The Atopic Dermatitis Spectrum
State of the Art Clinical Management

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Disclosure

• Research and Educational Grants:
  – Novartis-Genentech
  – Alcon
  – Dyax
  – Lev
  – Allerderm

• Speaker’s Bureau
  – GlaxoSmithKline
  – Baxter
Atopic Dermatitis

Objectives:
1. Be able to describe treatment strategies for moderate to severe atopic dermatitis
III. Infectious Causes:

**BACTERIAL SUPERINFECTION:** Honey-colored crustating, pustules, weeping

Comments: ____ skin & nasal cultures from child & caretaker; ____ empiric antibiotics/inntranasal Bactrofen

**ECZEMA HERPETICUM:** Fever, lymphadenopathy, vesicles, erosions

Comments: ____ consider Tzanck prep, culture, acyclovir

**DERMATOPHYTE INFECTION:** T. corporis, T. capitis. T. pedis etc.

Comments: ____ consider fungal culture, KOH prep

IV. Immunodeficiency:

**WISKOTT-ALDRICH SYNDROME:** Male

Petechiae, epistaxis, bloody diarrhea or hx of intracranial bleeding

Recurrent otitis media

Comments: ____ Dx: decreased platelets, increased bleeding time, IgA & IgE, decreased IgM, nl IgG

**HYPERIMMUNOGLOBULIN E SYNDROME:**

Recurrent infections of skin, lower respiratory tract, ears, eyes & sinuses

Coarse facial features

Comments: ____ Dx: persistent IgE>2000 IU/ml; leukocyte chemotactic test

**NETHERTON SYNDROME:**

Poor hair growth (trichorrhexis invaginata/nodosas)

Ichthyasis linearis circumflexa (double-edged scale)

Comments: ____ Dx: microscopic examination of hair (bamboo stalk appearance)

**CHRONIC GRANULOMATOUS DISEASE:** Male

Recurrent infections, rhiinits, stomatitis, blepharitis, keratoconjunctivitis, pneumonia, diarrhea, visceral abscess

Hospitalizations

Comments: ____ Dx: oxidative burst analysis

**INFECTIVE DERMATITIS W/HTLV-1:** Staph/Strep super infection resistant to treatment

Caribbean/Japanese origin Location:

Comments: ____ Consider HTLV-1 antibodies, PCR

**HIV INFECTION:** Child/parent risk factors/known HIV + status

Recurrent opportunistic infections/failure to thrive

Comments: ____ Dx: HIV-1 antibodies/CD4 count/viral load

**BIOTIN DEFICIENCY:** Intertriginous involvement with alopecia and recurrent candidal infections

Comments: ____ Dx: PABA levels (nl 3.5-12.0 n mol/min/ml)

V. Other:

PLANS

LABS:

TREATMENT:

RETURN APPOINTMENT _______ M.D. Signature

forms/intractable pediatric atopic dermatitis checklist
Workup for Intractable AD

I. General Principles:
   A. GENERAL SKIN CARE COMPLIANCE
      I. bathing (duration, frequency, soap used)
      II. moisturization methods
      III. compliance w/ advice or meds
      IV. clothing (cotton/wool)
   
   B. SLEEPING PATTERNS:
      I. difficulty falling asleep
      II. daytime fatigue
      III. frequent night awakening 2° to scratching
   
   C. PSYCHOSOCIAL:
      I. marital status/problems
      II. financial status/parental employment
      III. 1° caretaker of child
      IV. number of children/ sibling relationships
      V. other health problems in child & siblings
      VI. day care/ school problems
      VII. child affect
      VIII. child-parent conflict/child's motivations for Rx
II. Hypersensitivity

A. FOOD ALLERGY:
   Bottle (formula)/breastfed
   Solid food introduction & sequence
   Food hypersensitivity
      -majority react to \(<3\) food on challenge

B. AEROALLERGY:
   Carpet
   Beddings
   Pets
   Cigarette smoke

C. CONTACT ALLERGY:
   Aggravated by steroid/ moisturizer use
   Known nickel/contact allergy
III. Infectious Causes

A. BACTERIAL SUPERINFECTION:
Honey-colored crusting, pustules, weeping
Dx: consider skin and nasal cultures from child & caretaker
Empiric antibiotics/intranasal Bactroban

