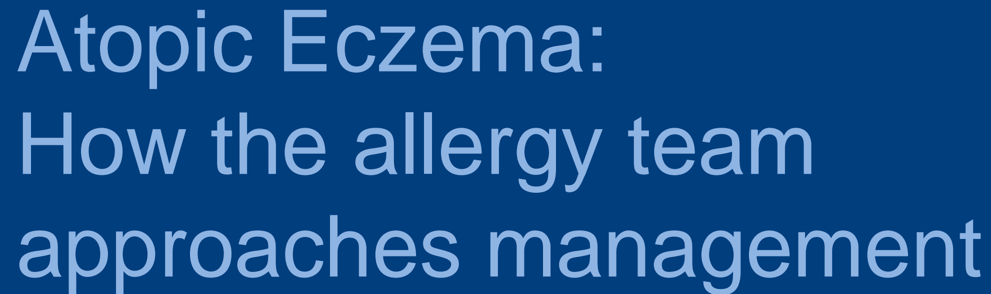

Atopic Eczema: How the allergy team approaches management

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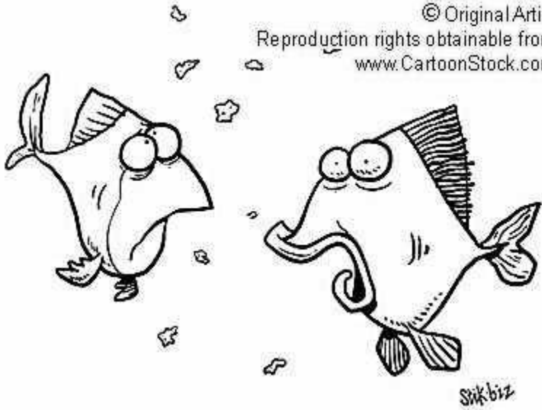
SA Wound Management Association
24th November 2010

Government of South Australia
SA Health

FLINDERS MEDICAL CENTRE



Overview

- Understanding what drives atopic eczema
- Case presentation
- Trigger factors
- Eczema Education Workshop
- Resources

Atopic Eczema is a chronic, relapsing, inflammatory skin condition

- Skin features are characterized by
  - Classic distribution
  - Dryness
  - Deep-seated itch
  - Redness, weeping, crusting and lichenification

Eczema can be treated and controlled but there is no "cure"

It is believed that 15-30% of children in Australia may be affected by eczema

(Gold & Kemp 2005)

What causes atopic eczema?

