Think Moisturizer
Think Ajanta Dermatology

TABLE OF CONTENTS

Think Moisturizer
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Glycerin, Ceramide, Butter based moisturiser

AQUASOFT

Cream/Lotion/Max Cream/Max Lotion/S Bar/CV

Facial moisturiser

Aquasoft FC

60 / 100 g Cream

Aquaxyl Uvinul A Plus, Uvinul T 150,
Tinosorb S, Vitamin E

Urea based moisturiser

Aqurea HF | 20 | 10

Urea 40% Urea 20% Urea 10%

Ceramide & Colloidal Oat meal based moisturiser

Biosilk

Ceramide 1,3,6-II, Oat Com, Pentavitin, Stimulex-AS complex, Sodium Hyaluronate

Lotion/Cream

Oil based moisturiser

Prusoft

Sunflower Seed Oil 10.0%, Jojoba Oil 4.0%, Sodium Pyrrolidone Carboxylic Acid 2.5%, Sodium Chloride 0.5%

Cream

Ultra moisturising complex

1st Time in India

SORILAST®

Cream

Urea 12%, Salicylic acid 0.5%, Lactic acid 6.81%,
Avena Sativa 0.10%, HACE 200 0.10%,
Witch Hazel extract 1%, Biophilic H-MB 1%

HOPE
Humectant Occlusive Protective Emollient
NEWSLETTER
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Think Moisturizer
Think Ajanta Dermatology

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Ceramides and skin health

Intercellular lipids in the skin are made up of ceramides, cholesterols, and cholesterol esters. Ceramides are the most abundant of these lipids, comprising roughly half of their weight. There are 12 subclasses of ceramides, categorized by the types of constituent sphingosines and fatty acids.[1]

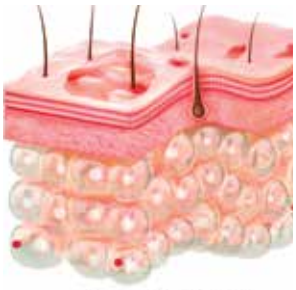
The skin's integrity is maintained by the structure of ceramide, which links with the intercellular matrix and anchors the corneocytes.[2]

Ceramides and skin diseases

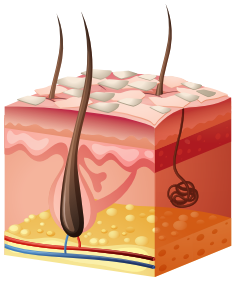
Skin disorders with barrier defects can result from variations in the amount and arrangement of stratum corneum ceramides.[2]

Atopic dermatitis

Research shows that there is a 52% reduction in ceramides in atopic dermatitis (AD). While the lesioned regions show reduced levels of ceramide I and ceramide III, the non-lesioned regions of the skin show raised levels of ceramide V. In addition, free fatty acids are also reduced in AD.[2]



Psoriasis



Psoriasis lesions exhibit a significant reduction in ceramide levels, which correlates with lower levels of apoptotic signaling molecules like protein kinase C (PKC)-α and c-Jun N-terminal kinase (JNK). This suggests that ceramide deficiency downregulates the apoptotic pathway and drives epidermal proliferation in psoriasis.[3]

Topical ceramides for the skin

Replenishing decreased ceramide levels in the skin could improve skin disorders. Various researchers have developed topical applications.[2]

A ceramide-dominant, physiologic lipid-based product was found to be effective for treating moderate-to-severe AD in a clinical trial. The ceramide-dominant emulsion was found to be comparable to fluticasone propionate 0.05% for the amelioration of pruritus and for improvement in sleep habits (after two weeks and four weeks of treatment).[4]

An analysis of 12 reports revealed that the use of external ceramide- containing preparations can enhance the barrier function and alleviate dry skin in patients with atopic dermatitis.[1]

"It can be concluded that ceramides play a significant role in maintaining skin integrity. External/topical ceramide preparations play an essential therapeutic role in repairing the skin barrier function."