B. ECZEMA HERPETICUM:
Fever, lymphadenopathy, vesicles, erosions
Dx: consider Tzanck prep, culture, acyclovir

C. DERMATOPHYTE INFECTION:
Scaly rash or nail changes
Dx: consider fungal culture, KOH prep
• Malassezia (Pityrosporum) sympodialis common in seborrheic areas
• IgE antibodies vs. M. sympodialis in AD patients, mostly head and neck distribution
• Decrease AD severity in patients treated with antifungal agents

IV: Immunodeficiency:

**WISKOTT-ALDRICH SYNDROME**: Male; Infections
- Petechiae, epistaxis, bloody diarrhea or + hx of intracranial bleeding
  - Dx: ↓ platelets, ↑ bleeding time, IgA & IgE; ↓ IgM, nl IgG

**HYPERIMMUNOGLOBULIN E SYNDROME**: coarse facial features
- Recurrent infections of skin, lower respiratory tract, ears, eyes, sinuses
  - Dx: persistent IgE>2000 IU/mL; leukocyte chemotactic test

**NETHERTON SYNDROME**: poor hair growth (trichorrhexis invaginata/nodosa)
- Ichthyosis linearis circumflexa (double-edged scale)
  - Dx: microscopic examination of hair (bamboo stalk appearance)

**CHRONIC GRANULOMATOUS DISEASE**: male
- Recurrent infections, stomatitis, blepharitis, keratoconjunctivitis, pneumonia, diarrhea, visceral abscesses
  - Dx: oxidative burst analysis

**INFECTIVE DERMATITIS W/HTLV-1**: Caribbean/Japanese origin
- Staph/Strep superinfection resistant to treatment
  - Dx: consider HTLV-1 antibodies, PCR

**HIV INFECTION**: child/parent risk factors/known HIV + status
- Recurrent opportunistic infections/failure to thrive
  - Dx: HIV-1 antibodies/CD4 count/viral load
Principles of Therapy

• GENERAL SUPPORTIVE CARE:
  – Skin Hydration and Barrier therapy
    • Emollients
    • Baths
    • Wet Wraps
  – Avoidance of irritants and specific allergens

• GET THE DISEASE UNDER CONTROL!
  – Anti-Inflammatory meds:
    • Strength based on disease severity
    • Stronger steroids for short bursts

• KEEP IT UNDER CONTROL
  – Steroid Sparing Agents
    • Immunomodulators (pimecrolimus, tacrolimus)
    • Immunodevices (atopiclair)
    • Proactive Treatment
Skin Hydration and Barrier Therapy

Emollients

- Improve skin barrier function
- Reduce susceptibility to irritants
- Adding emollients to regimen strengthens failing intercellular fillagrin elements by delaying uncoiling
Why Moisturizers are Important

Regular use of topical CS can lead to disruption of epidermal barrier function by inhibiting epidermal synthesis of fatty acids*

– alleviated by application of mixture of ceramides, free fatty acids & cholesterol**
– Support regular use of appropriate emollients

Darsow et al. ETFAD/EADV eczema task force 2009 position paper on diagnosis and treatment of atopic dermatitis. Journal compilation @2009 European Academy of Dermatology and Venereology 2010, 24, 317-328
Ingredients contributing to effective moisturizers

- **Humectants (glycerol):** attract and hold water in the skin.
- **Occlusives (petrolatum):** retard evaporation but needs to be applied on damp/wet skin.
- **Emollients (lanolin):** lubricate the stratum corneum.

Emollients and their Vehicle

Effectiveness of basic therapy is directly linked to patient adherence; therefore, cosmetic acceptance of an emollient is crucial.