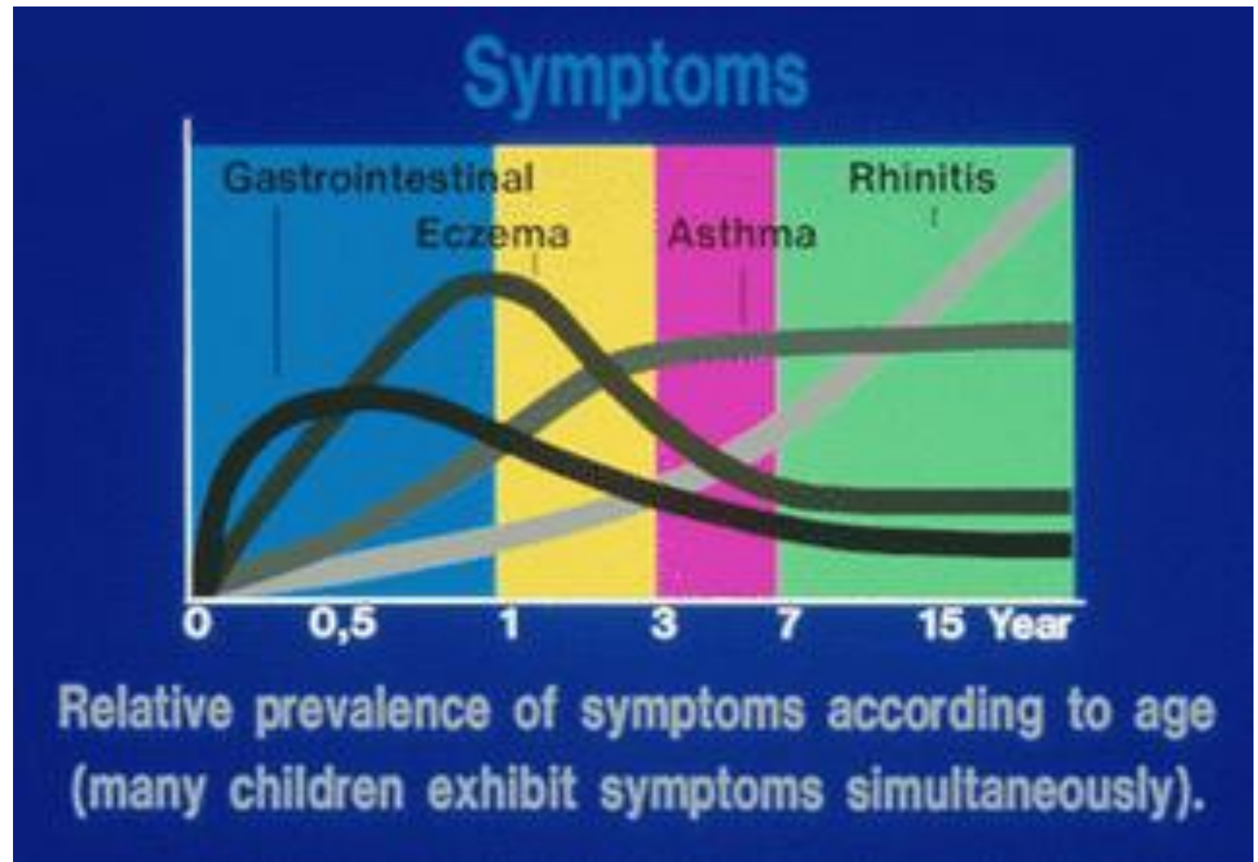
The cause remains unclear but……

- Strong links between genetic and environmental factors.
- Decreased skin function
  - Mutations of the "Loss of Function Gene" - Filaggrin *(FLG)* *k*
    - > *Impact on the water binding capacity of the stratum corneum*
    - > *Increased transepidermal penetration of environments allergens*
- Atopy - Immune response is primed to develop allergic disorders, such as eczema, asthma and rhinitis.

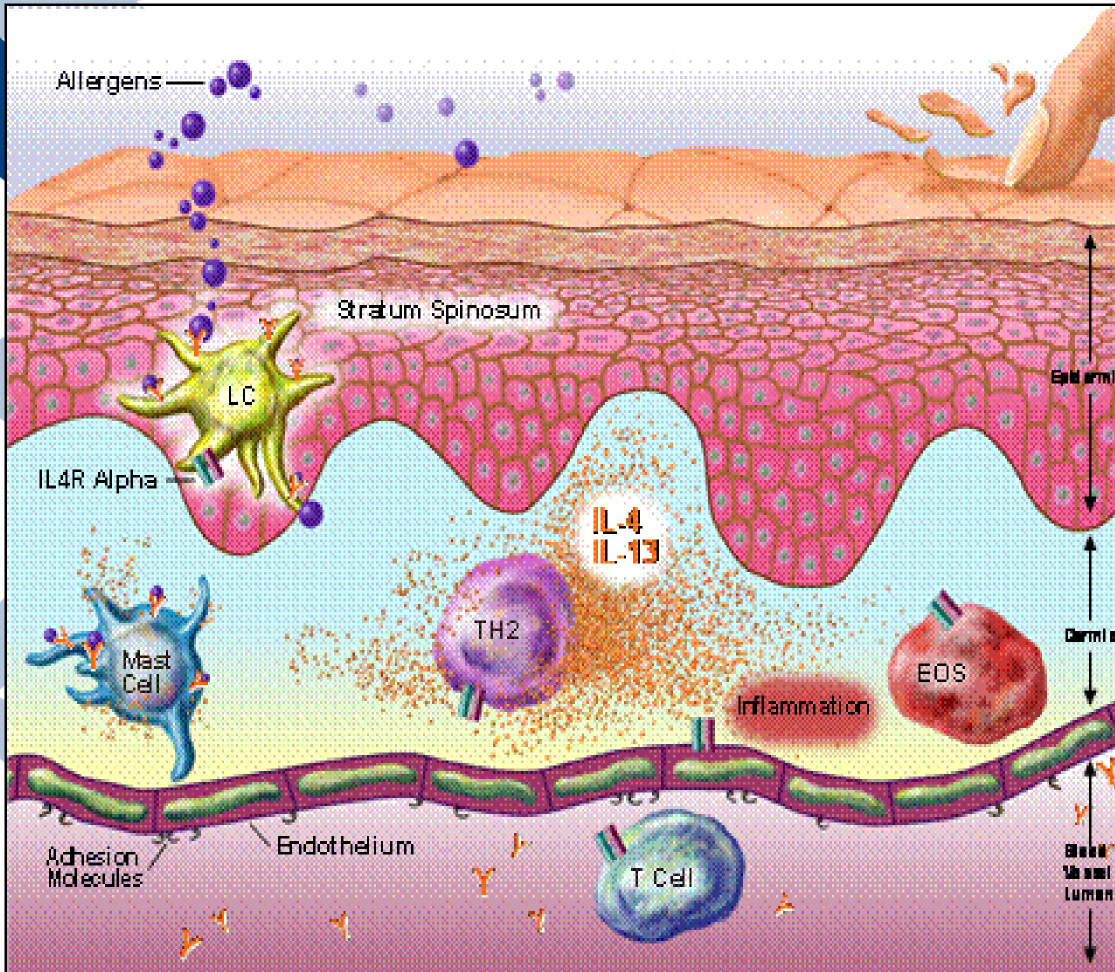
(Cork M 1997)

