

Skirting Steroids in Atopic Dermatitis

Dangers and Side Effects of Steroid Exposure
in AD Patients

Peter Lio, MD

Christopher Bunick, MD, PhD

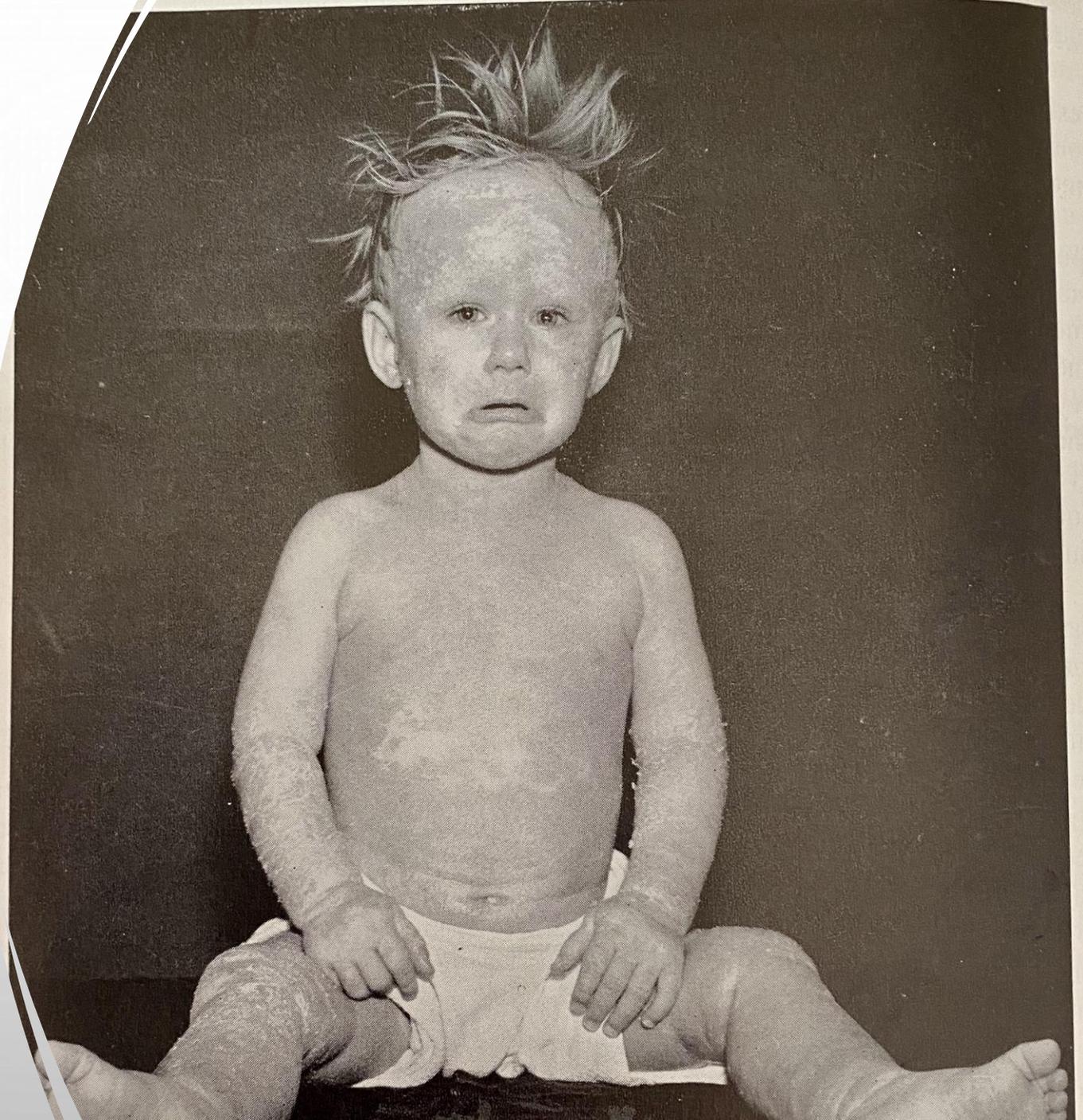


Supported by an educational grant from
Arcutis Biotherapeutics, Inc.

DISCLOSURES

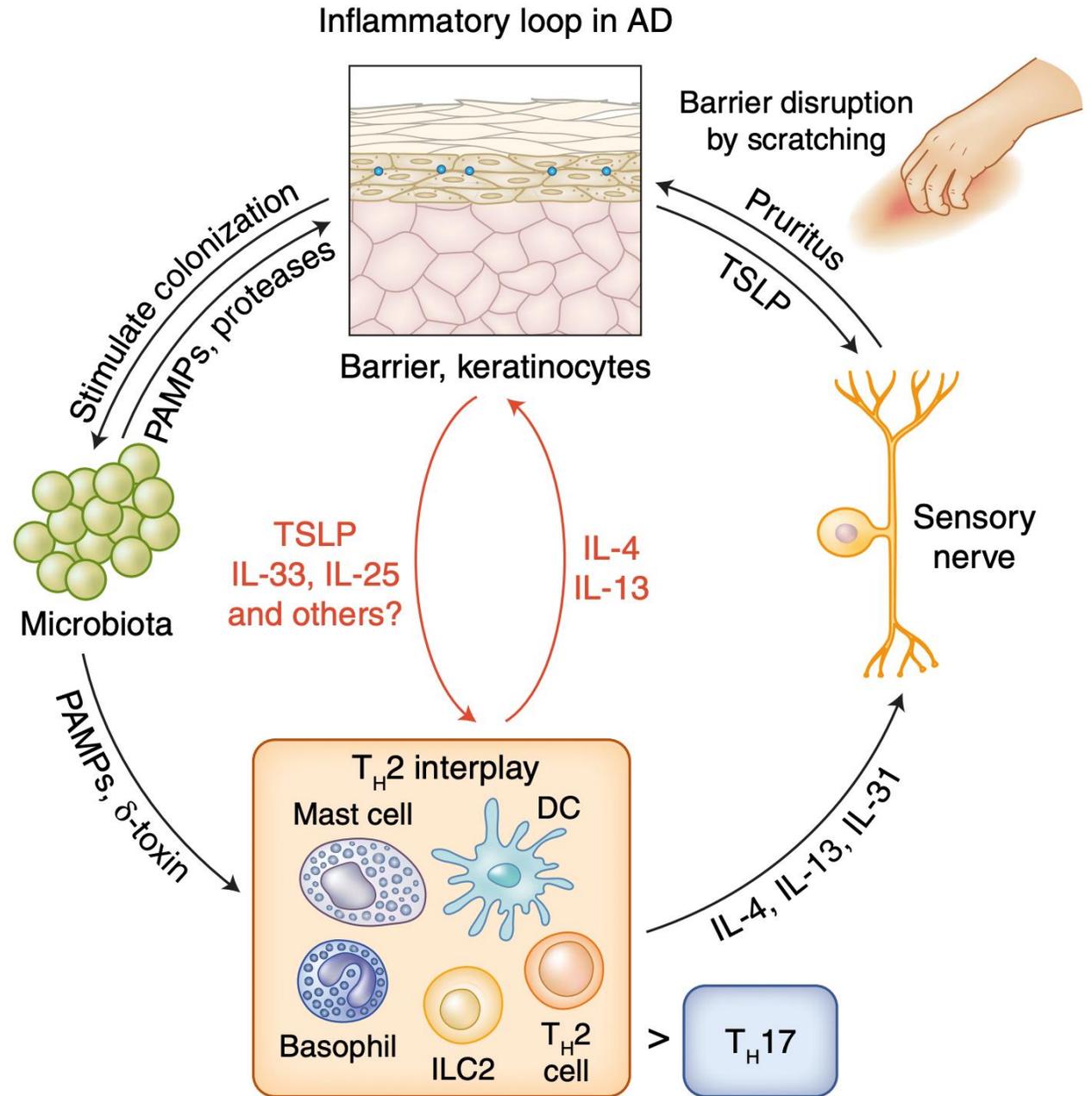
Relationship	Manufacturer
Speaker	Regeneron/Sanofi Genzyme, Pfizer, Eli Lilly, LEO, Galderma, Incyte, L'Oreal
Advisory Board	Almirall, ASLAN Pharmaceuticals, Dermavant, Regeneron/Sanofi Genzyme, Pfizer, LEO Pharmaceuticals, AbbVie, Eli Lilly, Microcos, L'Oreal, Pierre-Fabre, Johnson & Johnson, Level Ex, KPAAway, Unilever, Menlo Therapeutics, Theraplex, IntraDerm, Exeltis, AOBiome, Realm Therapeutics, Altus Labs, Galderma, Verrica, Arbonne, Amyris, Bodewell, YobeeCare, Burt's Bees, My-Or Diagnostics, Kimberly-Clark
Research	AOBiome, Regeneron/Sanofi Genzyme, and AbbVie
Patent Holder	Theraplex AIM (Patent Pending)
Stockholder	Microcos, YobeeCare, and Altus Labs, KPAAway, LearnSkin

AD = MISERY



From: Pillsbury DM, Kligman AM, Shelley WB. A manual of cutaneous medicine, by Donald M. Pillsbury, Walter B. Shelley [and] Albert M. Kligman. Philadelphia. Saunders, 1961.

LOOPS



• THE EPITHELIAL IMMUNE MICROENVIRONMENT (EIME) IN ATOPIC DERMATITIS AND PSORIASIS. DAINICHI T, KITO A, OTSUKA A, NAKAJIMA S, NOMURA T, KAPLAN DH, KABASHIMA K. NAT IMMUNOL. 2018 DEC;19(12):1286-1298.