**Ointment**
- For thick, fissured, lichenified skin
- Less preservative
- Aesthetically undesirable

**Cream**
- For moist intertrigenous areas
- Requires preservatives that may be sensitizing & irritating

**Solution, gel, spray, moose**
- Aesthetically elegant especially on the scalp
- Contain alcohol & propylene glycol that burn & irritate
Emollients

- Urea
  - Ammonium Lactate (Lac-Hydrin 5% or 12% Cream or lotion)
- Ceramide-Dominant lipid based emollient
  - CeraVe Cream
  - Epiceram (Rx with ceramides, cholesterol, free fatty acids 3-1-1)
  - TriCeram Cream

Chamlin SL. Ceramide-Dominant, Barrier-Repair Lipids Improve Childhood Atopic Dermatitis. Archives of Dermatology 2001;137:8
Cleansing & Skin Hydration

- Baths
- Wet Wraps
- Antiseptics
- Antibiotics
Baths

- Soak for 20 minutes
  - With or without oatmeal or baking soda
  - Quickly clean with mild wash

Or

Quick 5 min bath

- Drip dry

- Apply occlusive emollient immediately
Soaps and detergents

Mild soaps/cleansers: Vaniderm, Dove, Basis, Neutrogena, Aveeno, Purpose, Cetaphil

Antibacterial soaps: Clorhexidine, Triclosan

Detergents:
- Use liquid rather than powder
- Add a second rinse cycle

Disease Management of Atopic dermatitis: An updated practice parameter. Annals of Allergy 93:3 S1-S21, Sept 2004
Bleach Baths

31 AD pediatric patients
S Aureus eradication: Cephalexin x 14 days

Intranasal mupirocin (5 days/mo) &
sodium hypochlorite baths (0.005%)
twice weekly x 3 mos

Intranasal Petrolatum ointment
& plain water baths twice
weekly x 3 mos

• EASI scores reduced after 1 month (P = .17) & 3 months (P= .004)
  compared to placebo
• Only the body parts submerged during bathing improved but not the head
  and neck area
• Unclear whether or not the clinical effect of bleach baths can be explained
  by S. aureus reduction or astringent effects of bleach baths

Wet Wrap Therapy –
An Acute crisis intervention

After bath targeted therapy for acute flare-ups
1) Apply with emollient or steroids
2) 2 layers of “roll” gauze (wet then dry)

Benefits
– Barrier to scratching
– Decrease itch-scratch cycle
– Increase steroid penetration
– Allow rapid healing of excoriated lesions
– Decreased S. Aureaus colonization

Ped Derm 2001;18:343-348
Dermato 2006;212:66-69
Arch Dis Cild 2006;91:164-168
Evidence-based critical review of wet wrap therapy in children (grade C recommendation)

• Wet wrap therapy using cream or ointment is an efficacious short-term treatment in children with severe &/or refractory AD
• Wet wrap dressings with diluted topical corticosteroids is a more efficacious short-term treatment in children with severe and/or refractory AD than with emollients only
• Wet wrap dressings with diluted topical corticosteroids for up to 14 days is a safe treatment in children with severe and/or refractory AD, with temporary systemic bioactivity of the corticosteroids as the only reported serious side-effect
• Lowering the absolute amount of applied topical corticosteroid to once daily & further product dilution can reduce the risk of systemic bioactivity

Wrap Therapy (Left/Right)

Dermato 2006;212;66-69
Antiseptic

- May be used for patients with frequent bacterial infection
- Whole body or critical regions only
- **Triclosan** (2,4,40-trichloro-20-hydroxydiphenyl ether) 1-2%
  - antibacterial activity vs. S aureus, Klebsiella pneumonia, Proteus*
  - Resistance rarely observed**
  - pHisoderm Antibacterial Skin Cleanser, Dial® Liquid Soap, Softsoap®
    Antibacterial Liquid Hand Soap, Clearasil® Daily Face Wash,
- **Chlorhexidine gluconate 0.5-1%**
  - Hibiclens®, Hex-A-Clens®


Concerns

1. S aureus eradication on atopic skin is only temporary
2. Systemic absorption & possible long-term side effects with extensive use in severely compromised skin barrier in AD must be considered

**Conclusion:** addition of antiseptics to emollient or baths on a regular basis independent of clinical infection is reserved for:
1. special manifestations of AD (eg, weepy-type AD)
2. special circumstances (eg, mothers of small babies)
3. elevated risk for systemic infection (eg, in-dwelling catheters or chronic wounds)

