



The Latest in **PEDIATRIC DERMATOLOGY:**
FROM INFANTS TO ADOLESCENTS

NON-PHARMACOLOGIC STRATEGIES FOR PEDIATRIC ATOPIC DERMATITIS

Clinical Advances & New Insights in the Management of Pediatric AD - Educational Primer

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Emollient therapy

GOAL

TO MAINTAIN WELL-
MOISTURIZED SKIN
AND PREVENT
FLARES

WHEN

DAILY

WHERE

ENTIRE SKIN, NOT
JUST AFFECTED
AREAS



Gentle skin care for infants

- Safe, gentle, effective
- Repairs and replenishes the defective barrier
- Protects newborn from developing allergic contact dermatitis and systemic IgE sensitization via increased absorption of allergens through the defective barrier
- Topical products with risk of systemic toxicity due to percutaneous absorption should be avoided or used carefully



Newborn bathing & skin cleansing recommendations

- Avoid hypothermia
- Take care to avoid eye irritation from topical products
- Gentle soap or cleanser with neutral or mildly acidic pH
- Fragrance free, dye-free, no masking fragrance and less preservatives



Gentle skin care in AD

- Daily to every other day bath or shower using lukewarm water
- Short duration, no longer than 5 -10 minutes
- Avoid scrubbing or using loofahs or sponges
- Minimal use of soap or cleanser at the end of bath
- Pat skin dry (don't rub), and leave it moist
- Immediate and generous application of an emollient within 5 minutes after bathing



Why moisturize?

- Improves discomfort of xerosis
- Improves barrier function
- May lessen severity of AD
- May lessen dependence on pharmacologic interventions (e.g. reduce use of topical corticosteroids)



Moisturizer Classification

- Emollients = water retention; smooths skin
 - (colloidal oatmeal, shea butter, stearic acid, elastin)
- Humectants = attract and bind water
 - (glycerin, urea, sorbitol, hyaluronic acid)
- Occlusives = hydrophobic film that retards transepidermal water loss
 - (lanolin, petrolatum, mineral oil, silicone, paraffin)



Which moisturizer is best?

- Moisturizers contain varying amounts of oil & water
- Ointment = pure grease
- Cream = oil > water with added preservatives/stabilizers
- Lotion = (less) oil < water
Less recommended as frequent re-application needed
- Moisturizing effect: Ointment > Cream > Lotion



The ideal moisturizer

- Safe
- Effective
- Affordable
- Fragrance Free
- Free of Sensitizing Chemicals
- Restores Barrier and Function



Examples of moisturizers

- **Ointments**

- Vaseline 100% pure petroleum jelly, Aquaphor ointment, Cerave Healing ointment, Vanicream moisturizing ointment

- **Creams**

- Eucerin eczema relief, Aveeno eczema therapy moisturizing cream, Stelatopia emollient cream, Vanicream cream, Lipikar Balm AP+, Exederm, Bioderma Atoderm



Ingredients to be Avoided

Abrasives:

- benzoyl peroxide
- urea
- mica
- silica
- bismuth oxychloride
- polyethylene beads

Preservatives:

- benzoic acid
- sorbic acid
- lactic acid

Fragrance:

- colognes
- herb extracts
- masking fragrance
- perfume

Other:

- Camphor
- Octocrylene

Formaldehyde Releasers:

- quaternium-15
- 2-bromo-1,3-nitropropane diol
- diazolidinyl urea
- imidazolidinyl urea
- DMDM hydantoin

Penetrants:

- low-molecular weight glycols
(in high concentration levels)
- hydroxyl acids
- retinoids

Volatile Solvents:

- ethanol
- volatile propellants

Ingredients not Allowed

Humectant:

- propylene glycol

Preservatives:

- Methylchloroisothiazolinone (MCI)
- Methylisothiazolinone (MI)
- salicylic acid
- formaldehyde
- methyl dibromo glutaronitrile

Dyes:

- D and C yellow #11
- F, D and C blue #1
- F, D and C yellow #5 (tartrazine)





510(k) medical devices approved for AD

- Combinations of ceramides, cholesterol and fatty acids
- Claim to restore skin barrier
- Higher cost compared to OTC moisturizer
 - Mimyx[®] cream
 - Atopiclair[®] nonsteroidal cream
 - Eleton[™] cream
 - EpiCeram[®] skin barrier emulsion



Prophylactic use of emollients

- Decreases transepidermal water loss
- Restores skin barrier function
- Prevents atopic dermatitis in infants at risk
- AD guidelines support moisturizer use