TYPE OF TREATMENT MAY MATTER

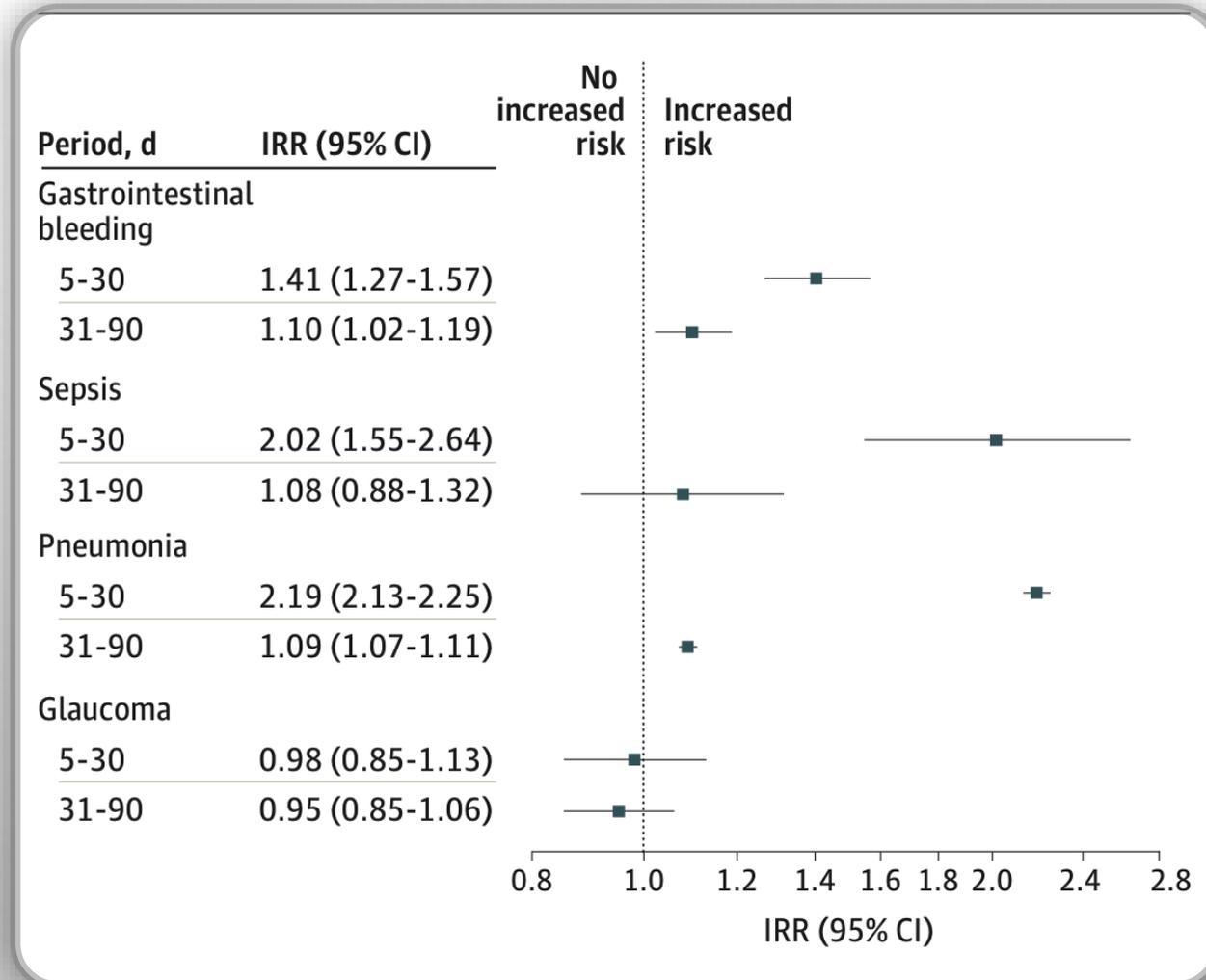
- WE KNOW SOME THINGS MIGHT EVEN MAKE IT WORSE!

- Systemic Corticosteroids -- almost no longer used/prescribed/recommended in AD
- Might be used in short courses to control very severe flares of eczema
- Long-term side effects are associated with prolonged use



Image attribution: "P. Lio generated this text in part with GPT-3, OpenAI's large-scale language-generation model. Upon generating draft language, the author reviewed, edited, and revised the language to their own liking and takes ultimate responsibility for the content of this publication."

ASSOCIATION BETWEEN EXPOSURE TO CORTICOSTEROID BURSTS AND ADVERSE OUTCOMES



Yao TC, Wang JY, Chang SM, Chang YC, Tsai YF, Wu AC, Huang JL, Tsai HJ. Association of Oral Corticosteroid Bursts With Severe Adverse Events in Children. JAMA pediatrics. 2021 Apr 19.

ASSOCIATION BETWEEN EXPOSURE TO CORTICOSTEROID BURSTS AND ADVERSE OUTCOMES

“TREATMENT WITH CORTICOSTEROID BURSTS IS ASSOCIATED WITH A 1.4- TO 2.2-FOLD INCREASED RISK OF GI BLEEDING, SEPSIS, AND PNEUMONIA WITHIN THE FIRST MONTH AFTER INITIATION OF CORTICOSTEROID THERAPY AMONG CHILDREN.

CLINICIANS SHOULD BE AWARE OF THESE RARE BUT POTENTIALLY SERIOUS ADVERSE EVENTS ASSOCIATED WITH USE OF CORTICOSTEROID BURSTS FOR CHILDREN, PARTICULARLY DURING THE FIRST MONTH AFTER CORTICOSTEROID INITIATION.”

JTF + AAD GUIDELINES

<div style="display: flex; justify-content: space-around;"> <div style="background-color: #e67e22; color: white; padding: 5px; text-align: center;">MILD</div> <div style="background-color: #c0392b; color: white; padding: 5px; text-align: center;">MODERATE</div> <div style="background-color: #8e44ad; color: white; padding: 5px; text-align: center;">SEVERE</div> </div>	<p>SYSTEMIC CORTICOSTEROIDS We suggest against systemic corticosteroids for all patients with atopic dermatitis</p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; background-color: white;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; background-color: white;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; background-color: #c0392b; color: white; display: flex; align-items: center; justify-content: center;">X</div> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; background-color: white;"></div> </div> <p>Conditional against</p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="color: #f1c40f;">★</div> <div style="color: #f1c40f;">★</div> <div style="color: white;">★</div> <div style="color: white;">★</div> </div> <p>Low certainty evidence</p>
---	--	---	--

<p>Immuno-suppressants</p> <p>5.1</p>	<p>Systemic corticosteroids (eg, prednisone)</p>	<p>On-label</p>	<p>For adults with AD, we conditionally recommend against systemic corticosteroids. Remarks: Their use should be reserved exclusively for acute, severe exacerbations and as a short-term bridge therapy to other systemic, corticosteroid-sparing therapy.</p>	<p>Conditional</p>	<p>Low</p>
---------------------------------------	--	-----------------	--	--------------------	------------

Chu DK, Schneider L, Asiniwasis RN, Boguniewicz M, De Benedetto A, Ellison K, Frazier WT, Greenhawt M, Huynh J, Kim E, LeBovidge J. Atopic dermatitis (eczema) guidelines: 2023 American Academy of Allergy, Asthma and Immunology/American College of Allergy, Asthma and Immunology Joint Task Force on Practice Parameters GRADE–and Institute of Medicine–based recommendations. *Annals of Allergy, Asthma & Immunology*. 2023 Dec 18.

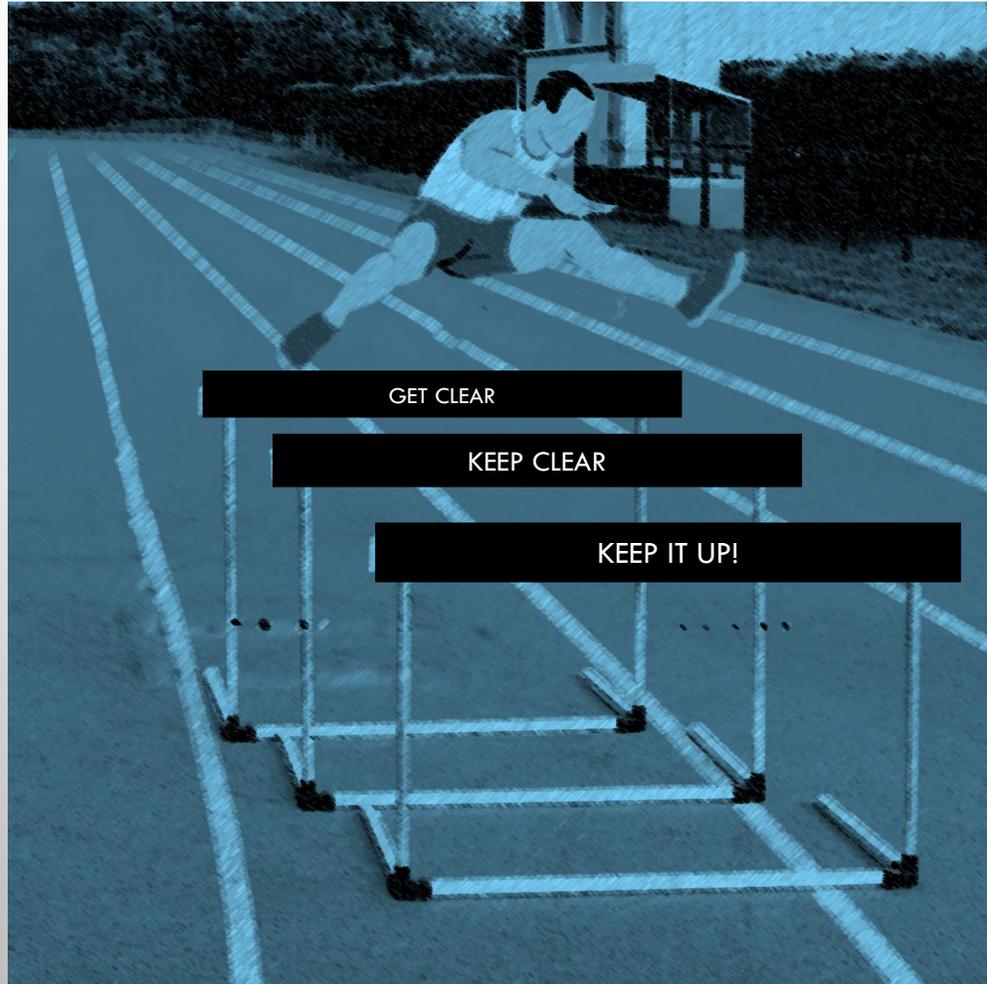
Davis DM, Drucker AM, Alikhan A, Bercovitch L, Cohen DE, Darr JM, Eichenfield LF, Frazer-Green L, Paller AS, Schwarzenberger K, Silverberg JI. Guidelines of care for the management of atopic dermatitis in adults with phototherapy and systemic therapies. *Journal of the American Academy of Dermatology*. 2024 Feb 1;90(2):e43-56.