It's not just about the skin

"The Atopic March"



Skin Function



Interface between skin and environment

Complex immune deregulation influenced by sensitisation and infection

Broken skin has a reduced ability to act as a chemical, biological and physical barrier.

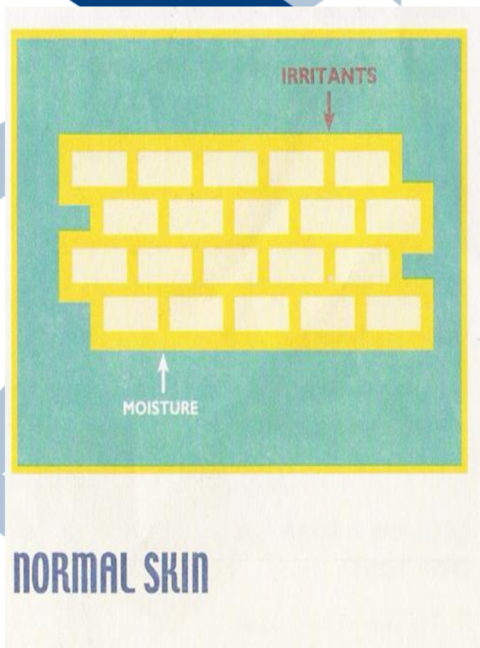
Barrier effect is reduced

- Antigens are allowed to enter because of this reduced function and so increases the possibility of sensitisation.
- Bacterial colonization and secondary infection also occurs due to this reduced function

(Lawton 2007).

Healthy skin of a person without eczema

(Elias cited in Cork, 1999)



Elias 1987

- Intact epidermal compartment is a prerequisite for skin function to act as a physical and chemical barrier

- Healthy skin is like a brick wall
  - top layer (stratum corneum) is the barrier
  - Skin cells are the bricks.
  - Lamellar lipids (fats) are the mortar which help keep water in the cells.

So, in skin of those who have eczema…..

> Genetic studies highlight importance of filaggrin gene (FLG) gene mutations lead to defects in the stratum corneum results in
- Cracks, loses more moisture and lets irritants and allergens in.
- The skin dries 10 times faster and flakes off

(Irvine & McLean 2006, Cork 1997).

> Soap based products dry the skin further and also may make the skin thinner

(White et al 1987, Cork 1997 & Lawton 2004)

> Under the skin there are thousands of mast cells, which play an important role in inflammatory and allergic reactions for atopic people.

(Elias et al 1987, NES 2004)

Atopic Eczema: an allergist's perspective

- Family History
  - Atopic Mother greater incidence of AE and asthma
- Dietary History
  - 40% infants with severe AE will have food allergy
  - Evidence of anaphylaxis
- Response to mainstream AE management
  - Infections
    - Primary Immune deficiency
    - 90% patients with AE and colonized to Staph. aureus
- Seasonal pattern to AE flares
  - Perennial: HDM, animals
  - Seasonal: Pollen, Mould

Case presentation

PF 3 yrs old female of Asian/Caucasian

Past History

- 2007 Egg allergy anaphylaxis reported –No record in case notes
- 08/2008 viral infection and exacerbation of AE
  - > Topical steroids and RAST
  - > F/U GP
- 11/2009 Anaphylaxis (Grade 2) to hazelnuts
  - > Referred to Immunology
- 02/2010 Allergy outpatient consult
  - > SPT - multiply food allergies
  - > Anaphylaxis Management plan
  - > Education given in eczema management
- 06/2010 Infected eczema
  - > 2/52 not responding to TS and cephalexin.
- 10/2010 Presented to Allergy clinic, referred to Dermatology consult and inpatient admission – Maximal therapy
  - > Swab - Staph aureus Tx flucloxacillin
  - > Loratidine daily
  - > Intensive skin care, wet wraps, Elecon, Celestone and Condy's bath

