

More than just skin deep: atopic dermatitis guidelines and update in 2019  
(Handout: Price, HN; 2019)

Guidelines:

**Eichenfield LF, Boguniewicz M, Simpson EL, Russell JJ, Block JK, Feldman SR, Clark AR, Tofte S, Dunn JD, Paller AS. Translating Atopic Dermatitis Management Guidelines Into Practice for Primary Care Providers. Pediatrics. 2015 Sep;136(3):554-65. doi: 10.1542/peds.2014-3678. Epub 2015 Aug 3. Review. PubMed PMID: 26240216.**

Eichenfield LF, Ahluwalia J, Waldman A, Borok J, Udkoff J, Boguniewicz M. Current guidelines for the evaluation and management of atopic dermatitis: A comparison of the Joint Task Force Practice Parameter and American Academy of Dermatology guidelines. *J Allergy Clin Immunol*. 2017 Apr;139(4S):S49-S57. doi: 10.1016/j.jaci.2017.01.009. Review. PubMed PMID: 28390477.

Sidbury R, Tom WL, Bergman JN, Cooper KD, Silverman RA, Berger TG, Chamlin SL, Cohen DE, Cordoro KM, Davis DM, Feldman SR, Hanifin JM, Krol A, Margolis DJ, Paller AS, Schwarzenberger K, Simpson EL, Williams HC, Elmets CA, Block J, Harrod CG, Smith Begolka W, Eichenfield LF. Guidelines of care for the management of atopic dermatitis: Section 4. Prevention of disease flares and use of adjunctive therapies and approaches. *J Am Acad Dermatol*. 2014 Dec;71(6):1218-33. doi: 10.1016/j.jaad.2014.08.038. Epub 2014 Sep 26. PubMed PMID: 25264237; PubMed Central PMCID: PMC4430554.

Eichenfield LF, Tom WL, Berger TG, Krol A, Paller AS, Schwarzenberger K, Bergman JN, Chamlin SL, Cohen DE, Cooper KD, Cordoro KM, Davis DM, Feldman SR, Hanifin JM, Margolis DJ, Silverman RA, Simpson EL, Williams HC, Elmets CA, Block J, Harrod CG, Smith Begolka W, Sidbury R. Guidelines of care for the management of atopic dermatitis: section 2. Management and treatment of atopic dermatitis with topical therapies. *J Am Acad Dermatol*. 2014 Jul;71(1):116-32. doi: 10.1016/j.jaad.2014.03.023. Epub 2014 May 9. PubMed PMID: 24813302; PubMed Central PMCID: PMC4326095.

Sidbury R, Davis DM, Cohen DE, Cordoro KM, Berger TG, Bergman JN, Chamlin SL, Cooper KD, Feldman SR, Hanifin JM, Krol A, Margolis DJ, Paller AS, Schwarzenberger K, Silverman RA, Simpson EL, Tom WL, Williams HC, Elmets CA, Block J, Harrod CG, Begolka WS, Eichenfield LF; American Academy of Dermatology. Guidelines of care for the management of atopic dermatitis: section 3. Management and treatment with phototherapy and systemic agents. *J Am Acad Dermatol*. 2014 Aug;71(2):327-49. doi: 10.1016/j.jaad.2014.03.030. Epub 2014 May 9. PubMed PMID: 24813298; PubMed Central PMCID: PMC4410179.

Eichenfield LF, Tom WL, Chamlin SL, Feldman SR, Hanifin JM, Simpson EL,

Berger TG, Bergman JN, Cohen DE, Cooper KD, Cordoro KM, Davis DM, Krol A, Margolis DJ, Paller AS, Schwarzenberger K, Silverman RA, Williams HC, Elmets CA, Block J, Harrod CG, Smith Begolka W, Sidbury R. Guidelines of care for the management of atopic dermatitis: section 1. Diagnosis and assessment of atopic dermatitis. *J Am Acad Dermatol*. 2014 Feb;70(2):338-51. doi: 10.1016/j.jaad.2013.10.010. Epub 2013 Nov 27. Review. PubMed PMID: 24290431; PubMed Central PMCID: PMC4410183.

