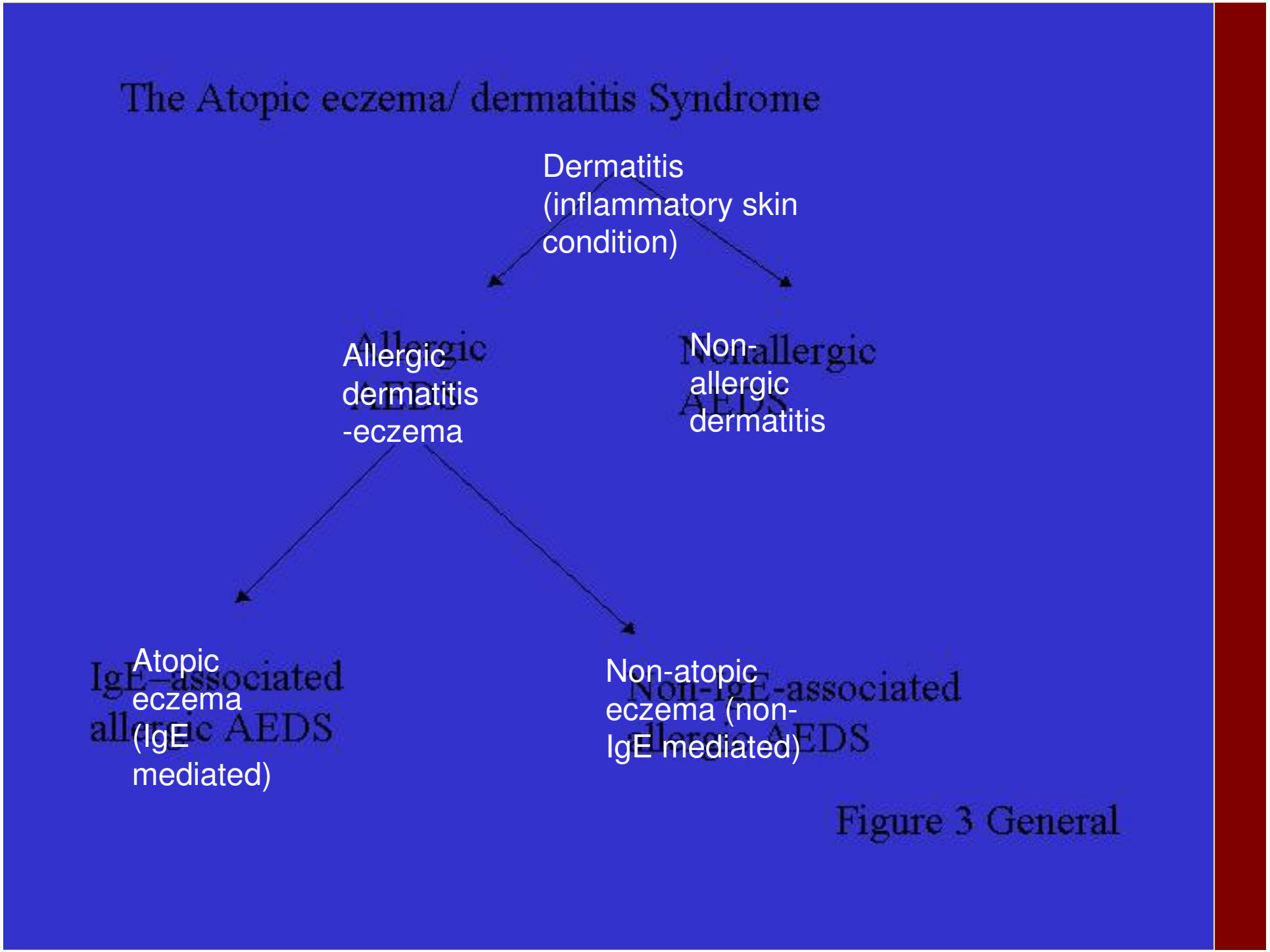