ADVERSE EFFECTS OF TCS

“THE INCIDENCE OF ADVERSE EVENTS WITH TCS IS LOW. THOUGH TCS ARE ASSOCIATED WITH A VARIETY OF CUTANEOUS SIDE EFFECTS (IE, PURPURA, TELANGIECTASIA, HYPOPIGMENTATION, FOCAL HYPERTRICHOSIS, ACNEIFORM ERUPTIONS, AND STRIAE), SKIN ATROPHY IS GENERALLY THE MOST CONCERNING FOR PHYSICIANS AND PATIENTS.”

“AN ASSOCIATION WITH CATARACTS OR GLAUCOMA IS UNCLEAR, BUT MINIMIZING PERIOcular STEROID USE IS ADVISED. HYPOTHALAMIC-PITUITARY-ADRENAL AXIS SUPPRESSION CAN ALSO OCCUR WITH PROLONGED, CONTINUOUS USE OF HIGH POTENCY TCS ON LARGE SURFACE AREAS...”

3 GREAT HURDLES

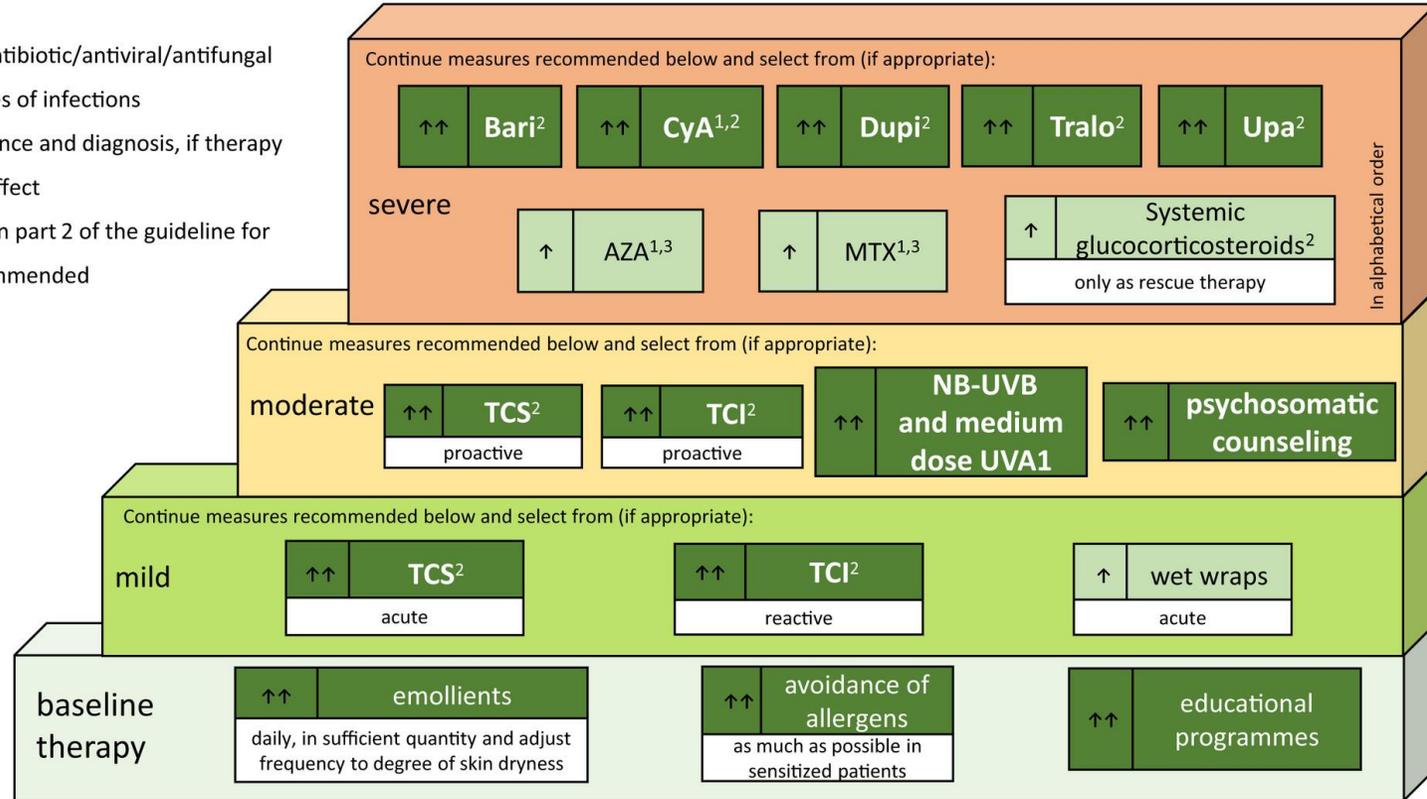


- 1) Get Clear
- 2) Keep Clear—Safely
- 3) Keep It Up

European guideline (EuroGuiDerm) on Eczema

Stepped-care plan for adults with atopic eczema

- Add antiseptic/antibiotic/antiviral/antifungal treatment in cases of infections
- Consider compliance and diagnosis, if therapy has insufficient effect
- Refer to Table 2 in part 2 of the guideline for TCS classes recommended



¹ refer to guideline text for restrictions, ² licensed indication, ³ off-label treatment

↑↑ (dark green) strong recommendation for the use of an intervention / ↑ (light green) weak recommendation for the use of an intervention
 For definitions of disease severity, acute, reactive, proactive see section 'VII' and section 'Introduction to systemic treatment' of the EuroGuiDerm Atopic Eczema Guideline

Abro= abrocitinib; AZA=azathioprine; Bari=baricitinib; CyA=ciclosporin; Dupi=dupilumab; MTX=methotrexate; TCl=topical calcineurin inhibitors; TCS= topical corticosteroids; Tralo=tralokinumab; Upa=upadacitinib; UVA1=ultraviolet A1; NB-UVB=narrow-band ultraviolet B

100% Agreement

Acad Dermatol Venereol, Volume: 36, Issue: 9, Pages: 1409-1431, First published: 18 August 2022, DOI: (10.1111/jdv.18345)

Information Classification: General

Symbols	Implications (adapted from GRADE ¹)
↑↑	We believe that all or almost all informed people would make that choice.
↑	We believe that most informed people would make that choice, but a substantial number would not.
0	We cannot make a recommendation.
↓	We believe that most informed people would make a choice against that intervention, but a substantial number would not.
↓↓	We believe that all or almost all informed people would make a choice against that choice.
	No recommendation.

JTF GUIDELINES

INTERVENTION Treatment or category of treatments considered	SEVERITY Severity of dermatitis that this recommendation applies to	RECOMMENDATION Text summary of recommendation	STRENGTH The strength of the recommendation	CERTAINTY GRADE rating for the certainty of evidence	
TOPICAL TREATMENTS  If refractory to moisturizers	MILD MODERATE SEVERE	PRESCRIPTION MOISTURIZERS We suggest against using prescription moisturizers rather than a fragrance-free over-the-counter moisturizer	 Conditional against	 Low certainty evidence	
	MILD MODERATE SEVERE	TOPICAL CORTICOSTEROIDS We recommend adding a topical corticosteroid Age 3mo+	 Strong in favor	 High certainty evidence	
	MILD MODERATE SEVERE	TOPICAL CALCINEURIN INHIBITORS We recommend adding a topical calcineurin inhibitor Age 3mo+	 Strong in favor	 High certainty evidence	
	MILD MODERATE	TOPICAL PDE4 INHIBITORS We suggest adding crisaborole Age 3mo+	 Conditional in favor	 Moderate certainty evidence	
	MILD MODERATE	TOPICAL JAK INHIBITORS We suggest against adding topical ruxolitinib Age 12yo+	 Conditional against	 Low certainty evidence	
	localized lesions refractory to mid to high potency topical treatment	MILD MODERATE SEVERE	APPLICATION FREQUENCY We suggest applying mid to high potency topical medicines once per day over twice per day	 Conditional in favor	 Low certainty evidence
		MILD MODERATE SEVERE	OCCLUSIVE APPLICATION (WET WRAPS) We suggest a time and body surface area-limited trial of occlusive low to mid potency topical steroid	 Conditional in favor	 Very low certainty evidence
		MILD MODERATE SEVERE	TOPICAL ANTIMICROBIALS We suggest against adding topical antimicrobials to topical anti-inflammatories in patients with no clear signs of infection	 Conditional against	 Very low certainty evidence
		MILD MODERATE SEVERE	MAINTENANCE OF REMISSION We recommend use of proactive therapy to areas that flare with a topical calcineurin inhibitor or mid potency topical steroid	 Strong in favor	 Moderate certainty evidence
	BLEACH BATHS  Chu et al Network meta-analysis; Devasenapathy & Chu meta-analysis	MILD MODERATE SEVERE	We suggest adding dilute bleach bathing	 Conditional in favor	 Low certainty evidence
Bakaa et al 2022. Systematic review	MILD	We suggest against adding dilute bleach bathing	 Conditional against	 Low certainty evidence	