Wollenberg A, Barbarot S, Bieber T, Christen-Zeich S, Deleuran M, Fink-Wagner A, Gieler U, Girolomoni G, Lau S, Muraro A, Czarnecka-Operacz M, Schäfer T, Schmid-Grendelmeier P, Simon D, Szalai Z, Szepietowski JC, Taïeb A, Torrelo A, Werfel T, Ring J; European Dermatology Forum (EDF), the European Academy of Dermatology and Venereology (EADV), the European Academy of Allergy and Clinical Immunology (EAACI), the European Task Force on Atopic Dermatitis (ETFAD), European Federation of Allergy and Airways Diseases Patients' Associations (EFA), the European Society for Dermatology and Psychiatry (ESDaP), the European Society of Pediatric Dermatology (ESPD), Global Allergy and Asthma European Network (GA2LEN) and the European Union of Medical Specialists (UEMS). Consensus-based European guidelines for treatment of atopic eczema (atopic dermatitis) in adults and children: part II. *J Eur Acad Dermatol Venereol*. 2018 Jun;32(6):850-878. doi: 10.1111/jdv.14888. PubMed PMID: 29878606.

Wollenberg A, Barbarot S, Bieber T, Christen-Zeich S, Deleuran M, Fink-Wagner A, Gieler U, Girolomoni G, Lau S, Muraro A, Czarnecka-Operacz M, Schäfer T, Schmid-Grendelmeier P, Simon D, Szalai Z, Szepietowski JC, Taïeb A, Torrelo A, Werfel T, Ring J; European Dermatology Forum (EDF), the European Academy of Dermatology and Venereology (EADV), the European Academy of Allergy and Clinical Immunology (EAACI), the European Task Force on Atopic Dermatitis (ETFAD), European Federation of Allergy and Airways Diseases Patients' Associations (EFA), the European Society for Dermatology and Psychiatry (ESDaP), the European Society of Pediatric Dermatology (ESPD), Global Allergy and Asthma European Network (GA2LEN) and the European Union of Medical Specialists (UEMS). Consensus-based European guidelines for treatment of atopic eczema (atopic dermatitis) in adults and children: part I. *J Eur Acad Dermatol Venereol*. 2018 May;32(5):657-682. doi: 10.1111/jdv.14891. PubMed PMID: 29676534.

Good reviews:

Waldman AR, Ahluwalia J, Udkoff J, Borok JF, Eichenfield LF. Atopic Dermatitis. *Pediatr Rev*. 2018 Apr;39(4):180-193. doi: 10.1542/pir.2016-0169. Review. PubMed PMID: 29610426.

Fleischer DM, Udkoff J, Borok J, Friedman A, Nicol N, Bienstock J, Lio P, Tollefson MM, Eichenfield LF. Atopic dermatitis: skin care and topical therapies.

Semin Cutan Med Surg. 2017 Sep;36(3):104-110. doi: 10.12788/j.sder.2017.035. PubMed PMID: 28895956.

Yang EJ, Sekhon S, Sanchez IM, Beck KM, Bhutani T. Recent Developments in Atopic Dermatitis. Pediatrics. 2018 Oct;142(4). pii: e20181102. doi: 10.1542/peds.2018-1102. Review. PubMed PMID: 30266868.

Updates:

Boguniewicz M, Alexis AF, Beck LA, Block J, Eichenfield LF, Fonacier L, Guttman-Yassky E, Paller AS, Pariser D, Silverberg JI, Lebwohl M. Expert Perspectives on Management of Moderate-to-Severe Atopic Dermatitis: A Multidisciplinary Consensus Addressing Current and Emerging Therapies. J Allergy Clin Immunol Pract. 2017 Nov - Dec;5(6):1519-1531. doi: 10.1016/j.jaip.2017.08.005. Epub 2017 Sep 29. Review. PubMed PMID: 28970084.

Systemic therapy:

Simpson EL, Bruin-Weller M, Flohr C, Ardern-Jones MR, Barbarot S, Deleuran M, Bieber T, Vestergaard C, Brown SJ, Cork MJ, Drucker AM, Eichenfield LF, Foelster-Holst R, Guttman-Yassky E, Nosbaum A, Reynolds NJ, Silverberg JI, Schmitt J, Seyger MMB, Spuls PI, Stalder JF, Su JC, Takaoka R, Traidl-Hoffmann C, Thyssen JP, van der Schaft J, Wollenberg A, Irvine AD, Paller AS. When does atopic dermatitis warrant systemic therapy? Recommendations from an expert panel of the International Eczema Council. J Am Acad Dermatol. 2017 Oct;77(4):623-633. doi: 10.1016/j.jaad.2017.06.042. Epub 2017 Aug 10. PubMed PMID: 28803668.