References: **1.** Kono T, Miyachi Y, Kawashima M. Clinical significance of the water retention and barrier function-improving capabilities of ceramide-containing formulations: A qualitative review. J Dermatol. 2021;48(12): 1807–1816. **2.** Kahraman E, Kaykin M, Bektay HS, *et al.* Recent advances on topical application of ceramides to restore barrier function of skin. Cosmetics. 2019;6(3):52. **3.** Lew BL, Cho Y, Kim J, *et al.* Ceramides and cell signaling molecules in psoriatic epidermis: Reduced levels of ceramides, PKC-alpha, and JNK. J Korean Med Sci. 2006;21(1):95–99. **4.** Kircik LH, Del Rosso JQ, Aversa D. Evaluating clinical use of a ceramide-dominant, physiologic lipid-based topical emulsion for atopic dermatitis. J Clin Aesthet Dermatol. 2011;4(3):34–40.

GUIDELINE UPDATE

Guidelines of care for the management of atopic dermatitis in adults with topical therapies

The American Academy of Dermatology has provided updated recommendations on the management of atopic dermatitis (AD) in adults with topical therapies (Table 1).

Strong recommendations are made for the use of moisturizers, topical calcineurin inhibitors (TCIs), topical corticosteroids, topical janus kinase (JAK) inhibitors, and topical phosphodiesterase-4 (PDE-4) inhibitors. Conditional recommendations are made for the use of bathing and wet wrap therapy and against the use of topical antimicrobials, antiseptics, and antihistamines.

Table 1. AAD recommendations on the management of AD in adults with topical therapies

Recommendations	Strength
Non-prescription therapies	
For adults with AD, the use of moisturizers is recommended. *Remark: The use of a particular moisturizer or active ingredient in an emollient cannot be recommended based on the limited available evidence.*	Strong
For adults with AD, bathing is recommended for treatment and maintenance. *Remark: A standard for the frequency or duration of bathing appropriate for those with AD cannot be suggested based on the limited available evidence.*	Conditional
For adults with moderate-to-severe AD experiencing a flare, the use of wet dressings is recommended.	Conditional
Topical calcineurin inhibitors	
For adults with AD, the use of tacrolimus 0.03% or 0.1% is recommended.	Strong
For adults with mild-to-moderate AD, the use of pimecrolimus 1% cream is recommended.	Strong
Topical corticosteroids	
For adults with AD, topical corticosteroids are recommended.	Strong
For adults with AD, the use of medium potency topical corticosteroids as maintenance therapy (2 times/week) is recommended to reduce disease flares and relapse.	Strong

Cont'd...

Topical antimicrobials/antiseptics and antihistamines	
The use of topical antimicrobials is not recommended for AD in adults.	Conditional
The use of topical antihistamines is not recommended for AD in adults.	Conditional
The use of topical antiseptics is not recommended for AD in adults. *Remark: For patients with moderate-to-severe AD and clinical signs of secondary bacterial infection, bleach baths or the use of topical sodium hypochlorite may be suggested to reduce disease severity.*	Conditional
Topical PDE-4 inhibitors	
For adults with mild-to-moderate AD, the use of crisaborole is recommended.	Strong
Topical JAK inhibitors	
For adults with mild-to-moderate AD, the use of ruxolitinib cream is recommended.	Strong

AAD: American Academy of Dermatology; AD: Atopic dermatitis; PDE-4: Phosphodiesterase-4; JAK: Janus kinase.

An overview on moisturizers in the systematic review

Moisturizers were shown to reduce signs, symptoms, and inflammation in AD, to improve AD severity, and to increase time between AD flares. Topical moisturizers target xerosis by minimizing transepidermal water loss (TEWL) and improving stratum corneum hydration and are integral to nearly all AD management plans. While they may be used as monotherapy in some mild cases, they are typically utilized as a part of a comprehensive regimen with pharmacologic treatments. They are generally safe, with rare serious adverse effects.

Reference: Sidbury R, Alikhan A, Bercovitch L, *et al.* Guidelines of care for the management of atopic dermatitis in adults with topical therapies. J Am Acad Dermatol. 2023:S0190–9622(23)00004–X.

