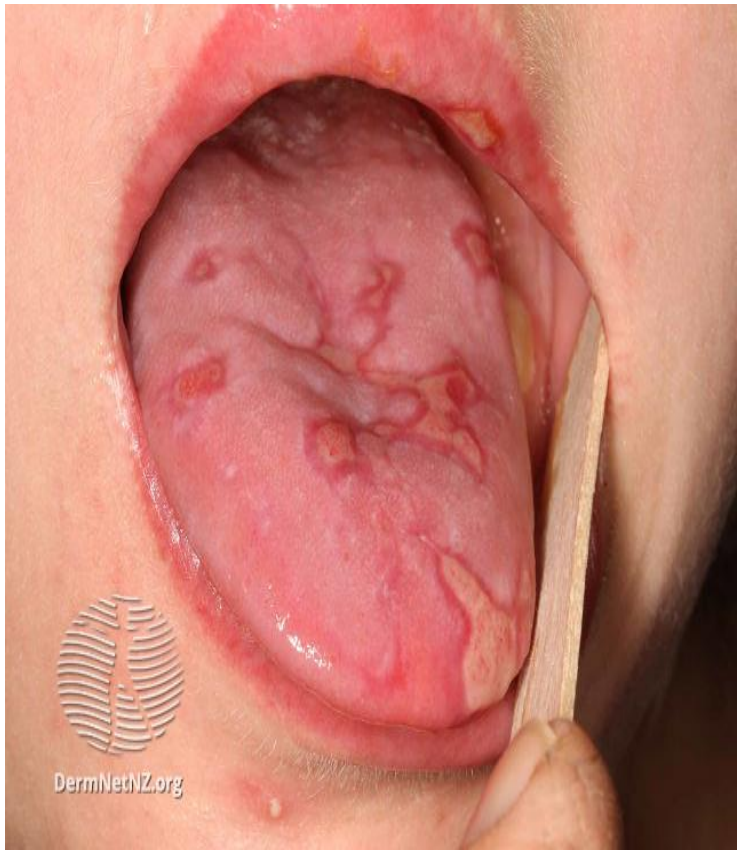
Drug Eruption: Exanthematous

- Resolves spontaneously after medication is stopped – usually few days to 1 week
- May continue the medication safely if the eruption is not too severe and the medication has no effective substitution
- May experience scaling/desquamation in healing
- No long-term sequelae
- Treatment: topical steroids, emollients, oral antihistamines, reassurance
- Signals of more severe reaction:
  - Erythroderma
  - High fever
  - Any mucosal involvement
  - Skin tenderness
  - Blistering, Pustules
  - Evidence of other organ involvement (kidneys, liver, lungs, blood)
  - **ANY of the above signals more severe reaction