Topical astringent for oozing & weeping lesions

- Drying effect
- Helps eliminate local infection
- Aluminum Acetate
  - Use as moist compress
Topical mupirocinc

- Use for localized impetiginized lesions, systemic antibiotics is more practical for extensive skin infection
- Treatment for nasal carriage

- Of note, antiinflammatory therapy alone, with either a topical corticosteroid or calcineurin inhibitor, has been shown to improve AD & reduce S. aureus colonization

Use of Oral Antibiotics in AD

- Overt infection (pustules, vesicles, furuncles)
- Superinfection (serous crusting, oozing)
- AD recalcitrant to other topical therapies
- Antibiotics
  - Cefadroxil (duricef)
  - Cephalexin (keflex)
  - Cefdinir (omnicef)
  - Trimethoprim/sulfamethoxazole
  - Tetracycline
Strategies in Use of Topical Corticosteroids

- Fluticasone propionate (Cutivate) & mometasone furoate (Elocon) are effective once a day * (increase compliance)
- Fluticasone propionate: shown to be safe & effective in children ≥ 3 mo., even on face & significant body surface area for up to 1 mo**
- Fluticasone propionate: children ≥ 3 mo. show that long term maintenance 2x a wk is safe & effective***
- FDA Approved for
  - ≥ 3 mos: desonide & fluticasone cream
  - ≥ 1 yr: alclometasone
  - ≥ 2 yrs: mometasone

****Hanifin J. Br J Dermatol 147:528-537, 2002
Topical Calcineurin Inhibitors

• Specially useful in areas prone to atrophy: eyelid, perioral, genital, axilla, inguinal
• For long term use
• Black box warning
• Proactive Tx has been shown to be safe & effective for up to one year in reducing flares
• Anti-inflammatory potency
  – 0.1% TC ~ intermediate strength CS >1% PC

When Is It Time for Systemic Therapies?

- Moderate/Severe AD
  - Failure topical agents
  - Recurrent complications (i.e. infections)
Oral Corticosteroids

- Recognized as generally effective
- Associated with dramatic rebounds
- Reserved for crisis management
  - Need strategy for long term maintenance
  - Taper the dosage
  - Intensify skin care
Other Immunosuppressive Therapies for Atopic Dermatitis

- Oral Calcineurin Inhibitors
  - Cyclosporin A
  - Tacrolimus (FK506)
  - Pimecrolimus
- Mycophenolate mofetil
- Azathioprine

Cyclosporin

- Rapid 2-3 week response
- 93% good or excellent clearance
- Limited duration (2 years) without expected renal compromise
  - Monitor LFTs, u/a, lipids, Mg, K
  - Renal toxicity, increased BP
- Rapid rebound in 50%
  - 10% with sustained remission >6 months
- 1-year study of CsA (5 mg/kg/day) in children showed no significant differences between intermittent or continuous treatment in efficacy or safety*

Clinics in Dermatology, 2003;21:225-240
Cyclosporin A

- 3-5 mg/kg/d for 6 weeks
  - Children as young as 22 months responded to 2.5 mg/kg/day *
- Decrease 1 mg/kg/d every 2 weeks until 1 mg/kg/d
- Increase interval by 1 day every 2 weeks
- Try to d/c after 3-6 months
- Add other therapy- topical CS or UV

<table>
<thead>
<tr>
<th>Test</th>
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<tbody>
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<td>BP</td>
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<td>CBC/Diff</td>
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<td>CMP q 2 wks x 3 mo then q mo</td>
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<td>Creatinine x 3 prior to start</td>
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<td>Mg</td>
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<tr>
<td>Cyclosporin level</td>
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</tbody>
</table>
Mycophenelate Mofitil (Celcept)

- Inhibits inosine monophosphate dehydrogenase
  - Blocks purine synthesis and DNA production
- 4-6 week response, 10-90% good or excellent clearance
- No long term data in children
  - Monitor CBC, LFTs
  - Myelosuppression, liver and GI toxicity
- Sustained remission after 8 weeks
  - 85% with sustained remission >5 months