Joint AAD-NPF*, guidelines of care for the management and treatment of psoriasis

Recommendations on the use of moisturizers

- Moisturizers (e.g., emollients), exert their action by retaining moisture in the stratum corneum. They have no known contraindications unless there is hypersensitivity to their ingredients.
- Moisturizers can be safely applied several times a day; they are also considered safe during pregnancy and lactation.

Recommendations on the use of emollients

- The use of an emollient in conjunction with topical corticosteroids for 4 to 8 weeks can be used to help reduce itching, desquamation, and total body surface area and prevent quick relapse of psoriasis when topical corticosteroids are discontinued (strength of recommendation: B).
- Emollients in conjunction with topical corticosteroid therapy is recommended (level of evidence: II).

*AAD: American Academy of Dermatology; NPF: National Psoriasis Foundation.

Reference: Elmets CA, Korman NJ, Prater EF, *et al.* Joint AAD-NPF guidelines of care for the management and treatment of psoriasis with topical therapy and alternative medicine modalities for psoriasis severity measures. J Am Acad Dermatol. 2021;84(2):432–470.

CONFERENCE UPDATE

Glimpses of DERMACON International 2023 - India

Routine moisturization is recommended by the American Academy of Dermatology for maintaining healthy skin and preventing/ worsening of skin disease.[1]

Traditionally, moisturizers are composed of primarily 3 components: Humectants, occlusives, and emollients. Recently developed moisturizers contain ingredients such as cannabinoids, bioactive lipids, microbiome modulators, and antioxidant enzymes conditions (Table 2).[1]

Table 2. Bioactive ingredients of moisturizers and their intended function

Bioactive ingredients	Intended functions
Cannabinoids	Mitigate itch and inflammation, stimulate lipid production
Petroleum	Occlusion, decreasing TEWL; strengthen lipid lattice, stimulate AMP production
Ceramides	Restore SC lipid matrix, water permeability and barrier function
Antioxidants	Prevent oxidative damage by decreasing ROS
Niacinamide	Improves epidermal barrier function by decreasing TEWL, increasing ceramides, and thickening the SC; exerts anti-inflammatory effect
Pre/Probiotics	Improve skin barrier by decreasing TEWL and increasing ceramide levels

TEWL: Transepidermal water loss; AMP: Adenosine monophosphate; SC: Stratum corneum; ROS: Reactive oxygen species.

A deeper insight into the novel moisturizers

Endocannabinoids

These are increasingly used in commercial moisturizers to restore cutaneous homeostasis.[1]

Palmitoylethanolamide (PEA) is an endocannabinoid-like lipid mediator, primarily known for its anti-inflammatory, analgesic, and neuroprotective properties.[2]

Clinical evidence[3]

- In a multicenter prospective cohort study of atopic dermatitis (AD) patients (n=2456), intensities of erythema, pruritus, excoriation, scaling, lichenification and dryness were significantly reduced ($p<0.001$) with PEA
- Earlier-used topical corticosteroids were omitted by 56% of all patients, and the average weekly application rate decreased by 62%

Cont'd..

Ceramides

They play an essential structural role in forming the permeability barrier.[4]

In patients with AD, the global lipid composition of stratum corneum is compromised. A topical aid that adequately delivers the key lipids that mediate barrier function (ideally provided in a ceramide-dominant proportion) is essential.[4]

Clinical evidence[5]

In a 50-center, open-label, interventional study on patients with AD (n=207):

- ~50% of the subjects achieved success with investigator global assessment, after three weeks of treatment with the ceramide-dominant, physiologic lipid barrier repair emulsion
- Pruritus and quality-of-life improved during the study

Niacinamide

Niacinamide, a form of vitamin B3, has potent anti-inflammatory property. It upregulates serine palmitoyltransferase and can stimulate ceramide production[1]

Clinical evidence[6]

- Patients with AD (n=28) were instructed to apply nicotinamide cream containing 2% nicotinamide on the left forearm and white petrolatum on the right forearm, twice daily over a 4- or 8-week treatment period
- Compared to white petrolatum, niacinamide significantly decreased transepidermal water loss (TEWL) and improved stratum corneum hydration

Furfuryl derivatives

Furfuryl derivatives inhibit the production of reactive singlet oxygen ($^1O_2$) from oxygen (O_2). Furfuryl palmitate-containing emollients reduce itching, inflammation, and signs and symptoms of AD.[7]