Skin, Bones, Hearts & Private Parts

SJS/TEN

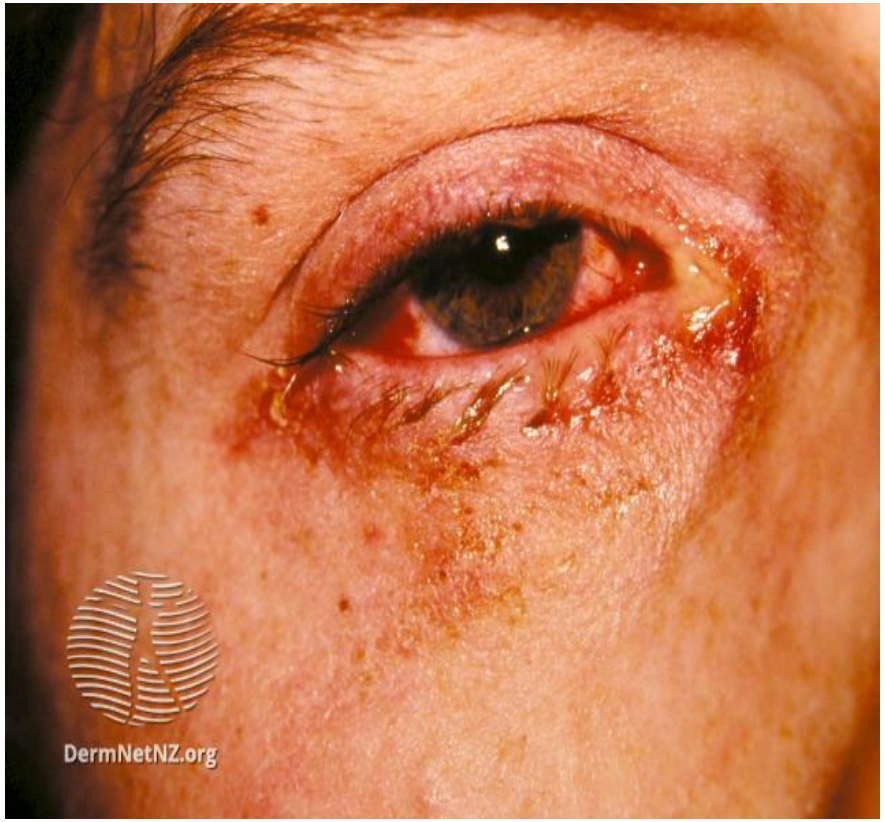


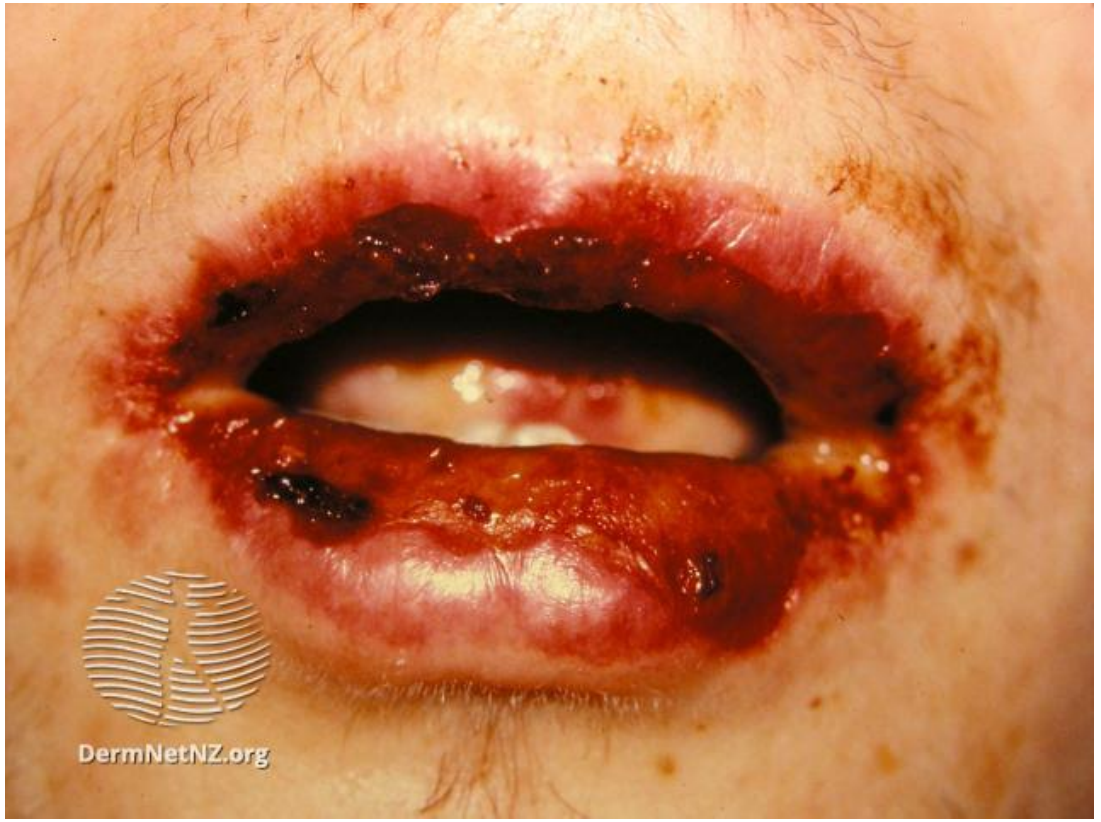


https://dermnetnz.org/assets/Uploads/sjs-ten-trunk-164__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG
https://dermnetnz.org/assets/Uploads/sjs-ten-arm-90__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG
https://dermnetnz.org/assets/Uploads/sjs-ten-oral-10__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG

Skin, Bones, Hearts & Private Parts

SJS/TEN



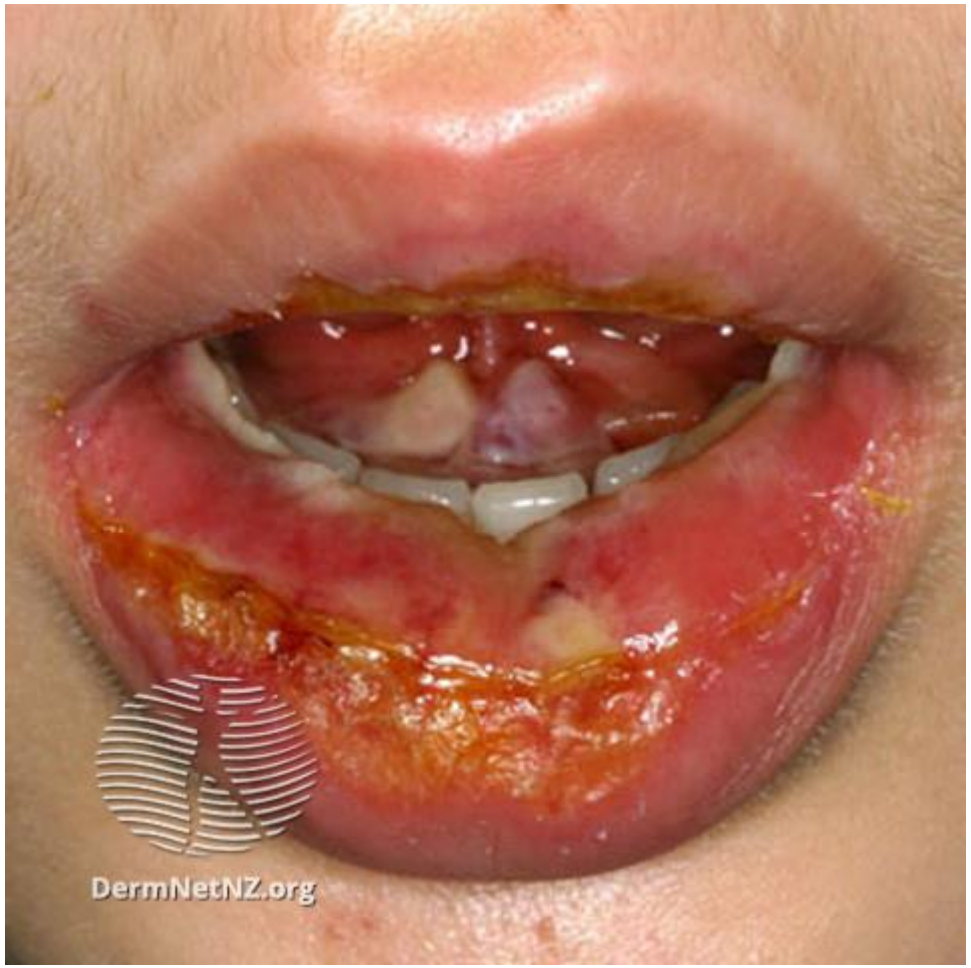


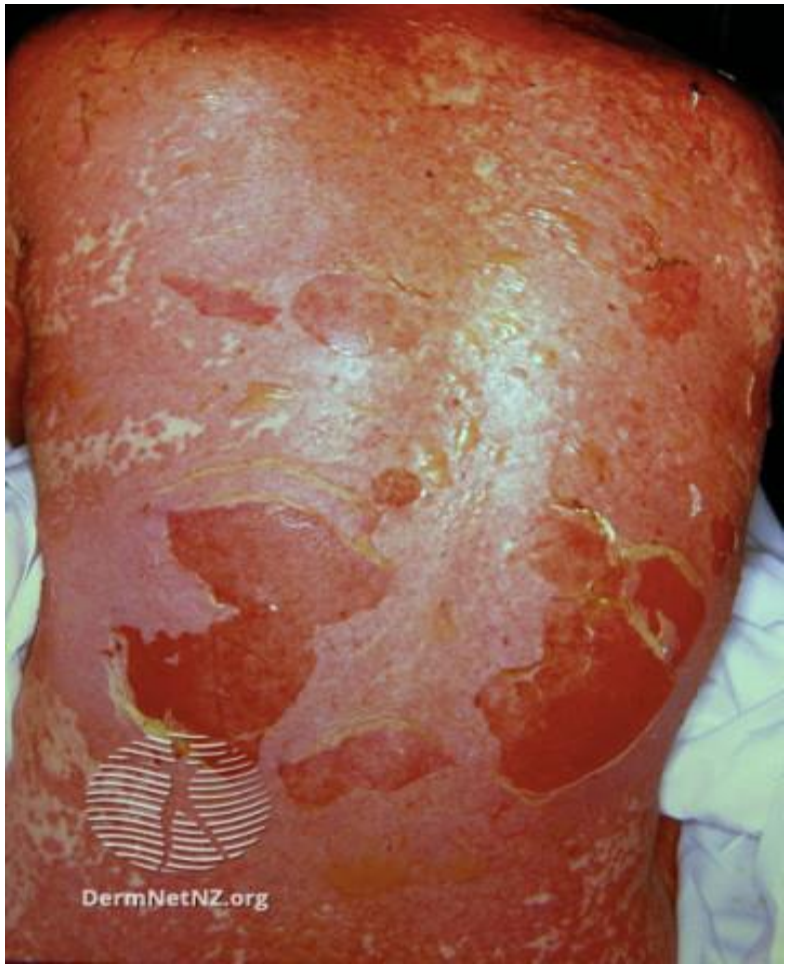
https://dermnetnz.org/assets/Uploads/sjs-ten-ocular-27__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG

https://dermnetnz.org/assets/Uploads/sjs-ten-oral-3__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG

Skin, Bones, Hearts & Private Parts

SJS/TEN



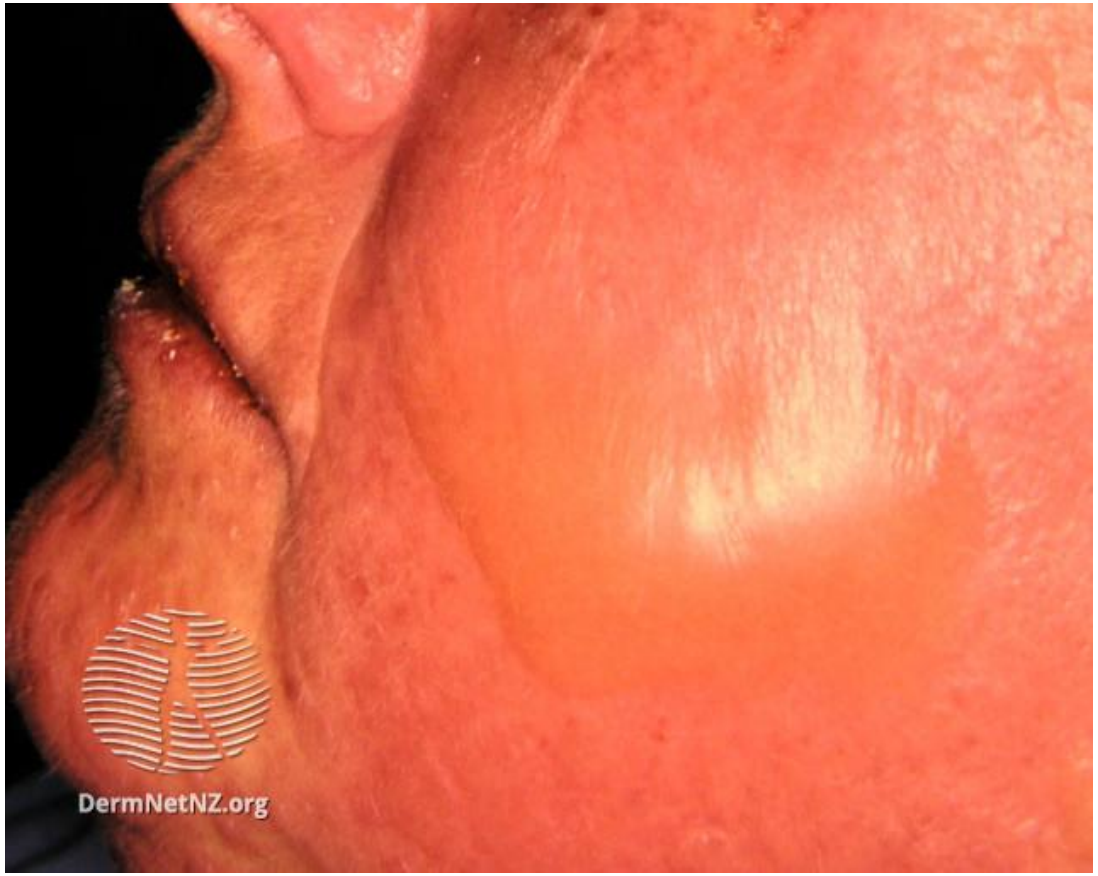


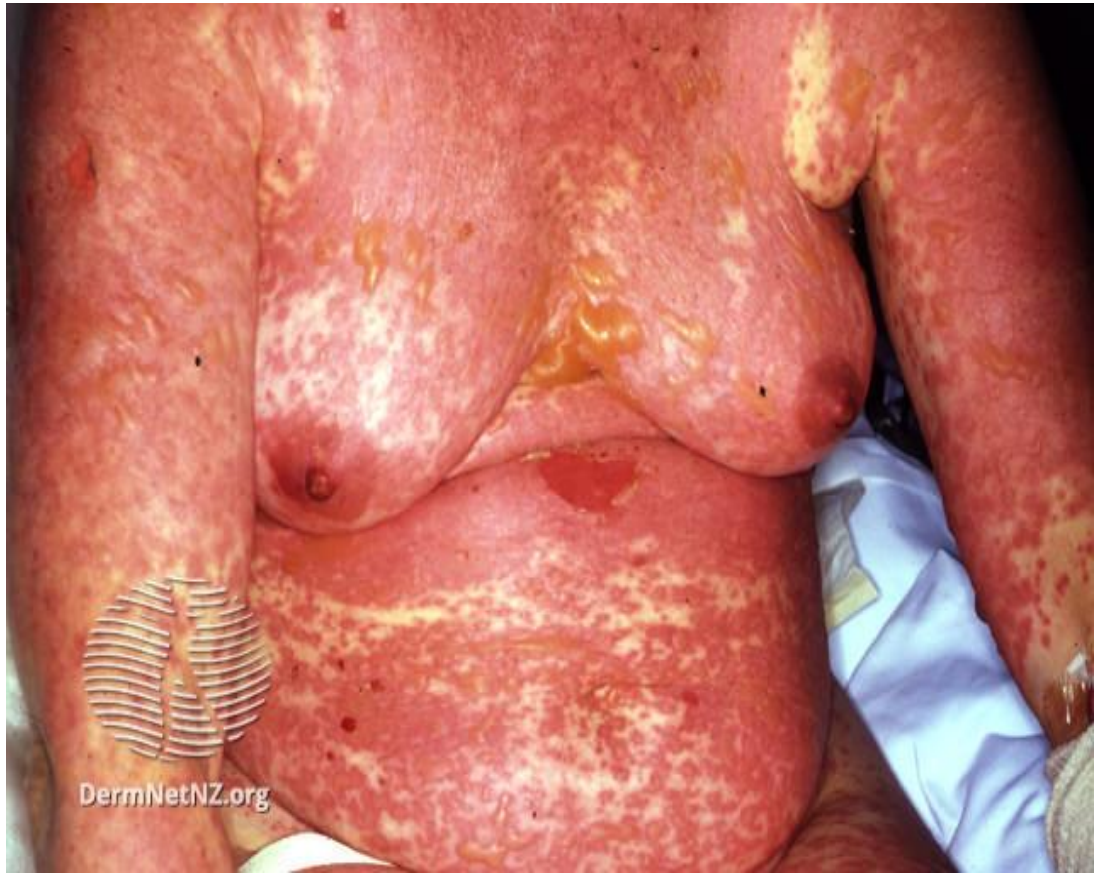
https://dermnetnz.org/assets/Uploads/reactions/s/sjs3__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

