"Will moisturizer help my skin?" A Review of Dermatitis Guidelines and Literature

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ABSTRACT

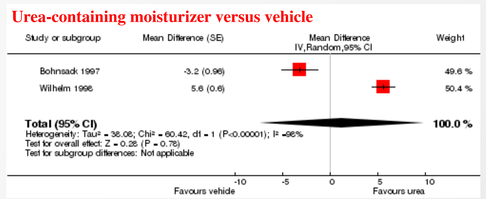
Objectives: Inundated by skin care product marketing, patients with and without dermatitis often ask their dermatologists about the benefit of moisturizer. We review recent literature to assist with answering that question.

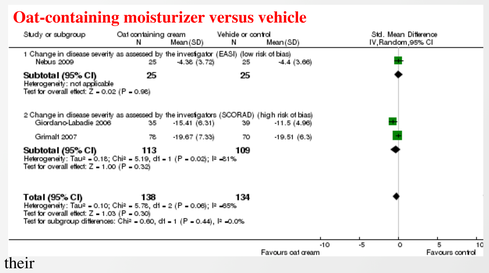
Methods: We searched PubMed for relevant Cochrane reviews and current guidelines using combinations of the terms "emollient", "moisturizer", "dermatitis", "guidelines" as well as recent literature and our own pilot study data on the skin microbiome.

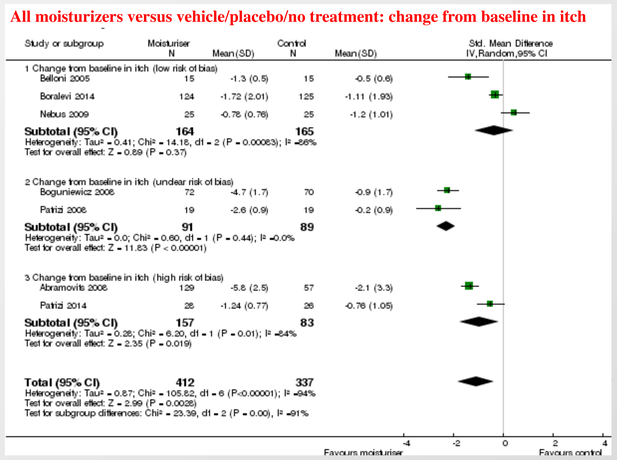
Results: Consensus guidelines in international societies were reviewed, all of which advocated for moisturizer use as a cornerstone of atopic dermatitis management. Moisturizers improve barrier function quickly and have anti-inflammatory effects but also have potential for causing contact allergy. In neonates, moisturizers may delay wet to dry cycles and thus delay irritant dermatitis. However, once dermatitis occurs, it may be desirable in neonates to avoid application of moisturizers containing components present in food that may trigger systemic contact dermatitis, such as oat. Moisturizers may also affect the cutaneous microbiome. Occlusive preparations may promote an environment for growth of mixed species biofilms which are shown to promote Th2 skewing by increasing thymic stromal lymphopoietin.

Conclusions: Although recent consensus guidelines propose use of moisturizers in patients living with dermatitis, we do not know enough about the influence of various moisturizers on sensitization potential and the microbiome to offer broad advice including to healthy patients. Further interventional studies are needed to allow a more personalized approach in the future.

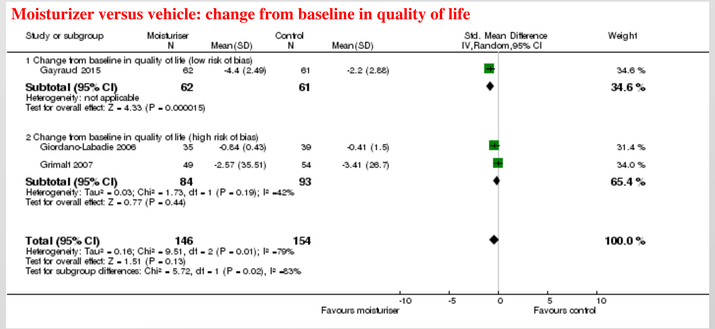
MOISTURIZERS AND ECZEMA: RESULTS OF COCHRANE REVIEW[5]







- Commonly used moisturizers including urea containing and oat containing products did not demonstrate a significant difference compared to vehicle in EASI score
- No statistically significant difference in change from baseline of quality of life between moisturizer and vehicle



PATIENT POPULATIONS TO CONSIDER

Xerosis without Dermatitis

- No evidence supports a causative link between xerosis and pruritus
- Consider burdens of emollient cost, time to apply, and potential flammability of emollient soaked clothing
- ***With limited benefit and numerous costs, avoid recommending emollients for xerosis indiscriminately***

Neonates at risk for Atopic Dermatitis (AD)