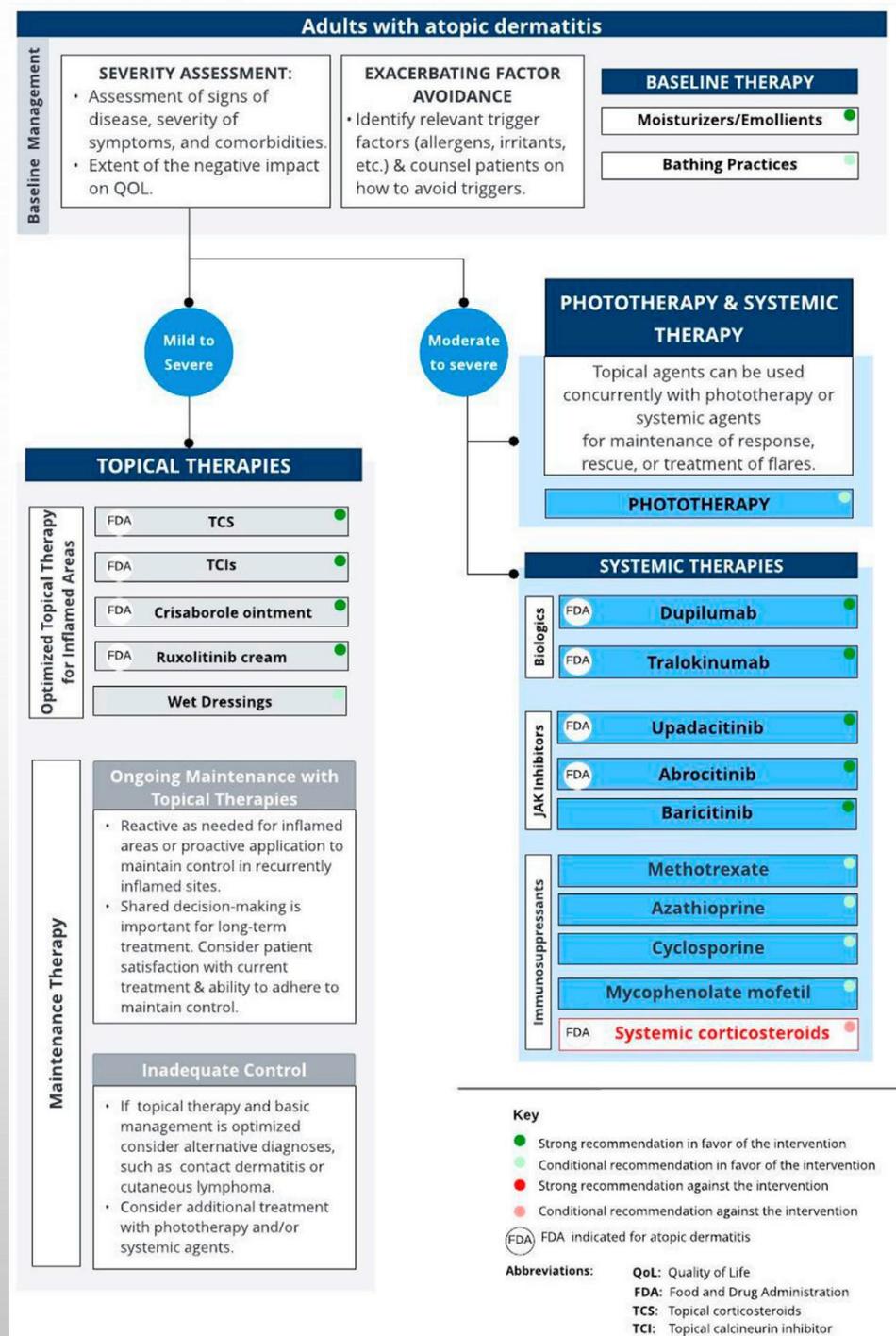
Chu DK, Schneider L, Asiniwasis RN, Boguniewicz M, De Benedetto A, Ellison K, Frazier WT, Greenhawt M, Huynh J, Kim E, LeBovidge J. Atopic dermatitis (eczema) guidelines: 2023 American Academy of Allergy, Asthma and Immunology/American College of Allergy, Asthma and Immunology Joint Task Force on Practice Parameters GRADE—and Institute of Medicine—based recommendations. *Annals of Allergy, Asthma & Immunology*. 2023 Dec 18.

JTF GUIDELINES

INTERVENTION Treatment or category of treatments considered	SEVERITY Severity of dermatitis that this recommendation applies to	RECOMMENDATION Text summary of recommendation	STRENGTH The strength of the recommendation	CERTAINTY GRADE rating for the certainty of evidence
<p>TOPICAL TREATMENTS</p>  <p>If refractory to moisturizers</p>	<p>MILD MODERATE SEVERE</p>	<p>PRESCRIPTION MOISTURIZERS We suggest against using prescription moisturizers rather than a fragrance-free over-the-counter moisturizer</p>	<p>○ ○ ⊗ ○ Conditional against</p>	<p>★ ★ ☆ ☆ Low certainty evidence</p>
	<p>MILD MODERATE SEVERE</p>	<p>TOPICAL CORTICOSTEROIDS We recommend adding a topical corticosteroid Age 3mo+</p>	<p>✓ ○ ○ ○ Strong in favor</p>	<p>★ ★ ★ ★ High certainty evidence</p>
	<p>MILD MODERATE SEVERE</p>	<p>TOPICAL CALCINEURIN INHIBITORS We recommend adding a topical calcineurin inhibitor Age 3mo+</p>	<p>✓ ○ ○ ○ Strong in favor</p>	<p>★ ★ ★ ★ High certainty evidence</p>
	<p>MILD MODERATE</p>	<p>TOPICAL PDE4 INHIBITORS We suggest adding crisaborole Age 3mo+</p>	<p>○ ✓ ○ ○ Conditional in favor</p>	<p>★ ★ ★ ☆ Moderate certainty evidence</p>
	<p>MILD MODERATE</p>	<p>TOPICAL JAK INHIBITORS We suggest against adding topical ruxolitinib Age 12yo+</p>	<p>○ ○ ⊗ ○ Conditional against</p>	<p>★ ★ ☆ ☆ Low certainty evidence</p>

AAD GUIDELINES

Davis DM, Drucker AM, Alikhan A, Bercovitch L, Cohen DE, Darr JM, Eichenfield LF, Frazer-Green L, Paller AS, Schwarzenberger K, Silverberg JI. Guidelines of care for the management of atopic dermatitis in adults with phototherapy and systemic therapies. Journal of the American Academy of Dermatology. 2024 Feb 1;90(2):e43-56.



AAD GUIDELINES

Davis DM, Drucker AM, Alikhan A, Bercovitch L, Cohen DE, Darr JM, Eichenfield LF, Frazer-Green L, Paller AS, Schwarzenberger K, Silverberg JI. Guidelines of care for the management of atopic dermatitis in adults with phototherapy and systemic therapies. Journal of the American Academy of Dermatology. 2024 Feb 1;90(2):e43-56.

TOPICAL THERAPIES

Optimized Topical Therapy for Inflamed Areas

FDA	TCS	●
FDA	TcIs	●
FDA	Crisaborole ointment	●
FDA	Ruxolitinib cream	●
	Wet Dressings	●

Maintenance Therapy

Ongoing Maintenance with Topical Therapies

- Reactive as needed for inflamed areas or proactive application to maintain control in recurrently inflamed sites.
- Shared decision-making is important for long-term treatment. Consider patient satisfaction with current treatment & ability to adhere to maintain control.

Inadequate Control

- If topical therapy and basic management is optimized consider alternative diagnoses, such as contact dermatitis or cutaneous lymphoma.
- Consider additional treatment with phototherapy and/or systemic agents.

TABLE 1. Nonsteroidal Topical Agents

<i>Medication class/name</i>	<i>Mechanism of action</i>	<i>Common adverse effects</i>	<i>FDA approval year</i>
Tacrolimus	Calcineurin inhibition → T cell suppression	Burning sensation on application, theoretical malignancy risk	2000
Pimecrolimus			2001
Crisaborole	PDE-4 inhibition → decreased histamine and cytokine release	Burning sensation on application	2016
Ruxolitinib	JAK1/JAK2 inhibition → cytokine suppression	Local cutaneous reactions (erythema, itching, eczema, and wound infection)	2021

JAK, Janus kinase; PDE-4, phosphodiesterase-4.