Clinical evidence[7]

In an open-label study on patients with AD or contact dermatitis (n=40), twice-daily administration of an emollient containing furfuryl palmitate and tocopherol for 28 days led to:

- Significant reductions in disease severity scores and pruritus intensity scores
- Significant increase in quality-of-life indices

Topical probiotics

Probiotics are viable commensal microorganisms. Twice-daily application of topical probiotics improves the skin barrier.[1]

Clinical evidence[1]

Studies showed that:

- Application of *Lactobacillus brevis* or *Lactobacillus sake*-containing moisturizers resulted in decreased TEWL, xerosis, and pruritus
- *Bifidobacterium longum* lysate cream and *Roseomonas mucosa* solution yielded decreased skin sensitivity and decreased disease severity [Scoring Atopic Dermatitis (SCORAD) index], and decreased topical corticosteroid use at 10 weeks

Medical device repairing emollient creams (MDRECs)

MDRECs act primarily by improving hydration and by providing a physical shield to help restore the skin's barrier function. Unlike cosmetics, they can be applied directly to damaged skin.[8]

Clinical evidence[8]

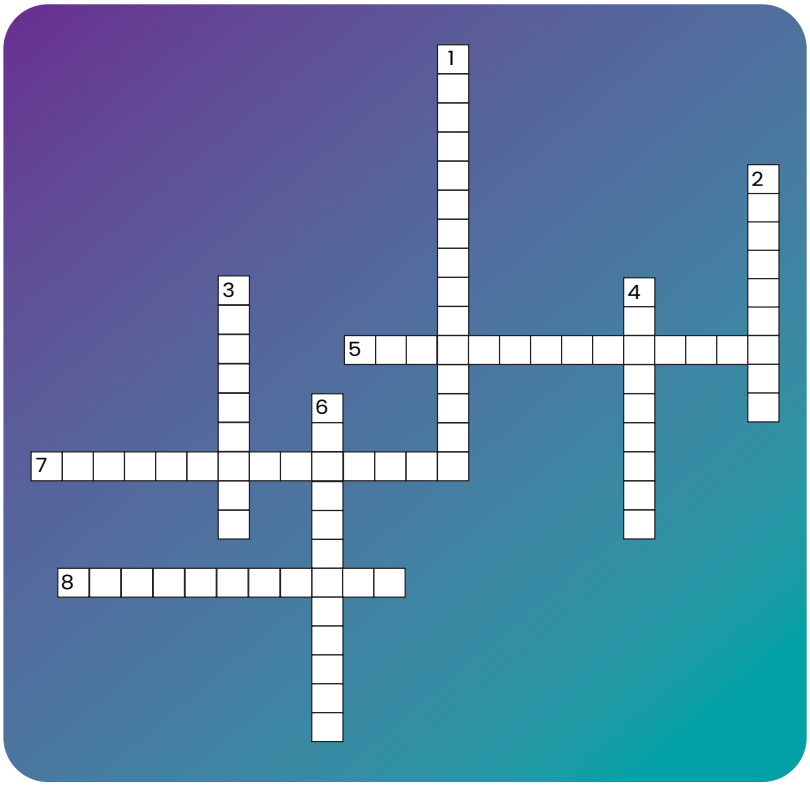
In an intra-individual randomized controlled trial in adults with moderate-to-severe AD (n=54):

- Topical corticosteroids + MDRECs combination therapy significantly reduced the SCORAD index (-24.5%) when compared to topical corticosteroids alone (-14.4%)
- All secondary measures of lesion severity decreased with topical corticosteroids + MDRECs than topical corticosteroids alone

"A shift from traditional moisturizers to those with bioactive ingredients, such as cannabinoids, ceramides, niacinamide, etc., opens novel therapeutic options for patients with barrier-defective cutaneous conditions."