Pilot Studies: Infants at high risk for AD

- 124 newborns in the U.S. and U.K.
- Randomized: daily emollient vs usual infant skin care
- Started by age 3 weeks
- After 6 months physician diagnosed AD: 43% control group vs 22% emollient group (relative risk reduction of 50%)



Pilot Studies: Infants at high risk for AD

- 118 Japanese infants
- Randomized: daily emollient vs usual skin care
- Started the first week of life
- By 32 weeks, AD developed in infants 47% (control) vs 32% (emollient group)



A Global Review on the Risk Factors and Management of Early Atopic Dermatitis in Children Ages 0 to 2 Years Old

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ABSTRACT

Introduction: Atopic dermatitis (AD) is a chronic, relapsing skin disease starting typically in atopic-prone children between 3–6 months of age, with most children having developed AD by the age of 5 years. Intense itching leads to sleep disturbance, especially in younger children and toddlers.

This review explores early intervention in infants and young children with AD by controlling skin barrier function and inflammation at the earliest time point using a moisturizer and a proactive treatment.

Methods: A working group of experienced clinicians managing pediatric populations with AD convened for a meeting. The panel reviewed the literature surrounding early intervention in infants and young children with AD and developed and discussed clinical questions aimed at optimizing clinical outcomes.

Results: Complex gene/immune system/environment interactions are involved in AD development. Epidermal barrier defects play a central role in the condition, with various studies showing impairment of skin barrier function at birth may precede clinical AD. Dynamic changes take place in the amounts of skin lipids during infancy.

Studies confirm that daily use of a moisturizer from birth onwards may offer benefits in improving skin barrier function and possibly prevention of AD, especially in high-risk, atopic prone newborns. Plant-based moisturizers were shown to be safe and effective when applied in pediatric patients with AD and may provide a TCS-sparing effect while improving skin condition.

Conclusion: Dry skin conditions during infancy may predict the subsequent development of AD. Consequently, emollient therapy from