https://dermnetnz.org/assets/Uploads/reactions/ten1__WatermarkedWyJXYXRlcm1hcmtlZCJd.jpg

Skin, Bones, Hearts & Private Parts

SJS/TEN





https://dermnetnz.org/assets/Uploads/sjs-ten-face-34__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG
https://dermnetnz.org/assets/Uploads/sjs-ten-trunk-154__WatermarkedWyJXYXRlcm1hcmtlZCJd.JPG

Skin, Bones, Hearts & Private Parts

SJS/TEN: Overview

- Rare, acute, serious, **potentially fatal** skin reaction almost always to medications
- **SJS < 10% BSA, TEN 10-30% BSA**
- > 200 meds have been reported to be associated with SJS/TEN
  - 40% are antibiotics **(frequently BACTRIM)**
  - Usually systemic meds but has been reported with topicals
  - More often in drugs with long half-lives
  - Rarely associated with vaccinations

Skin, Bones, Hearts & Private Parts

SJS/TEN: Overview

- **Prodrome** – several days that resembles a URI or “flu-like illness” with fever, ST, runny nose, cough, red eyes, conjunctivitis, body aches
- Prodrome followed by abrupt onset of a **tender/painful skin rash** (**dusky red to purpuric macules** which look like target lesions) which progress to **flaccid blisters.** Begins on the trunk and spreads rapidly to face and limbs over hours to days.
- Usually reaches its maximum by 4 days.
- **Nicolsky’s sign**: the necrotic epidermis detaches with lateral pressure

Skin, Bones, Hearts & Private Parts

SJS/TEN: Mucosal Envolvement

- Often precedes skin eruption
- Frequently involves mouth, eyes and genital mucosa – “hemorrhagic crusts of the lips”
- Eye involvement will lead to permanent sequelae including blindness

Skin, Bones, Hearts & Private Parts

SJS/TEN: Common Offenders

- Sulfa antibiotics **(Bactrim)**, sulfasalazine
- Tetracyclines
- Allopurinol
- Anticonvulsants (carbamazepine, lamotrigine, phenobarbital, phenytoin)
- NSAIDS
- Nevirapine

Skin, Bones, Hearts & Private Parts

SJS/TEN: Treatment

- **Dermatologic Emergency**
- Early recognition and discontinuation of the offending med is critical
- Mortality 5-12% for SJS; > 20% for TEN
- Poor prognosis: increasing age, significant comorbid conditions (DM, HTN, HIV, immunocompromised)
- SCORTEN Criteria
- Supportive care in **ICU or burn unit**
- Multidisciplinary care – derm, ophtho, CCM

Skin, Bones, Hearts & Private Parts

Q & A

Skin, Bones, Hearts & Private Parts