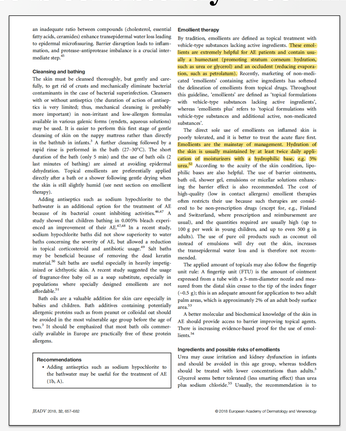
- Pilot studies comparing daily emollient application beginning within 3 weeks of birth to control demonstrated decreased rates of AD development (22% vs. 43%, p = 0.017, 124 newborns)[6]
- This was not confirmed on larger studies (23% vs. 25%, p = 0.61, 1394 newborns)[7]
- ***It is unclear if application of emollients from birth leads to decreased development of AD***

Pruritus Exacerbated by Perspiration

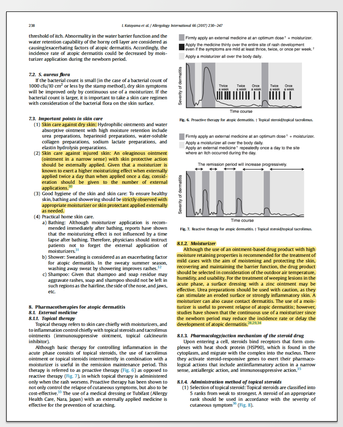
- AD patients whose pruritus is exacerbated by sweating likely have a component of commensal organism sensitization
- Application of occlusive ointments in these patients may promote an environment for biofilms, exacerbating pruritus
- ***Avoid occlusive ointments in these patients which may promote biofilms and Th2 skewing[8]***

Widespread emollient use is consistently recommended in dermatitis management guidelines

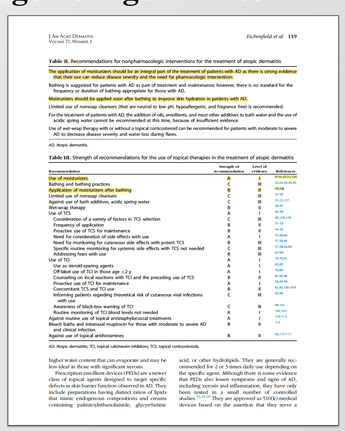
Nordic Countries
Atopic Dermatitis Expert Opinion
(2020)[1]



European Academy of Dermatology and Venereology
Atopic Dermatitis Guidelines (2018)[2]



Japanese Society of Allergology
Atopic Dermatitis Guidelines
(2017)[3]



American Academy of Dermatology
Atopic Dermatitis Guidelines
(2014)[4]

DISCUSSION QUESTIONS

- Which patients will truly benefit from moisturizer use?
- Can the benefits of moisturizer be extrapolated to healthy individuals without dermatitis?
- What are the effects of moisturizers on the aberrant microbiome in atopic dermatitis?
- Are we adequately counseling our patients about the potential risks of moisturizers?

REFERENCES

1. Thyssen JP, *et al*. Clinical Management of Atopic Dermatitis in Adults: Mapping of Expert Opinion in 4 Nordic Countries using a Modified Delphi Process. Acta Derm Venereol. 2020 Jan 7;100(1):adv00015.
2. Wollenberg A, *et al*. Consensus-based European guidelines for treatment of atopic eczema (atopic dermatitis) in adults and children: part I. JEADV 2018, 32, 657–682.
3. Katayama, *et al*. Japanese guidelines for atopic dermatitis 2017. Allergology International 66 (2017) 230e247
4. Eichenfield, *et al*. Guidelines of care for the management of atopic dermatitis. J Aan Acaad Dermatol. 2014 Jul;71(1):116-32.
5. van Zuuren EJ, Fedorowicz Z, Christensen R, Lavrijsen APM, Arents BWM. Emollients and moisturisers for eczema. Cochrane Database of Systematic Reviews 2017, Issue 2. Art. No.: CD012119. DOI: 10.1002/14651858.CD012119.pub
6. Simpson EL, *et al*. Emollient enhancement of the skin barrier from birth offers effective atopic dermatitis prevention. J Allergy Clin Immunol. 2014 Oct;134(4):818-23.
7. Chalmers JR, *et al*. Daily emollient during infancy for prevention of eczema: the BEEP randomized controlled trial. Lancet. 2020 Feb 19. pii: S0140-6736(19)32984-8. doi: 10.1016/S0140-6736(19)32984-8. [Epub ahead of print]
8. Hammond MI, Chandra J, Retuerto M, Sherif RA, Ghannoum MA, Nedorost ST, Mukherjee PK. "The Skin Microbiome in Atopic Dermatitis: Interactions between Bacteria (Staphylococcus) and Fungi (Alternaria)" British Society for Investigative Dermatology Annual Meeting; Bradford, UK (2019).