Temperature

- Warmth aggravates itching

Irritation

- Wool and synthetic fabrics can cause irritation
- Sand pits
- Chemical eg chlorinated swimming pools

Soaps and detergents

- Soap free products

Infection

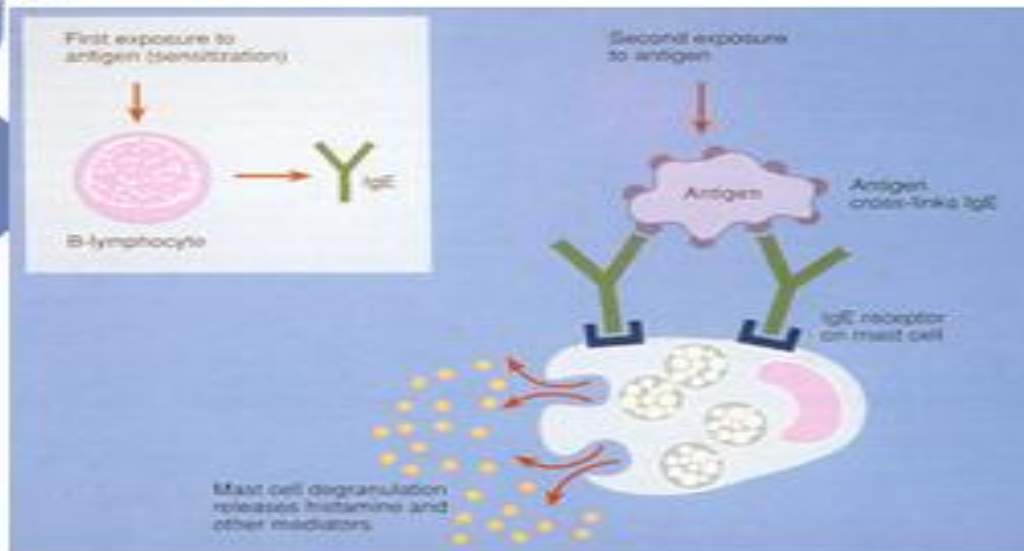
- Important to recognise infection and start treatment to reduce flare up of eczema

When atopic people are exposed to certain substances their immune system produces an abnormal reaction. This is referred to as an “allergy”.

IMMUNE MECHANISMS

Type I immediate hypersensitivity.

IgE mediated.



Food allergy

Eczema is the often the first sign of food allergy in infants

- 37% infants with moderate – severe eczema have food allergies

(Eigenmann, Sicherer et al 1998, Hill 2004)

- Common foods are cows milk, egg, wheat, soy, nuts and fish and shellfish.
- Breast feeding is recommended
- Food restriction not recommended without diagnosis by allergist and should be under supervision of dietician
- See ASCIA guide to weaning www.allergy.org.au

Allergic trigger factors

House dust mites

> Microscopic mites that feed on particles of skin that have been shed.
> Allergic reaction is to the mites excreta.

Moulds

> Common allergen that is found in dark damp areas of homes, indoor plants and garden litter.

Animal dander and pollen

> Can influence severity of eczema in some infants.

Investigations for atopic eczema

Majority of children with eczema are diagnosed clinically. However, if an improvement is not seen, allergic trigger factors can be investigated.

- Blood test to measure IgE antibodies and RAST
- Skin Prick Test immediate hypersensitivity
- Patch test to diagnose delayed sensitivity
- Other investigations that maybe offered by alternative practitioners

Impact of living with eczema

- Burden greater than caring for IDDM child

  (Kemp 1999)

- QOL - only cerebral palsy scored higher than moderate-severe AE

  (Beattie, Lewis-Jones 2006)

- AE alters the emotional and social functioning of individuals and their families

  (Chamlin 2006)

- AE cost of care est. range from $1142-$6099 per child p/y

  (Kemp 1999)

- Strong genetic trend of atopic conditions, often caring for multiple family members with AE, asthma, rhinitis, food allergies

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Pediatric Atopic Eczema: The Impact of an Educational Intervention

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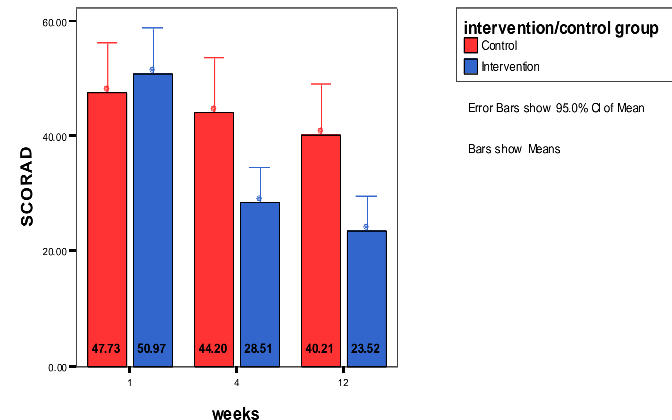
RCT to evaluate a Eczema Education Workshop (EEW)

Outcomes:

- Significant improvement in severity of eczema
- No change on QOL and FI

(Grillo & Hudson 2006).