*Clinics in Dermatology, 2003;21:225-240*
Phototherapy

– Apoptosis of inflammatory cells, inhibit langerhan cells, alter cytokine production, antimicrobial effect
– Natural sunlight- beneficial but avoid sunburn & excessive sweating
– Broadband UV: UVA + UVB (290-400 nm)
– Narrowband UVB (311-313 nm)
– UVA 1
– PUVA
– 3-5 x a week for 12 weeks

Clinics in Dermatology, 2006;31:196-199
JEADV, 2006;20:1114-1120
Clin and Exp Derm, 2007;32, 28-32
Difficult Itch

Sedating Agents P.M. Control

- Hydroxyzine at 2mg/kg q hs (H1)
- Doxepin (tricyclic antidepressant) at 1mg/kg q hs (H1/H2)
- Paroxetine (Paxil ®) at 10mg q hs
  - Serotonin type 3 receptors (SSRI)
  - Occasional postural hypotension
- Mirtazapine/Clonidine (central alpha-2 inhibitor)
  - No data in children
  - Lasts only 4-6 weeks

Relief

• Pramoxine:
  – Hydrating bases (Prax Lotion)
  – Menthol & pramoxine (Sarna Ultra)

• What not to give: strong sensitizer
  – Benadryl Cream
  – Zonolonon Cream
Emotional Factors increase pruritus

- Atopics respond to stress, frustration, embarrassment with increase pruritus & scratching.
- Scratching may be associated with secondary gain or just a habit.
- Psychologic evaluation & counseling if with emotional triggers or psychologic problems.
- Behavioral modification/distraction therapy, relaxation biofeedback.

Disease Management of AD: An updated practice parameter. Annals of Allergy 93:3 S1-S21, Sept 2004
Proactive treatment with Topical Corticosteroids (previously involved but normal-appearing)

- 376 moderate to severe AD (12-65 yrs)

**Stabilization:** Fluticasone cream 0.05% or Ointment 0.005%

**Maintenance:** 2 successive evenings weekly

**Vehicle**

- Fluticasone cream
  - 5.8 x less likely to flare p<0.001

- Fluticasone ointment
  - 1.9 x less likely to flare p=0.010

No difference in adverse events


Proactive treatment with Topical Corticosteroids (previously involved but normal-appearing)

249 moderate to severe AD >12 yrs)

Stabilization: Methyl-prednisolone aceponate 0.1% cream

Maintenance: 2 successive evenings weekly (n=221)

Emollient

Methyl-prednisolone

3.5 x less likely to flare p=0.0001

No difference in adverse events

Proactive treatment with Tacrolimus

Breneman D et al. Intermittent therapy for flare prevention and long-term disease control in stabilized atopic dermatitis: A randomized comparison of 3-times-weekly applications of tacrolimus ointment versus vehicle. JAAD. 58 (6) Pages 990-999, June 2008,
**Flare-free days**
Patients on TCO had significantly more flare-free treatment days compared with vehicle ($P = .003$)

**Number of disease relapse days**
Patients on TCO had significantly fewer disease relapse days compared with vehicle ($P = .027$)
Prevention (pregnancy & after birth)

- Maternal avoidance
- Neonatal avoidance
- Breast feeding
- Stop the Atopic March
Maternal Dietary Restriction

Current evidence does not support a major role for maternal dietary restrictions during pregnancy or lactation.

Greer FR, Sicherer SH, Burks W and the Committee on Nutrition and Section on Allergy and Immunology. Effects of Early Nutritional Interventions on the Development of Atopic Disease in Infants & Children: The Role of Maternal Dietary Restriction, Breastfeeding, Timing of Introduction of Complementary Foods, and Hydrolyzed Formulas PEDIATRICS January 2008;121(1):183-191
Breastfeeding

- Evidence that breastfeeding for at least 4 months, compared with intact cow milk formula prevents or delays the occurrence of atopic dermatitis, cow milk allergy, and wheezing in early childhood.