Bleach bathes:

Asch S, Vork DL, Joseph J, Major-Elechi B, Tollefson MM. Comparison of bleach, acetic acid, and other topical anti-infective treatments in pediatric atopic dermatitis: A retrospective cohort study on antibiotic exposure. Pediatr Dermatol. 2019 Jan;36(1):115-120. doi: 10.1111/pde.13663. Epub 2018 Oct 10. PubMed PMID: 30303549.

**TABLE 4. Bleach Bath Instructions for Caregivers**

1. Add common 6% household bleach to a bathtub full of water (8.75% bleach is one-third more concentrated; use one-third more water or one-third less bleach)
2. Measure the amount of bleach before adding it to the bathwater
3. For a full tub of water, use  $\frac{1}{2}$  cup; for a half-full tub of water, add  $\frac{1}{4}$  cup of bleach
4. While the tub is filling, pour the bleach into the water
5. Wait until the bath is fully drawn before placing the child in the tub
6. Never apply bleach directly on a child's skin
7. Soak for 10 min
8. Pat the child's skin dry after the bath
9. If the child uses eczema medication, apply it immediately after the bath, then moisturize the child's skin
10. As an alternative to bleach baths, comparable dilute bleach solutions can be made using 1 tsp of bleach per gallon of water. This may be useful in spray bottles for use in showers (eg, for adolescents) or for smaller baby bathtubs. Alternatively, commercial sodium hypochlorite products that seem to have similar effects as bleach baths are available.

**TABLE 1. Essential, Important, and Associated Features Used for the Clinical Diagnosis of Atopic Dermatitis**

ESSENTIAL FEATURES	IMPORTANT FEATURES	ASSOCIATED FEATURES
Both must be present:	Add support to the diagnosis, observed in most cases of AD:	Suggestive of AD, but too nonspecific to be used for defining or detecting AD in research or epidemiologic studies:
1. Pruritus	1. Early age at onset	1. Atypical vascular responses (eg, facial pallor, white dermographism, delayed blanch response)
2. Eczema (acute, subacute, chronic)	2. Atopy	2. Keratosis pilaris/pityriasis alba/hyperlinear palms/ichthyosis
A. Typical morphology and age-specific patterns:	A. Personal and/or family history	3. Ocular/periorbital changes
a. Infants/children: facial, neck, and extensor involvement	B. Immunoglobulin E reactivity	4. Other regional findings (eg, perioral changes/periauricular lesions)
b. Any age group: current or previous flexural lesions	3. Xerosis	5. Perifollicular accentuation/lichenification/prurigo lesions
c. Sparing of the groin and axillary regions		
B. Chronic or relapsing history		

AD=atopic dermatitis.

Adapted with permission from Eichenfield LF, Boguniewicz M, Simpson EL, et al. Translating atopic dermatitis management guidelines into practice for primary care providers. Pediatrics. 2015;136(3):554-565.

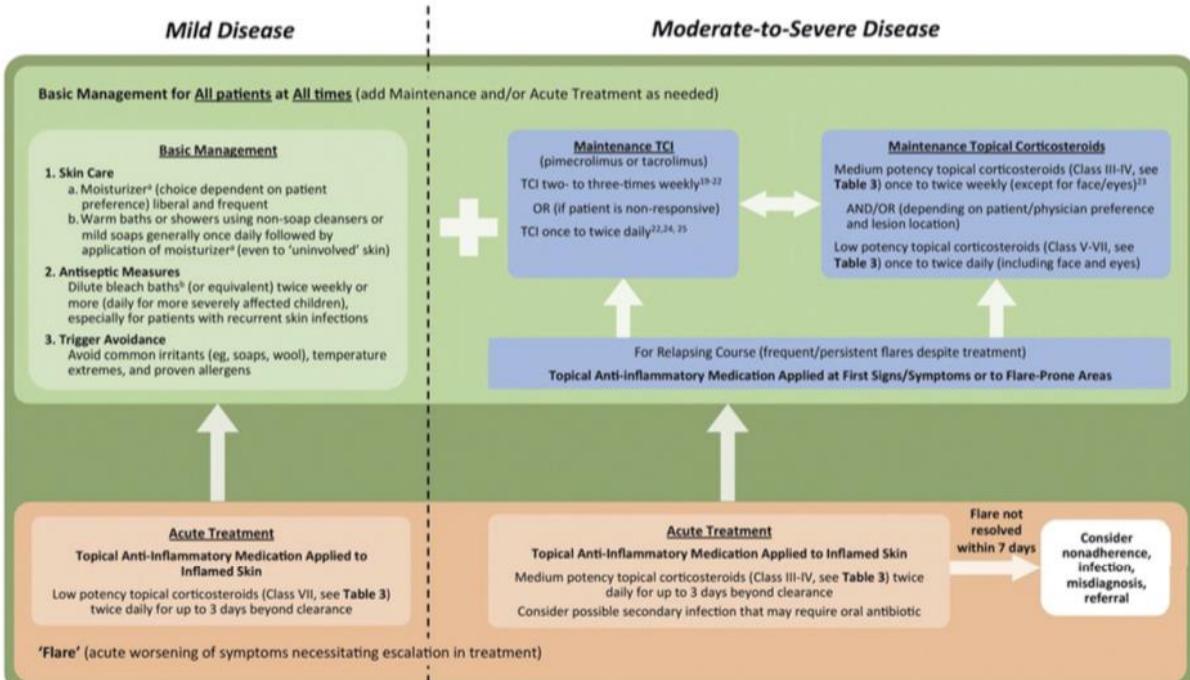
**TABLE 2. Core Differential Diagnosis and Less Common Diagnoses of Atopic Dermatitis**