JTF GUIDELINES

ATOPIC DERMATITIS		AAAAI/ACAAI JTFPP 2023 Guidelines 		
INTERVENTION	SEVERITY	RECOMMENDATION	STRENGTH	CERTAINTY
ELIMINATION DIETS  Oykhman et al Systematic review	MILD MODERATE SEVERE	We suggest against the use of elimination diets	 Conditional against	 Low certainty evidence
ALLERGEN IMMUNOTHERAPY  Best evidence for dust mite allergy Yepes-Nuñez & Chu et al Systematic review	MILD MODERATE SEVERE	We suggest adding allergen immunotherapy if refractory, intolerant, or unable to use mid potency topical treatments	 Conditional in favor	 Moderate certainty evidence
	MILD MODERATE SEVERE	We suggest against adding allergen immunotherapy. See conditions to consider, e.g. comorbidities, values and preferences	 Conditional against	 Moderate certainty evidence
SYSTEMIC TREATMENTS Consider if refractory, intolerant, or unable to use mid to high potency topical treatment  Consider if refractory, intolerant, or unable to use mid to high potency topical treatment and systemic treatment inclusive of a biologic recommended above See conditions to consider, e.g. comorbidities, risk factors, values and preferences, and exceptional circumstances Chu et al Network meta-analysis	MILD MODERATE SEVERE	BIOLOGICS / MONOCLONAL ANTIBODIES DUPILUMAB We recommend adding dupilumab Age 6mo+	 Strong in favor	 High certainty evidence
	MILD MODERATE SEVERE	TRALOKINUMAB We recommend adding tralokinumab Age 12yo+	 Strong in favor	 High certainty evidence
	MILD MODERATE SEVERE	UVB TREATMENT We suggest adding clinic-based narrow band UVB treatment	 Conditional in favor	 Low certainty evidence
	MILD MODERATE SEVERE	ABROCITINIB, BARICITINIB, OR UPADACITINIB We suggest adding one of these three JAK inhibitors Age varies: 12 or 18 yo+ Suggested daily doses: Abrocitinib 100-200 mg Baricitinib 2-4 mg Upadacitinib 15-30 mg	 Conditional in favor	 Low certainty evidence
	MILD MODERATE SEVERE	SMALL MOLECULE IMMUNOSUPPRESSANTS BARICITINIB 1 mg DAILY We recommend against adding baricitinib 1 mg daily	 Strong against	 Low certainty evidence
	MILD MODERATE SEVERE	AZATHIOPRINE We suggest against adding azathioprine	 Conditional against	 Low certainty evidence
	MILD MODERATE SEVERE	CYCLOSPORINE We suggest adding cyclosporine Shared-decision making should determine whether to start therapy at high dose (5mg/kg) or low dose (3 mg/kg)	 Conditional in favor	 Low certainty evidence
	MILD MODERATE SEVERE	METHOTREXATE We suggest against adding methotrexate	 Conditional against	 Low certainty evidence
	MILD MODERATE SEVERE	MYCOPHENOLATE We suggest against adding mycophenolate	 Conditional against	 Low certainty evidence
	MILD MODERATE SEVERE	SYSTEMIC CORTICOSTEROIDS We suggest against systemic corticosteroids for all patients with atopic dermatitis	 Conditional against	 Low certainty evidence

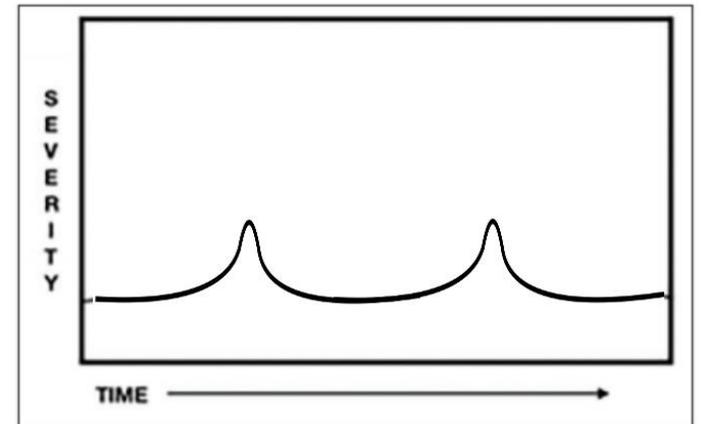
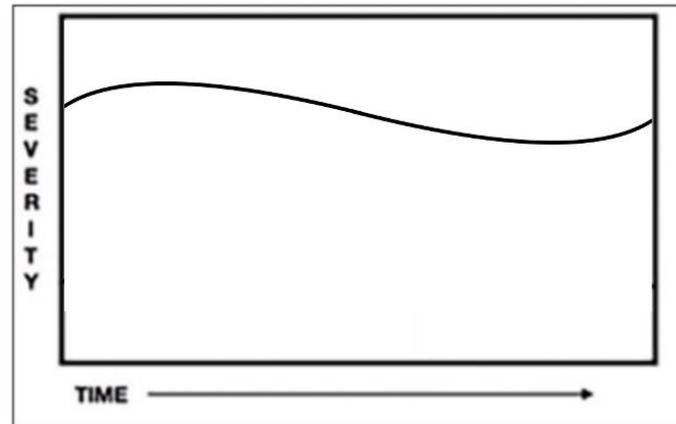
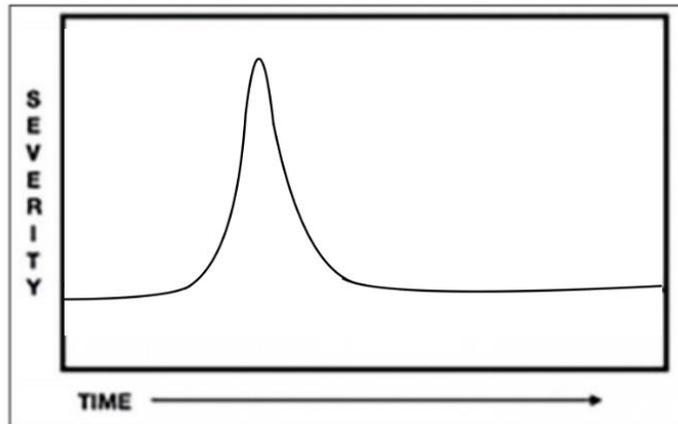
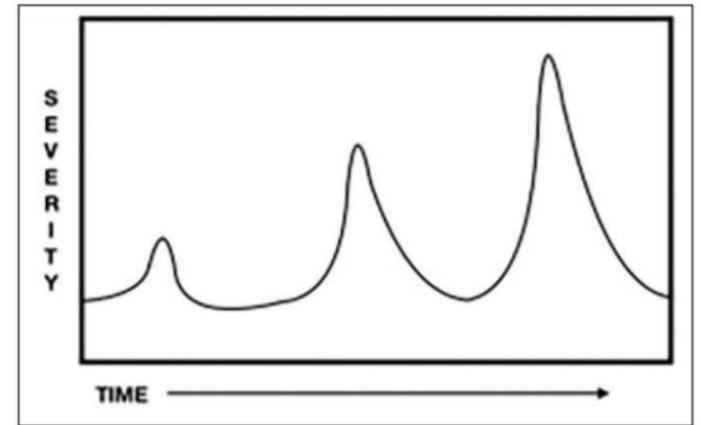
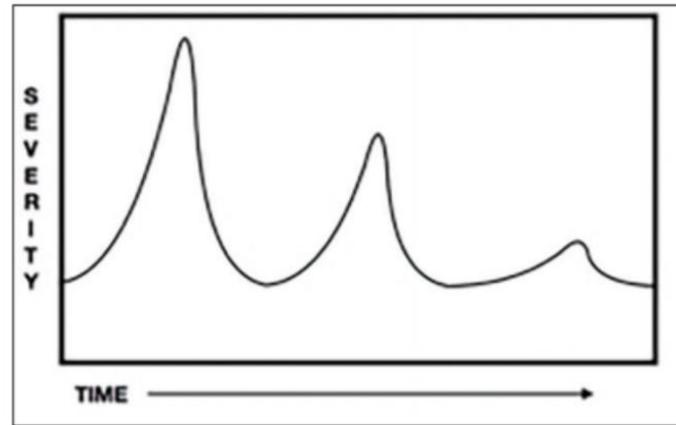
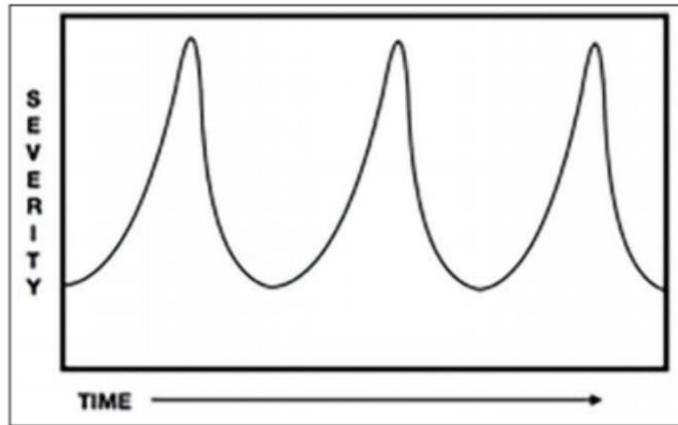
Chu DK, Schneider L, Asiniwasis RN, Boguniewicz M, De Benedetto A, Ellison K, Frazier WT, Greenhawt M, Huynh J, Kim E, LeBovidge J. Atopic dermatitis (eczema) guidelines: 2023 American Academy of Allergy, Asthma and Immunology/American College of Allergy, Asthma and Immunology Joint Task Force on Practice Parameters GRADE–and Institute of Medicine–based recommendations. *Annals of Allergy, Asthma & Immunology*. 2023 Dec 18.