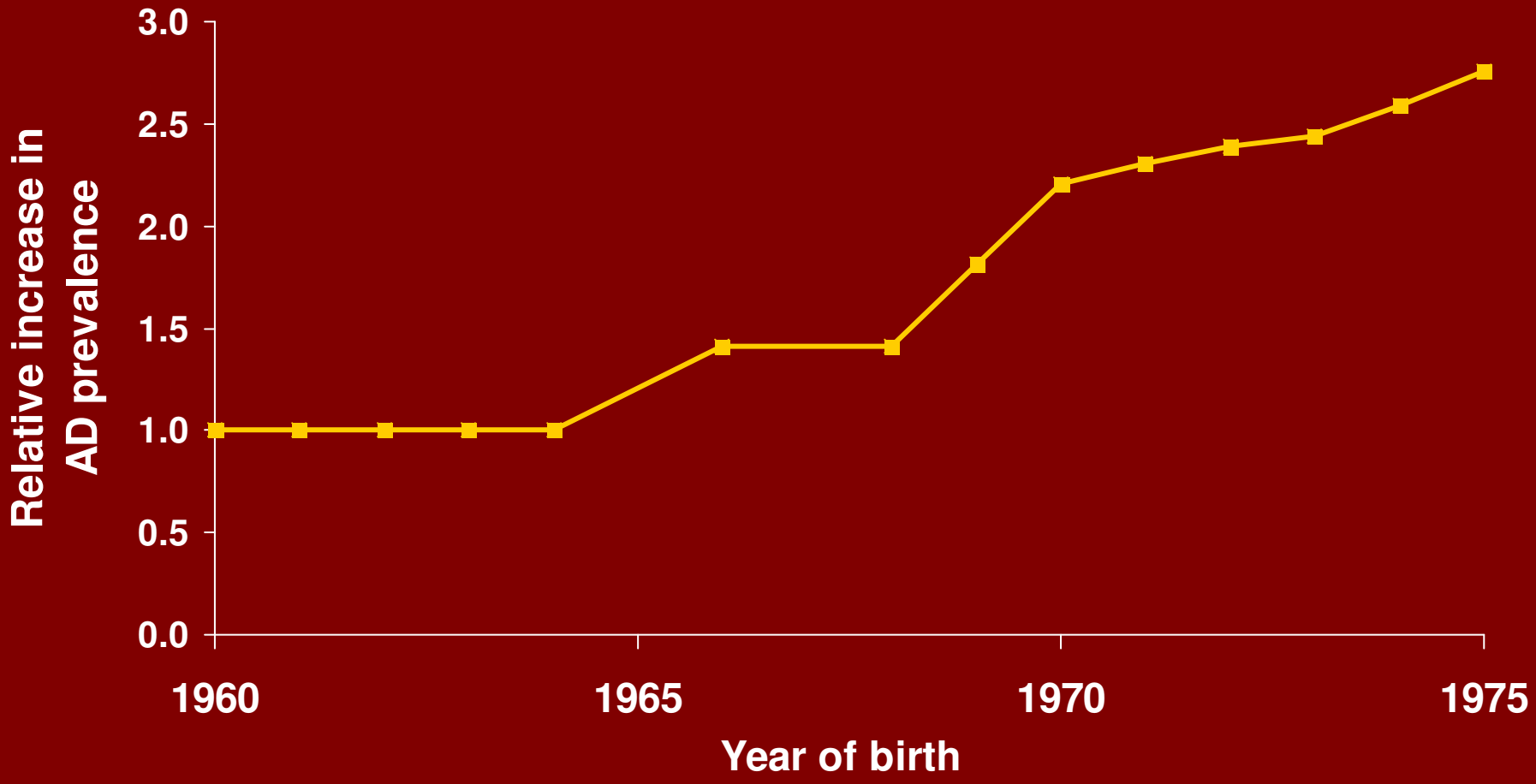
Atopic Eczema