References: 1. Chandan N, Rajkumar JR, Shi VY, *et al.* A new era of moisturizers. J Cosmet Dermatol. 2021;20(8):2425– 2430. **2.** Clayton P, Subah S, Venkatesh R, *et al.* Palmitoyleth anolamide: A potential alternative to cannabidiol. J Diet Suppl. 2023;20(3):505-530. **3.** Eberlein B, Eicke C, Reinhardt HW, *et al.* Adjuvant treatment of atopic eczema: Assessment of an emollient containing N-palmitoylethanolamine (ATOPA study). J Eur Acad Dermatol Venereol. 2008;22(1):73–82. **4.** Vanessa VV, Kammal WSLWA, Lai ZW, *et al.* A review of moisturizing additives for atopic dermatitis. Cosmetics. 2022;9(4):75. **5.** Kircik LH, Del Rosso JQ, Aversa D. Evaluating clinical use of a ceramide-dominant, physiologic lipid- based topical emulsion for atopic dermatitis. J Clin Aesthet Dermatol. 2011;4(3):34–40. **6.** Soma Y, Kashima M, Imaizumi A, *et al.* Moisturizing effects of topical nicotinamide on atopic dry skin. Int J Dermatol. 2005;44(3):197–202. **7.** Hebert AA. Real-world evidence of an emollient device for atopic and contact dermatitis in pediatric to adult patients - Data from a post-marketing surveillance. Clin Cosmet Investig Dermatol. 2022;15:1797–1803. **8.** Rossi AB, Bacquey A, Nocera T, *et al.* Efficacy and tolerability of a medical device repairing emollient cream associated with a topical corticosteroid in adults with atopic dermatitis: An open-label, intra-individual randomized controlled study. Dermatol Ther (Heidelb). 2018;8(2):217–228.

CROSSWORD & QUIZ



ACROSS

5. Basophils and group 2 _____ _____ cells are critical sources of type 2 cytokines in the pathophysiology of AD.
7. Regular _____ is recommended by the American Academy of Dermatology for the maintenance of healthy skin, and prevention/worsening of skin diseases.
8. This is a bioactive ingredient of moisturizers that upregulates serine palmitoyl transferase and promotes ceramide synthesis.

DOWN

1. _____, the thickening of the skin and an increase in skin markings, is a characteristic feature of atopic dermatitis.
2. These make up for half of the lipids present in the skin.
3. Loss-of-function mutations in this gene are associated with early-onset atopic dermatitis.
4. _____, a monoclonal antibody, is a dual IL-4 and IL-13 blocker approved by the FDA for atopic dermatitis treatment.
6. This IL-13 antagonist is FDA-approved for the treatment of moderate-to-severe atopic dermatitis in adults, whose disease is inadequately controlled with topical therapies.

Answers: Across: 5. Innate lymphoid; 7. Moisturization; 8. Niacinamide **Down:** 1. Lichenification; 2. Ceramides; 3. Filaggrin; 4. Dupilumab; 6. Tralokinumab

1. Which of the following statements about the diagnosis of AD is incorrect?

A. If a patient is not responding to treatment, the diagnosis of AD should be re-evaluated, and other conditions should be considered.
B. The clinical manifestation of AD varies significantly based on the patient's age and disease activity.
C. The routine use of oral antibiotic therapy has been shown to reduce the severity of AD.
D. In adolescents, atopic dermatitis is characterized by less exudation and often presents with lichenified plaques in a flexural distribution.

2. Which skin disorder, often resembling atopic dermatitis, needs to be excluded during the differential diagnosis?

A. Erythema annulare centrifugum
B. Fixed drug eruptions
C. Psoriasis
D. Rosacea

3. Among the following cutaneous manifestations, which one is not commonly associated with AD?

A. Centrofacial pallor
B. White dermographism
C. Thickening of the lateral portion of the eyebrows
D. Pityriasis alba

4. Which statement concerning the management of AD during pregnancy is accurate?

A. Methotrexate treatment should be discontinued before conception in individuals with severe AD.
B. Psoralen plus ultraviolet A therapy may be continued before conception.
C. The use of orally administered antihistamines for pruritus control should be avoided during pregnancy.
D. Hydrocortisone should be avoided as the initial choice when topical corticosteroids are necessary for AD during pregnancy due to the potential for adrenal suppression.

Answers

1. C; 2. C; 3. C; 4. A