AAD GUIDELINES

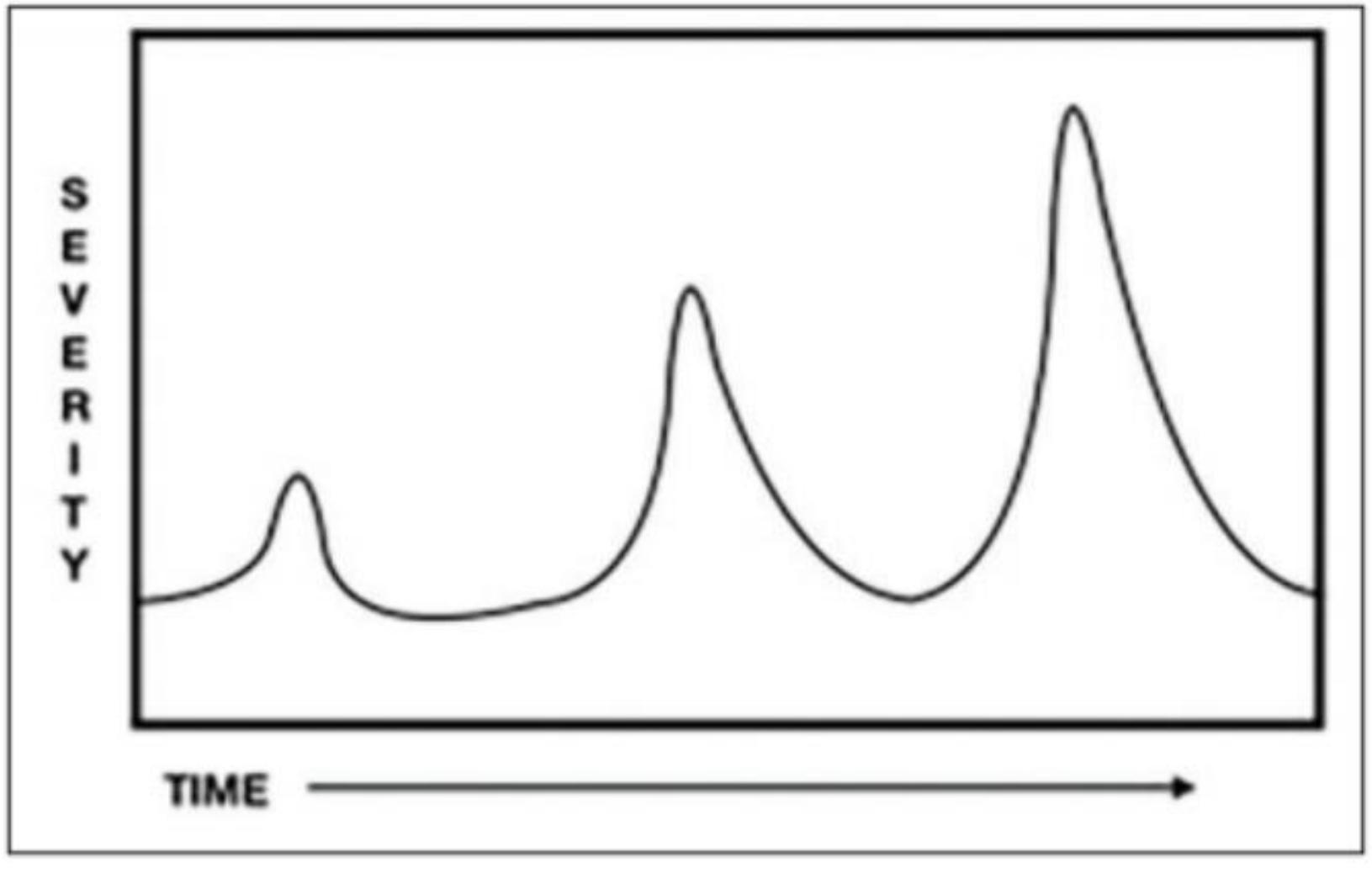
2.1	Dupilumab	On-label	For adults with moderate to severe AD, we recommend dupilumab.	Strong	Moderate
2.2	Tralokinumab	On-label	For adults with moderate to severe AD, we recommend tralokinumab.	Strong	Moderate
JAK inhibitors					
3.1	Upadacitinib	On-label	For adults with moderate to severe AD, we recommend upadacitinib. Remarks: Upadacitinib is approved by the FDA in patients with AD who have failed other systemic therapies (pills or injections, including biologics) or when use of those therapies is inadvisable.	Strong	Moderate
3.2	Abrocitinib	On-label	For adults with moderate to severe AD, we recommend abrocitinib. Remarks: Abrocitinib is approved by the FDA in patients with AD who have failed other systemic therapies (pills or injections, including biologics) or when use of those therapies is inadvisable.	Strong	Moderate

Davis DM, Drucker AM, Alikhan A, Bercovitch L, Cohen DE, Darr JM, Eichenfield LF, Frazer-Green L, Paller AS, Schwarzenberger K, Silverberg JI. Guidelines of care for the management of atopic dermatitis in adults with phototherapy and systemic therapies. Journal of the American Academy of Dermatology. 2024 Feb 1;90(2):e43-56.

DIFFERENT PATTERNS



“ESCALATING PATTERN”



TSW

A systematic review of topical corticosteroid withdrawal (“steroid addiction”) in patients with atopic dermatitis and other dermatoses

Tamar Hajar, MD,^a Yael A. Leshem, MD,^a Jon M. Hanifin, MD,^a Susan T. Nedorost, MD,^b Peter A. Lio, MD,^c Amy S. Paller, MD,^c Julie Block, BA,^d and Eric L. Simpson, MD, MCR,^a (the National Eczema Association Task Force)
Portland, Oregon; Cleveland, Ohio; Chicago, Illinois; and San Rafael, California

Hajar T, Leshem YA, Hanifin JM, Nedorost ST, Lio PA, Paller AS, Block J, Simpson EL. A systematic review of topical corticosteroid withdrawal (“steroid addiction”) in patients with atopic dermatitis and other dermatoses. *Journal of the American Academy of Dermatology*. 2015 Mar 1;72(3):541-9.

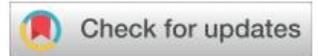
TSW

- TSW is a poorly understood, distinct adverse effect of steroid use
- Most commonly described in adult women in the face or genital region, but certainly not limited to this
- TSW should be suspected when:
 - Confluent erythema appears within days to weeks of discontinuing therapy
 - Stinging and burning are prominent symptoms
 - History is consistent [escalating need for steroid, ramping up and up]

Hajar T, Leshem YA, Hanifin JM, Nedorost ST, Lio PA, Paller AS, Block J, Simpson EL. A systematic review of topical corticosteroid withdrawal (“steroid addiction”) in patients with atopic dermatitis and other dermatoses. *Journal of the American Academy of Dermatology*. 2015 Mar 1;72(3):541-9.

UPDATE

JOURNAL OF DERMATOLOGICAL TREATMENT
<https://doi.org/10.1080/09546634.2021.1882659>



REVIEW ARTICLE

Topical corticosteroid withdrawal ('steroid addiction'): an update of a systematic review

Jonwei Hwang^a and Peter A. Lio^b 

^aCollege of Medicine, University of Illinois, Chicago, IL, USA; ^bFeinberg School of Medicine, Northwestern University, Chicago, IL, USA

Hwang J, Lio PA. Topical corticosteroid withdrawal ('steroid addiction'): an update of a systematic review. Journal of Dermatological Treatment. 2021 Jan 29:1-6.

CRITERIA?

Table 4. Clinical features.

Feature	No. of patients (%)
Symptoms	<i>n</i> = 307
Itch	56 (18.2)
Sleep disturbance	50 (16.3)
Burning pain	41 (13.4)
Mood disturbance	33 (10.7)
Skin sensitivity	28 (9.1)
Pain, other than burning	17 (5.5)
Photosensitivity	82 (2.7)
Signs	<i>n</i> = 706
Elephant wrinkles	39 (5.5)
Red sleeve	25 (3.5)
Headlight sign	17 (2.4)
Edema/swelling	40 (5.7)
Acneiform papules	145 (20.5)
Erythema/red skin	189 (26.8)
Scaling	101 (14.3)
Weeping	44 (6.2)
Telangiectasias	42 (5.9)
Eczematous	10 (1.4)
Pus	33 (4.7)
Hypertrichosis	21 (3.0)

Hwang J, Lio PA. Topical corticosteroid withdrawal ('steroid addiction'): an update of a systematic review. *Journal of Dermatological Treatment*. 2021 Jan 29:1-6.

Steroid Withdrawal Effects Following Long-term Topical Corticosteroid Use

Belinda Sheary, FRACGP

TABLE 1. Topical Steroid Withdrawal Signs

Red skin	The most common sign reported in TSW, seen in 92% of cases ⁴ (hence the name “red skin syndrome ² ”). Can be severe and widespread. ^{3,11,15} It typically occurs within days to weeks of ceasing long-term TCS overuse, ⁴ spreading from the original site of intractable eczema, with gradual extension into areas of the skin where TCSs may have never been applied. ^{3,11}
Red sleeve ¹⁶	A descriptive term for a rebound eruption to either the upper or lower limb ending abruptly at the margin of the dorsal and palmar (or solar) border ³ (Figs. 1C, D); skin to the palms and soles tends to be clear in all but the most severely affected patients with TSW. ³
Headlight sign ²	Clear nose and perioral skin in an otherwise red face ² (Fig. 1E); erythema often ends at the midcheek with normal skin present from the midcheek to the ears ¹⁷ (Fig. 1F)
Elephant wrinkles ¹⁶	A descriptive term for apparent thickened skin with a reduction in skin elasticity, demonstrated, eg, on the anterior knees and/or extensor elbows, ¹⁶ although not limited to these areas (Fig. 1G); can take many months to resolve





Photo courtesy of Peter Lio,
MD; Consent on file

Information Classification: General

CRITERIA?

- History of escalating topical corticosteroid requirement
- Skin flushing bright resembling a sunburn, or darkening depending on skin tone
- Absence of cutaneous stigmata of frequent steroid use
- Morphology and distribution differ from the primary condition
- Worsening of rash that no longer responds to standard use of topical steroids or oral corticosteroid therapy
- Sleeve sign
- Elephant skin sign
- Spontaneous neuropathic pain that is either localized or generalized
- Extensive exfoliation, "snow"
- Substantial and persistent sleep disruption
- Severe burning sensation of the skin
- Hyperesthesia of skin
- Thermodyregulation
- Edema
- Confluent erythema, often of the face and neck
- Oozing or weeping

- History of atopy, especially atopic dermatitis
- Escalating, elusive pruritus that differs from itch of underlying condition
- Ardorema

HOT OFF THE PRESS!