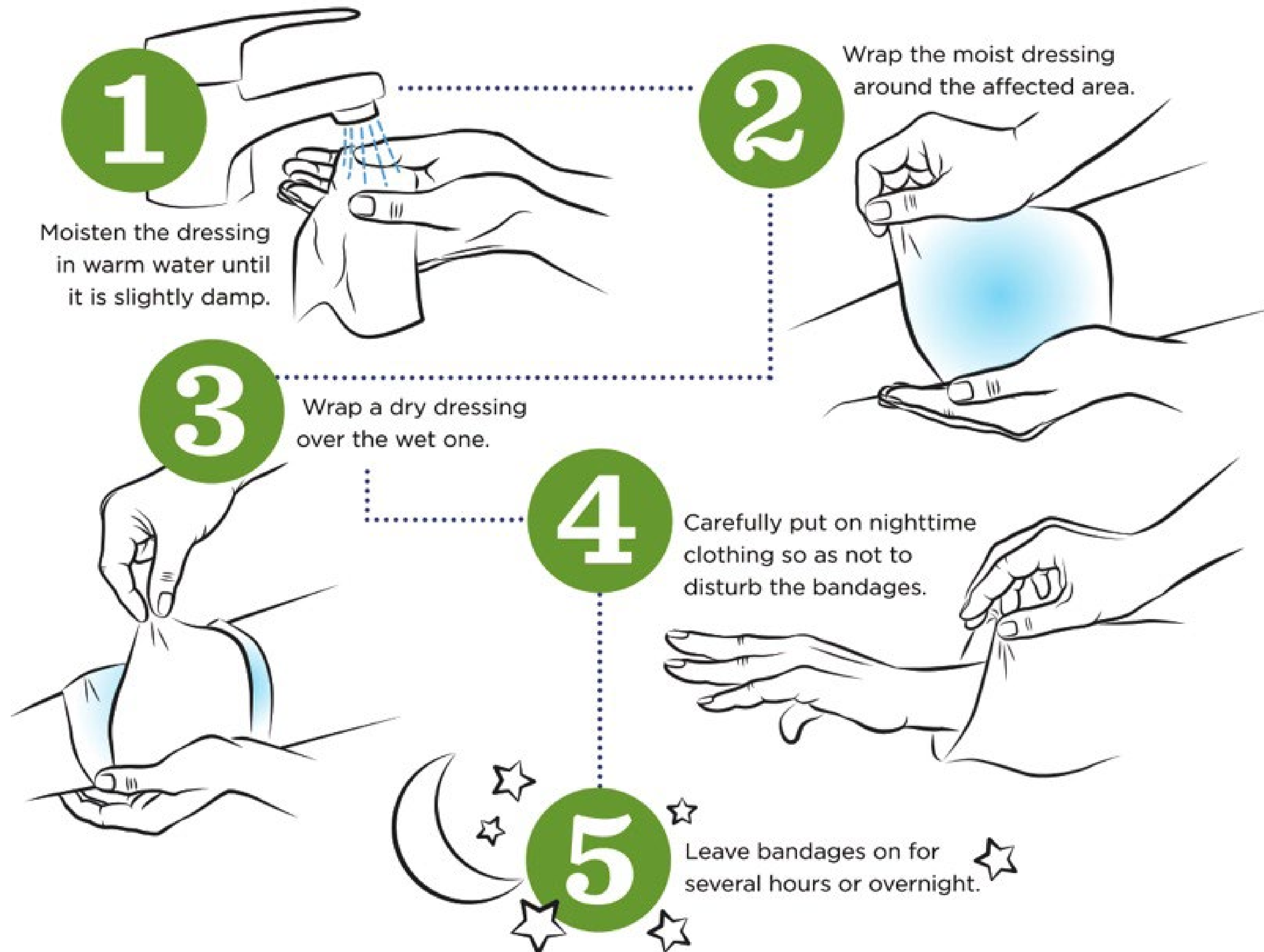


Wet dressings or wet wraps

- Very helpful to calm down severe flares
- Cooling sensation decreases pruritus
- Occlusion potentializes absorption of topical therapies
- Improves moisturization of skin
- Occlusion also may help reduce manipulation and scratching of the affected skin



Wet wraps are best done in the evening after bathing, moisturizing and applying medication. You can use clean, cotton clothing as a dressing and pajamas or a onesie on top if the eczema is widespread, cotton gloves or socks if it is not.





Soaps and cleansers

- Use of harsh soaps can make controlling AD harder
- Avoid the soaps containing:
 - lipid solvents (acetone, alcohols, surfactants) - can result in xerosis, irritation, “rough skin”, scaling, erythema, pruritus
 - perfumes, dyes, preservatives - can result in allergic contact dermatitis
 - Alkaline pH, which contributes to tightness sensation on skin and disrupts the protective acid mantle
- Prefer non-soap cleansers – these are made with synthetic surfactants that promote gentle cleansing without excessive dryness



Bathing to treat and prevent infections

Swimming in chlorinated pool or adding dilute bleach to bath about twice weekly may help reduce bacterial load and decrease number and severity of flares

INGREDIENTS



Bathtub



Water



Regular or "unconcentrated" household bleach (5.25% sodium hypochlorite)



Measuring spoons/cups

DIRECTIONS

STEP

1 Fill bath tub with lukewarm water

STEP

2 Add 1/2 cup bleach for a full standard-size bathtub of water (approx. 40 gallons); 1/4 cup for a half bathtub of water (approx. 20 gallons); 2 tablespoons for a baby bathtub (approx. 4 gallons)

STEP

3 Get in and soak for 10 minutes

STEP

4 Rinse off completely with warm tap water

STEP

5 Proceed with daily skin care routine

THINGS TO REMEMBER

DO NOT use excessively hot or cold water

DO NOT add any other products or ingredients to the bath

DO NOT soak for longer than 15 minutes

DO NOT submerge your head or face under the water

DO consult with your health care provider first before trying a bleach bath or giving one to your child for the first time



Other bath additives

- Some patients may find soothing to add oatmeal or Epsom salts to the bath water
- These are usually well-tolerated
- Oatmeal can help with xerosis and pruritus
- Epsom salts may decrease pain caused by fissures or excoriations
- More information can be found at <https://nationaleczema.org/eczema/treatment/bathing/>



Counseling parents

- There is no “cure” for AD, although some infants may outgrow it over the years
- Waxing and waning course is expected, but consistent treatment and maintenance will help decrease frequency of flare ups
- Recognizing and avoiding triggers can also help minimize flares
- Moisturizers play an important role in maintenance
- Appropriate topical treatments must be safe and effective



Educate and empower

- Take the time to talk with patient and family about AD
- Use written handouts and action plans
- AD plan of care can be extensive and time consuming, work with family to make it fit into their daily routine, adapt as needed
- The National Eczema Association website is a great resource for providers and patients (www.nationaleczema.org)
- Close follow up after the initial visit
- Control of disease is possible!