<b>CORE DIFFERENTIAL DIAGNOSIS</b>		
<ul style="list-style-type: none"> <li>• Scabies</li> <li>• Psoriasis</li> <li>• Ichthyoses</li> <li>• Seborrheic dermatitis</li> <li>• Contact dermatitis (irritant or allergic)</li> <li>• Cutaneous T-cell lymphoma</li> <li>• Photosensitivity dermatoses</li> <li>• Immunodeficiency diseases</li> <li>• Erythroderma of other causes</li> </ul>		
<b>OTHER DIAGNOSES TO CONSIDER</b>		
<b>Nutritional and Metabolic Disorders</b>	<b>Primary Immunodeficiency Disorders</b>	<b>Other Disorders</b>
<ul style="list-style-type: none"> <li>• Acrodermatitis enteropathica</li> <li>• Biotin deficiency</li> <li>• Cellac disease</li> <li>• Essential fatty acid deficiency</li> <li>• Hartnup disease</li> <li>• Hurler syndrome</li> <li>• Phenylketonuria</li> <li>• Prolidase deficiency</li> <li>• Zinc deficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Agammaglobulinemia</li> <li>• Hyperimmunoglobulin E syndrome</li> <li>• Omenn syndrome</li> <li>• Severe combined immunodeficiency disorder</li> <li>• Wiskott-Aldrich syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• Ataxia-telangiectasia</li> <li>• Langerhans cell histiocytosis</li> <li>• Netherton syndrome</li> </ul>

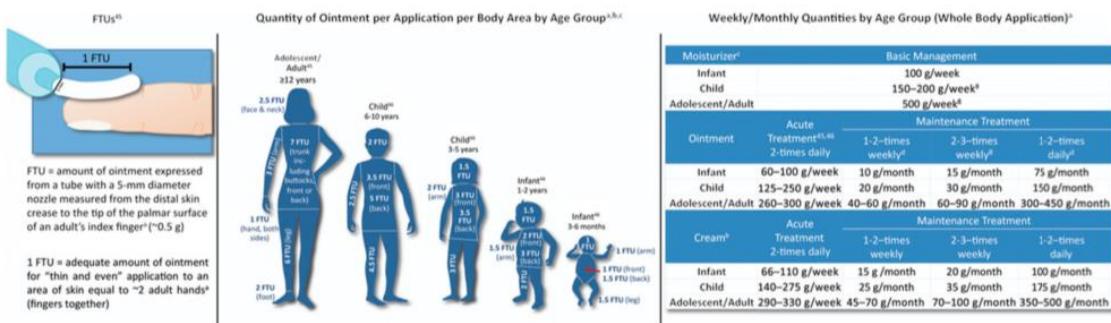
**TABLE 3. Topical Corticosteroids Ranked by Potency (from Most Potent to Least Potent)**