[HTTPS://WWW.GOV.UK/DRUG-SAFETY-UPDATE/TOPICAL-STERIODS-INTRODUCTION-OF-NEW-LABELLING-AND-A-REMINDER-OF-THE-POSSIBILITY-OF-SEVERE-SIDE-EFFECTS-INCLUDING-TOPICAL-STERIOD-WITHDRAWAL-REACTIONS](https://www.gov.uk/drug-safety-update/topical-steroids-introduction-of-new-labelling-and-a-reminder-of-the-possibility-of-severe-side-effects-including-topical-steroid-withdrawal-reactions)

(ACCESSED ON 05/30/2024)

Topical steroids: introduction of new labelling and a reminder of the possibility of severe side effects, including Topical Steroid Withdrawal Reactions

Topical steroid products are safe and highly effective treatments for the management of a wide range of inflammatory skin diseases but have important risks, especially with prolonged use at high potency. In the coming months, as a result of regulatory action, topical steroid products will be labelled with information on their potency to simplify advice for patients.

HOT OFF THE PRESS!

[HTTPS://WWW.GOV.UK/DRUG-SAFETY-UPDATE/TOPICAL-STERIODS-INTRODUCTION-OF-NEW-LABELLING-AND-A-REMINDER-OF-THE-POSSIBILITY-OF-SEVERE-SIDE-EFFECTS-INCLUDING-TOPICAL-STERIOD-WITHDRAWAL-REACTIONS](https://www.gov.uk/drug-safety-update/topical-steroids-introduction-of-new-labelling-and-a-reminder-of-the-possibility-of-severe-side-effects-including-topical-steroid-withdrawal-reactions)

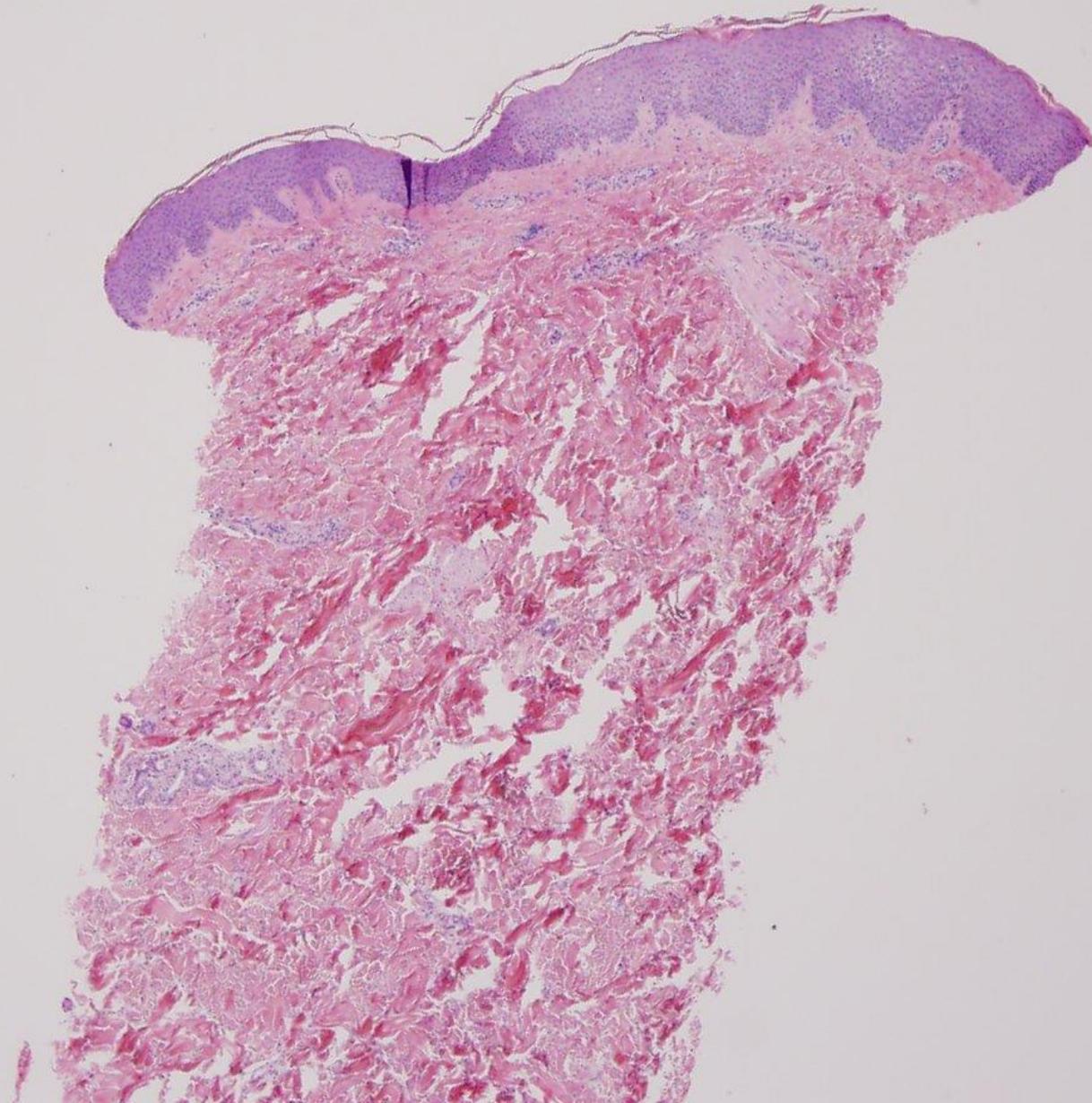
(ACCESSED ON 05/30/2024)

Advice for healthcare professionals:

- adverse reactions have been reported following long-term (generally 6 months or more) use of moderate or stronger potency topical steroids, particularly when used for eczema treatment – these reactions are often referred to as ‘Topical Steroid Withdrawal Reactions’ (TSW)
- symptoms of TSW can include intense redness, stinging, and burning of the skin that can spread beyond the initial treatment area
- the risk of these and other serious reactions increases with prolonged use of higher potency steroid products
- over the coming year, topical steroids will be labelled with information on their potency to assist with counselling patients
- when prescribing or dispensing topical steroids, advise on the amount of product to apply, how often, where to apply it and when to stop treatment
- if previous discontinuation was associated with reactions that raise suspicion of TSW, alternative treatments should be considered
- provide support to patients living with symptoms of TSW and review treatment plans with patients

UNDER THE MICROSCOPE

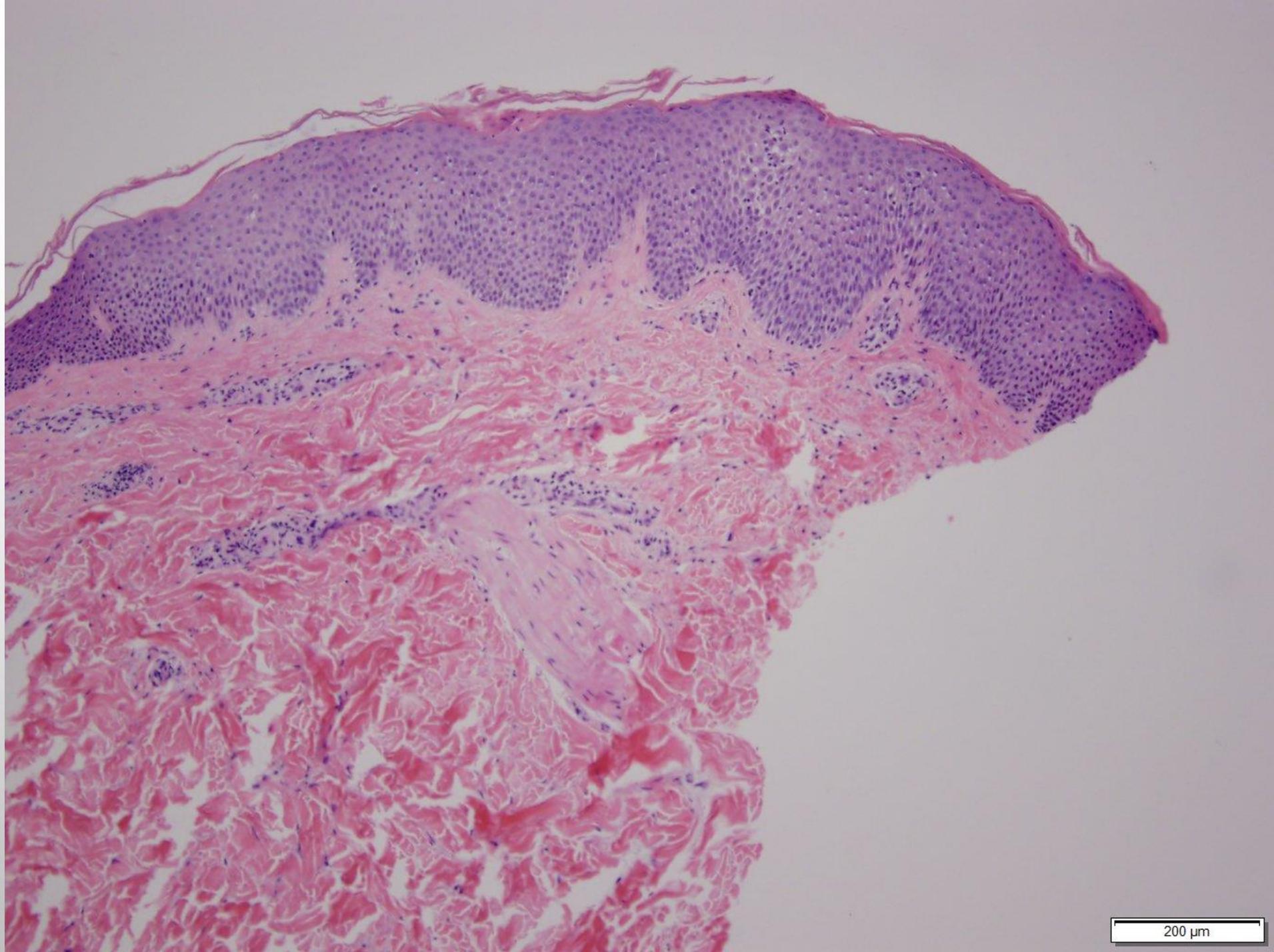
...