Formula

- In studies of infants at high risk of atopy & not exclusively breastfed for 4-6 mo, there is modest evidence that the onset of atopic disease may be delayed or prevented by the use of hydrolyzed formulas compared with formula made with intact cow milk protein, particularly for atopic dermatitis

Greer FR, Sicherer SH, Burks W and the Committee on Nutrition and Section on Allergy and Immunology. Effects of Early Nutritional Interventions on the Development of Atopic Disease in Infants & Children: The Role of Maternal Dietary Restriction, Breastfeeding, Timing of Introduction of Complementary Foods, and Hydrolyzed Formulas PEDIATRICS January 2008;121(1):183-191
Summary

Effects of Early Nutritional Interventions on the Development of Atopic Disease

(-) No major role for maternal dietary restrictions during pregnancy or lactation

(+++) Breastfeeding for at least 4 months prevents or delays AD, cow milk allergy & wheezing in early childhood

(+) Modest evidence that the onset of atopic disease may be delayed or prevented by use of hydrolyzed formulas

(-) Little evidence that delaying introduction of complementary foods beyond 4-6 mos. prevents atopic disease
Other Strategies

Unna boots

• Compression dressing, usually made of cotton
• Zinc oxide paste applied uniformly to bandage
  • ease skin irritation
  • keeps area moist
  • promotes healing within wound sites
• Zinc oxide paste is superior to gelatins in other dressings, because it does not harden or cake
• Some Unna Boots also contain calamine lotion, glycerin, acacia, castor oil, white petrolatum
Silver-impregnated clothing

- Reduce staphylococcal colonization, improved clinical parameters and reduced topical corticosteroid use in AD

Tar

• Help control itching, redness & scaling when all else fails
• Not aesthetically pleasing, may smell & stain
• Compounded concoction includes
  – 10% LCD (liquid coal tar distillate)
  – 5% Salicylic Acid
  – 3% Lactic Acid
  – in ointment base such as Aquaphor
  – baths (Balnetar)
## Probiotics & Atopic Dermatitis in Children

<table>
<thead>
<tr>
<th>Reference</th>
<th>Result</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td><strong>Meta-analysis</strong>&lt;br&gt;Michail SK, Stolfi A, Johnson T, et al: <em>Ann Allergy Asthma Immunol</em> 2008; 101:508-516</td>
<td>Modest role in moderate-severe AD&lt;br&gt;Atopic Dermatitis Severity Index score (mean change from baseline, -3.01; 95% CI; P = 0.01)</td>
<td>Duration, age, type of probiotic used did not affect outcome</td>
</tr>
<tr>
<td><strong>Meta-analysis</strong>&lt;br&gt;Lee J, Seto D, Bielory L: <em>J Allergy Clin Immunol</em> 2008; 121:116-121.e111</td>
<td>Current evidence is more convincing for probiotic in prevention rather than treatment of pediatric AD</td>
<td>Prevention</td>
</tr>
<tr>
<td><strong>Randomized, DBPC trial</strong>&lt;br&gt;Kopp MV, Hennemuth I, Heinzmann A, et al: <em>Pediatrics</em> 2008; 121:e850-e856</td>
<td>Lactobacillus GG during pregnancy and early infancy neither reduced the incidence of AD nor altered the severity of AD</td>
<td>Increased rate of recurrent wheezing bronchitis</td>
</tr>
<tr>
<td><strong>Cochrane Database Syst Rev</strong>&lt;br&gt;Boyle RJ, Bath-Hextall FJ, Leonardi-Bee J, et al. 2008:CD006135</td>
<td>Concluded that probiotics are not an effective treatment for eczema in children</td>
<td>Probiotic Tx carries a small risk of adverse events</td>
</tr>
</tbody>
</table>
**Vitamin D and Atopic Dermatitis**

- Vit D may play a role in regulation of antimicrobial peptides in keratinocytes
- 48% of patients (0-18 yrs) with asthma, atopic dermatitis, &/or food allergy had insufficient (<30 ng/mL) levels of serum 25-hydroxyvitamin D*