GROUP	GENERIC NAME (BRAND NAME)	VEHICLE	CONCENTRATION, %
I	<ul style="list-style-type: none"> <li>• Betamethasone dipropionate (Diprolene)</li> <li>• Clobetasol propionate (Temovate)</li> <li>• Diflunisal acetate (Psorcon)</li> <li>• Halobetasol propionate (Ultravate)</li> </ul>	Ointment Cream, ointment, lotion Ointment Cream, ointment	0.05 0.05 0.05 0.05
II	<ul style="list-style-type: none"> <li>• Amcinonide (Cyclocort)</li> <li>• Betamethasone dipropionate (Diprosone/Maxivate)</li> <li>• Desoximetasone (Topicort)</li> <li>• Fluocinonide (Lidex)</li> <li>• Mometasone furoate (Elocon)</li> <li>• Triamcinolone (Aristocort)</li> </ul>	Ointment Ointment Cream, ointment Gel Cream, ointment, gel, solution Ointment Cream	0.1 0.05 0.25 0.5 0.05 0.1 0.5
III	<ul style="list-style-type: none"> <li>• Amcinonide (Cyclocort)</li> <li>• Betamethasone dipropionate (Diprosone)</li> <li>• Betamethasone valerate (Valisone)</li> <li>• Diflunisal acetate (Psorcon)</li> <li>• Fluticasone propionate (Cultivate)</li> <li>• Triamcinolone acetonide (Aristocort)</li> </ul>	Cream, lotion Cream Ointment Cream Ointment Ointment	0.1 0.05 0.1 0.05 0.005 0.1
IV	<ul style="list-style-type: none"> <li>• Flucinolone acetonide (Synalar)</li> <li>• Hydrocortisone valerate (Westcort)</li> <li>• Mometasone furoate (Elecon)</li> <li>• Triamcinolone acetonide (Kenalog, Aristocort)</li> </ul>	Ointment Ointment Cream, lotion Cream	0.025 0.2 0.1 0.1
V	<ul style="list-style-type: none"> <li>• Betamethasone dipropionate</li> <li>• Betamethasone valerate (Valisone)</li> <li>• Fluticasone acetonide (Synalar)</li> <li>• Fluticasone propionate (Cutivate)</li> <li>• Hydrocortisone butyrate (Locoid)</li> <li>• Hydrocortisone valerate (Westcor)</li> <li>• Prednicarbate (Dermatop)</li> </ul>	Lotion Cream Cream Cream Cream, ointment, lotion Cream Cream	0.05 0.1 0.025 0.05 0.2 0.2 0.1
VI	<ul style="list-style-type: none"> <li>• Alclometasone dipropionate (Adcavate)</li> <li>• Betamethasone valerate</li> <li>• Desonide (DesOwen/Tridesilon)</li> <li>• Fluocinolone acetonide (Derma-Smoothe/FS) (Synalar)</li> <li>• Triamcinolone acetonide (Aristocort, Kenalog)</li> </ul>	Cream, ointment Lotion Cream, ointment Oil Solution Cream	0.05 0.1 0.05 0.01 0.01 0.025
VII	<ul style="list-style-type: none"> <li>• Hydrocortisone acetate</li> <li>• Methylprednisolone acetate</li> <li>• Dexamethasone sodium phosphate</li> </ul>	Cream Cream Cream	1 0.25 0.05

Adapted with permission from Eichenfield LF, Boguniewicz M, Simpson EL, et al. Translating atopic dermatitis management guidelines into practice for primary care providers. Pediatrics. 2015;136(3):554–565.



**Figure 1.** Proposed treatment model/eczema action plan for pediatricians and other primary care providers. (2) TCI=topical calcineurin inhibitor.<sup>a</sup>As tolerated during flare; direct use of moisturizers on inflamed skin may be poorly tolerated; however, bland petrolatum is often tolerated when skin is inflamed. Note: Topical phosphodiesterase-4s were not approved at the time of algorithm development. (Reprinted with permission from Eichenfield LF, Boguniewicz M, Simpson EL, et al. Translating atopic dermatitis management guidelines into practice for primary care providers. *Pediatrics*. 2015;136(3):558.)



**FIGURE 2**

Topical application amounts. <sup>a</sup>Measurements/quantities are relative to adult hand/finger sizes, regardless of age group. <sup>b</sup>Quantity for creams should be increased by ~10% over ointment.<sup>30</sup> <sup>c</sup>Quantity for moisturizers may exceed the suggested values. <sup>d</sup>Estimated based on monthly amounts for 2 to 3 times weekly application per Ring et al.<sup>7</sup> FTU, fingertip unit.