SCORAD severity of AE

A nursing initiative

- Existing structure within clinic setting does not allow time to manage complex conditions
- Impact self-management programs have on patients/carers
- Nurses role is to empower carers to cope with chronic disease
- Decrease the number of hospital admissions
- Collaborative management of AE by combining Dermatology and Allergy specialties

- Increase child's /carer's knowledge of eczema and the treatments they are using in order to empower them to manage the condition.
- Awareness and avoidance of possible trigger factors.
- Decrease itching and scratching so that the skin can improve.
- Early recognition of flare and when to start treatment of more intensive measures to reduce the severity of the eczema.
- Treatment is not curative but to manage the skin problem to such a level that it improves their quality of life

Eczema Management Plan

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Southern Adelaide Health Service

ECZEMA MANAGEMENT PLAN
FLINDERS MEDICAL CENTRE

1. EVERYDAY SKIN CARE:

Bath:
Apply 1 capful of ________________
to the bath everyday.
OR
Shower:
Use a soap substitute
eg___________________________
Moisturiser:
Apply _______________to the face,
limbs and body _________times a day.
Additional Instructions:
____
____

2. IF ECZEMA IS FLARING: (skin is itchy, dry, red, flaking)

Bath:
Apply 1 capful of _________________
to the bath.
Face/flexures steroid
Apply __________________________
to areas of eczema on the face
_________times a day and apply
moisturiser to areas without eczema
also____________ times a day.
Body, legs, arms steroid
Apply __________________________
to areas of eczema on the limbs and
trunk ___times a day and apply the
moisturiser to other areas without
eczema also__________ times a day
Feet/Hands
Apply __________________________
to areas of eczema on the feet and/or
hands _______times a day and apply
the moisturiser to other areas without
eczema also__________ times a day

+/-Wet wrapping
Steroid creams/ointments or
moisturiser + wet towels/own
clothes/tubigrip bandages)
Apply wet dressings ________times a
day for _________days.
As eczema improves, decrease to
____times a day for ____days, then
____

Additional Instructions
____
____
____

3. IF INFECTED (skin is weeping, red, sore, itchy):

- Bath oils with antiseptic component eg_____________
- If no improvement, see GP and consider antibiotics
- If weeping and crusted, remove crusts by either soaking in the bath or wet face washer before applying moisturisers or steroid creams.
- Wet wraps can be continued only if infection is treated.

Areas of greatest interest

- Allergic and Non allergic triggers
- Basic Skin care
- Topical steroids Infection
- Wetwraps
- Alternative and complimentary therapies
- New developments
- Internet sites

Resources for Patients

- Eczema Management Plan
- Face to face Eczema Education workshop
  - Patients can self refer to Community and FMC sessions
  - Also offered to patients whilst waiting for MO consult also
- Patient Information booklet and DVD
- Nurse led clinic sessions

Additional treatments

> **Sedating antihistamines** can be used at night to relieve intense itching for short term use.

> **Antibiotics** may be indicated for treatment of infected eczema that is not responding to other measures

> **Topical immunomodulators** are new therapies that dampen down the immune reaction (down regulate immune mechanisms).
>
> - Elidel ™ use in the early stages of flare-up
> - Tacrolimus

> **Systemic immune suppression** for severe cases
>
> - Combined Dermatology/ Immunology Eczema clinic

Useful websites for patients and health professionals

1. Australasian Society of Clinical Immunologists and Allergists (ASCIA) professional body
   http://www.allergy.org.au
2. Eczema support group
   Eczema Association of Australasia Inc.(EAA)
3. Anaphylaxis Australia Inc. support group
   http://www.allergyfacts.org.au
4. RCH Melbourne Hospital
   http://www.rch.org.qu/derm/eczema.cfm?doc_id=4596
5. Skin World United Kingdom
   http://libraries.nelh.nhs.uk/skin/
6. New Zealand Dermatology Society
   New Zealand Dermatology Society, Dermnet NZ
7. Occupational Dermatology Research and Education Centre
   www.occderm.asn.au/

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