<table>
<thead>
<tr>
<th>Reference</th>
<th>Results</th>
</tr>
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<tbody>
<tr>
<td>Sidbury R, Sullivan AF, Thadhani RI, et al. Br J Dermatol 2008;159(1):245–7</td>
<td>DBPC in children with AD treated with 1000 IU/d of vitamin D for 1 mo. in winter: 4/5 treated (vs 1/6 placebo) <strong>had significant improvement in baseline score</strong></td>
</tr>
</tbody>
</table>

**Larger trials with vitamin D in AD are ongoing**


*Searing DA, Murphy J,. Vitamin D levels in children with asthma, atopic dermatitis, and food allergy. J Allergy Clin Immunol 2010;125(2):AB44
### Monoclonal anti-IgE (omalizumab)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Subjects</th>
<th>Results</th>
</tr>
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No specific markers found to identify potential responders
Currently, Omalizumab is not indicated for AD
Treatment Strategy for Atopic Dermatitis

- **High-potency TCS +/- wet wrap, Antibiotics**
- **Hospitalization**
- **Alt. Rx (Oral Steroids, PhotoRx, Cyclosporin)**

- **Midpotent /Superpotent Steroids +/- TCI, +/- Topical Antibiotic**
- **Wetwraps**
- **Tar Preparations**

- **Low Potency CS**

- **Hydration/Avoidance, Barrier Therapies**
- **Proactive Tx w/ Low Potency Topical Steroid or TCIs**
- **Decrease itching H₁ -Antihistamines**
- **Evaluate for triggers: food, aeroallergens, irritants, microorganisms**
# Eczema Action Plan

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<th></th>
<th>CLEAR</th>
<th>MILD-MODERATE</th>
<th>SEVERE</th>
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<tbody>
<tr>
<td><strong>Face</strong></td>
<td>AM</td>
<td>Moisturizer*</td>
<td>Moisturizer*; Protopic/ Elidel Hydrocortisone 2.5% oint</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>Moisturizer*</td>
<td>Moisturizer*; Protopic/ Elidel Hydrocortisone 2.5% oint</td>
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<tr>
<td><strong>Body</strong></td>
<td>AM</td>
<td>Moisturizer*</td>
<td>Moisturizer*; Protopic/ Elidel Hydrocortisone 2.5% oint</td>
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<tr>
<td></td>
<td>PM</td>
<td>Moisturizer*</td>
<td>Moisturizer*; Protopic/ Elidel Hydrocortisone 2.5% oint</td>
</tr>
</tbody>
</table>

- **AM**: Moisturizer* may use Protopic/Elidel or Hydrocortisone 2.5% oint to small flareups for several days as needed.
- **PM**: Moisturizer* may use Protopic/Elidel or Hydrocortisone 2.5% oint to small flareups for several days as needed.
- **Corticosteroid**: Bactroban oint. Call your doctor if not improving after 2 wks.

### Instructions

1. **Frequently moisturize**: Use fragrance-free moisturizers* (Vaseline, CeraVe, Aqua-phor, Vanicream, Aveeno, Cetaphil, Eucerin, Atopiclair).
2. **Reduce skin irritation**: Wear loose-fitting clothing such as cotton blends. Wash clothes with liquid, fragrance-free, dye-free detergent.
3. **Keep fingernails short and smooth** to help prevent damage due to scratching.
4. **Bathe (20-30 min) or shower (5 min)** once a day using luke warm water & mild soap (Dove or Cetaphil). Gently pat or drip dry immediately apply moisturizer or skin medication on wet skin.
5. **Wet wraps**: Pat skin dry after an evening bath. Apply topical medication to affected areas & moisturizer to unaffected areas. Soak dressings (Unna Boots, tube socks, Ace bandages or cotton gloves) in warm water. Squeeze out excess water (wet but not dripping). Cover affected areas with wet dressings, followed by a dry dressing on top (another tube sock, Ace bandage, dry pajamas). Wet dressings should stay in place overnight.
6. **Bleach baths**: x/week, to decrease bacteria on skin. Mix 1/4 to 1/2 cup of common liquid bleach (e.g., Clorox) into a full bath tub. Soak in chlorinated water for about 10 minutes. Rinse thoroughly with fresh water at the end of the bleach bath.