200 μ m

UNDER THE MICROSCOPE

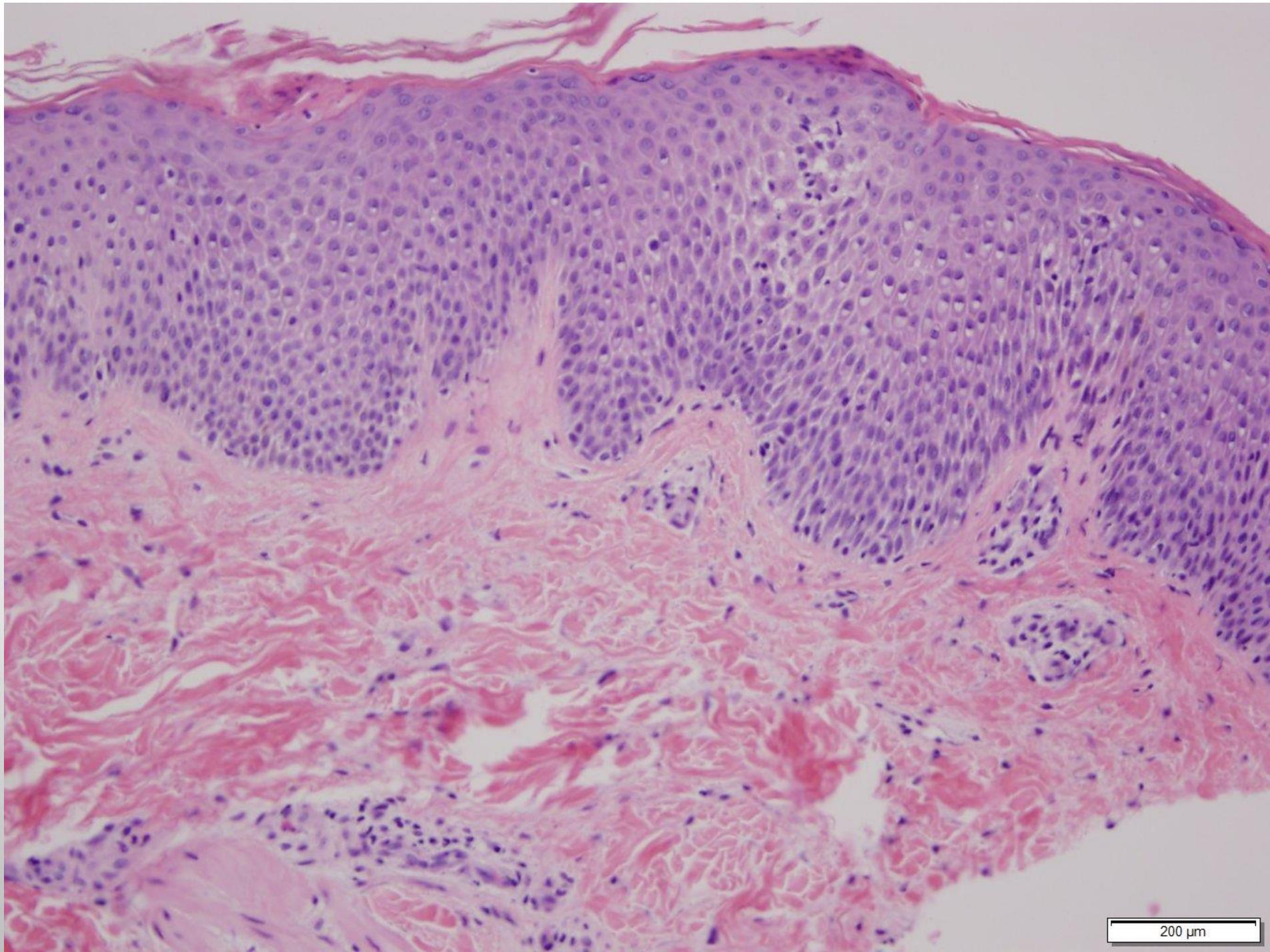
...



200 μ m

UNDER THE MICROSCOPE

...



CAUSE?

Mechanism not well understood

Theory: caused by the effects of TCS on the local immune system and cutaneous blood vessels.

TCSs decrease production of nitric oxide (NO), thereby inhibiting its vasodilatory action and depleting mast cells, which are regulated by NO

In the absence of TCS use, a rebound effect may occur where NO levels increase, leading to exaggerated vasodilation

Hajar T, Leshem YA, Hanifin JM, Nedorost ST, Lio PA, Paller AS, Block J, Simpson EL. A systematic review of topical corticosteroid withdrawal (“steroid addiction”) in patients with atopic dermatitis and other dermatoses. *Journal of the American Academy of Dermatology*. 2015 Mar 1;72(3):541-9.

IDEAL APPROACH?

When Flaring (Itchy, Red, Oozing):

AM:

1. Apply STEROID to the eczema areas
2. Apply moisturizer liberally

PM:

1. Wash with Gentle Cleanser
2. Apply STEROID to the eczema areas
3. Apply moisturizer liberally

****Do this for several days (up to 1 week) until better...****

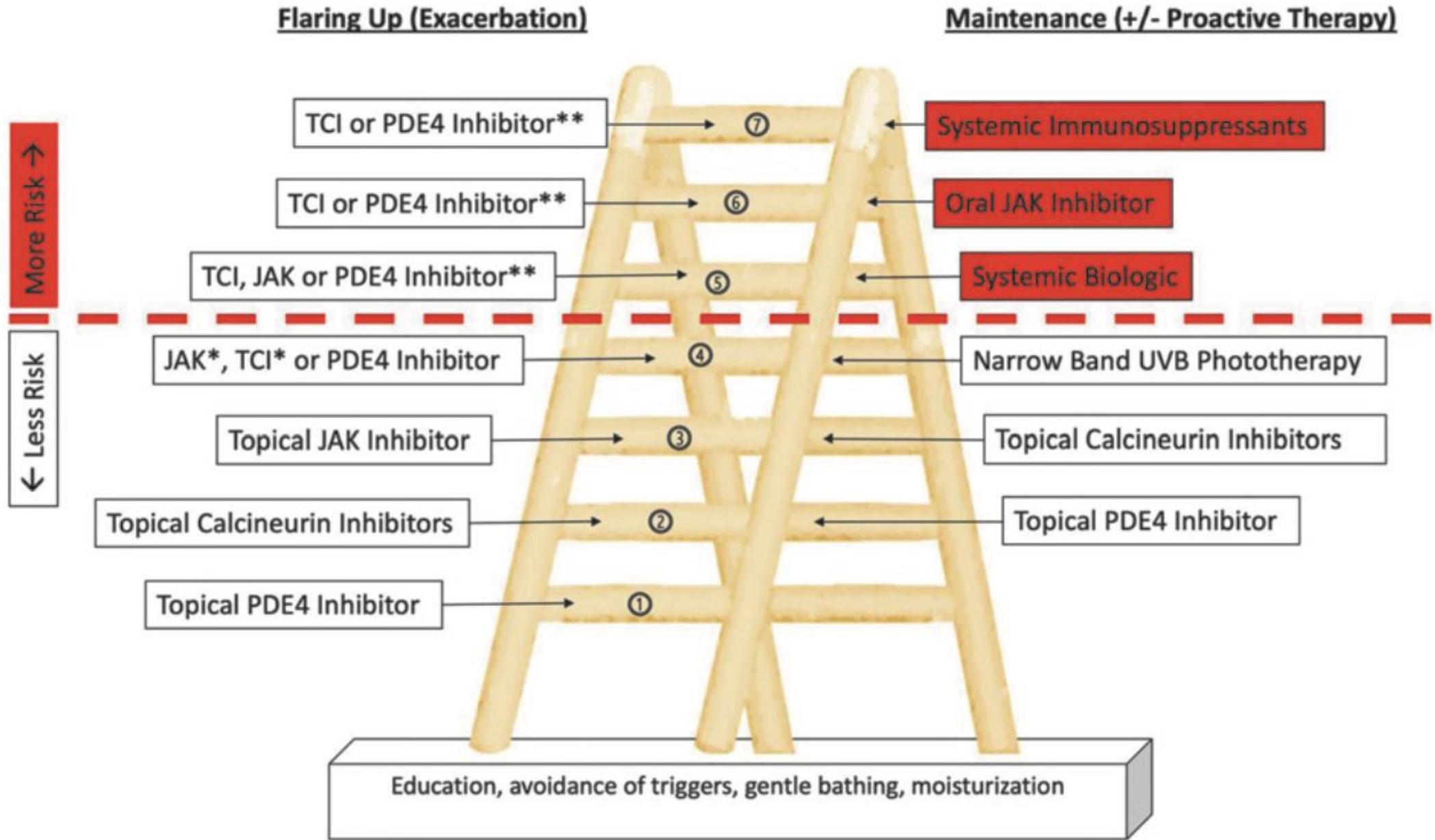
Once Better:

AM:

1. Apply NON-STEROIDAL to remaining areas/trouble spots
2. Apply moisturizer liberally

PM:

1. Wash with Gentle Cleanser
2. Apply NON-STEROIDAL to remaining areas/trouble spots
3. Apply moisturizer liberally



CONCLUSIONS

- Steroids can be both friend and foe! They can help, but TSW is a terrible condition that warrants further research and validation
- Importantly, some cases do not seem to just improve with time
- Better treatments are necessary to minimize the suffering while strictly avoiding corticosteroid exposure

THANK YOU!