The Atopic eczema/ dermatitis Syndrome
Dermatitis (inflammatory skin condition)
Allergic dermatitis -eczema
Non-allergic dermatitis
Atopic eczema (IgE mediated)
Non-atopic eczema (non-IgE mediated)
Figure 3 General

Pathophysiology of Eczema

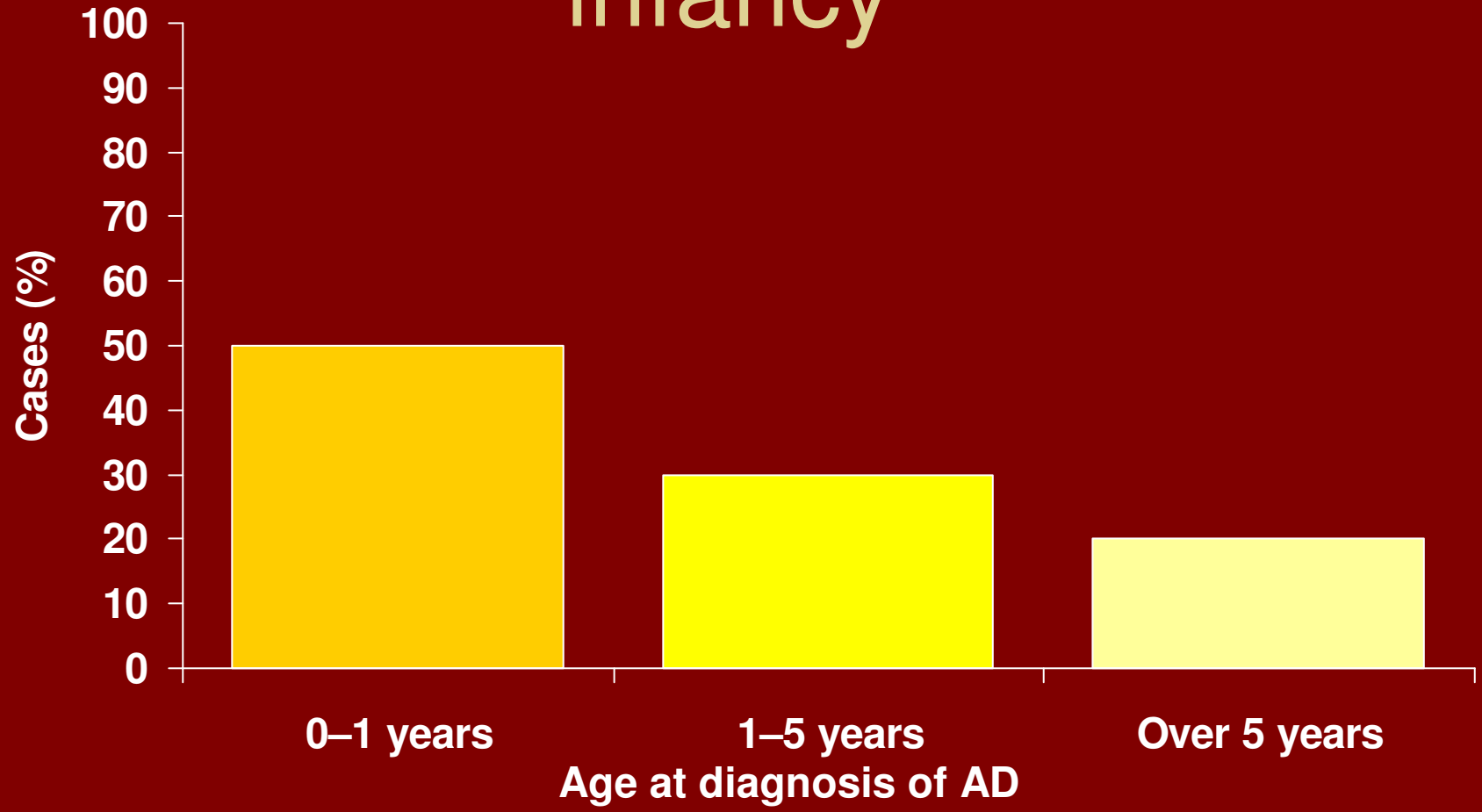
- Allergy
- Abnormal Barrier Function (Skin)
- Neural Disorder of Skin
- Cell Mediated immune Dysfunction

Prevalence of atopic eczema is increasing



Prevalence in 18-year-old male Swedish army conscripts in 1978–1993; adapted from Björkstén B. *Pediatr Allergy Immunol* 1997;**8**(Suppl 10):32–9

Atopic Eczema is a chronic disease that often begins in infancy



Leung DYM. *Clin Exp Immunol* 1997;**107**(Suppl 1):25–30

Atopic Eczema

- Chronic, relapsing inflammatory skin disease
- Often familial
- Frequently associated with other atopic disease:
  - food allergy , allergic rhinitis, asthma
- Characterised by intense itching , dry skin & inflammation
- Signs of inflammation :
  - erythema
  - infiltration / papulation
  - lichenification
  - excoriation

Itch is the most bothersome symptom

Ellis C et al , ICCAD II , BJD 2003

The Allergic March

- Food Allergy (0 – 1 year old)
- Eczema (3 months – 2-3 years old)
- Allergic Rhinitis (2 years – adulthood)
- Asthma (3 years – adulthood)

The united airway

Clinical diagnosis of Atopic Eczema: (Four criteria are sufficient)

- Early onset and typical localization of skin lesions according to age
- Pruritis
- Stigmata of atopy
- Personal or family history of atopy
- IgE mediated sensitization

Trigger factors

- ***Foods:***

- eggs

- milk

- wheat

- soya protein

- peanut

- Inhalant allergens:

- house dust mite

- pets

- pollen

-cut grass

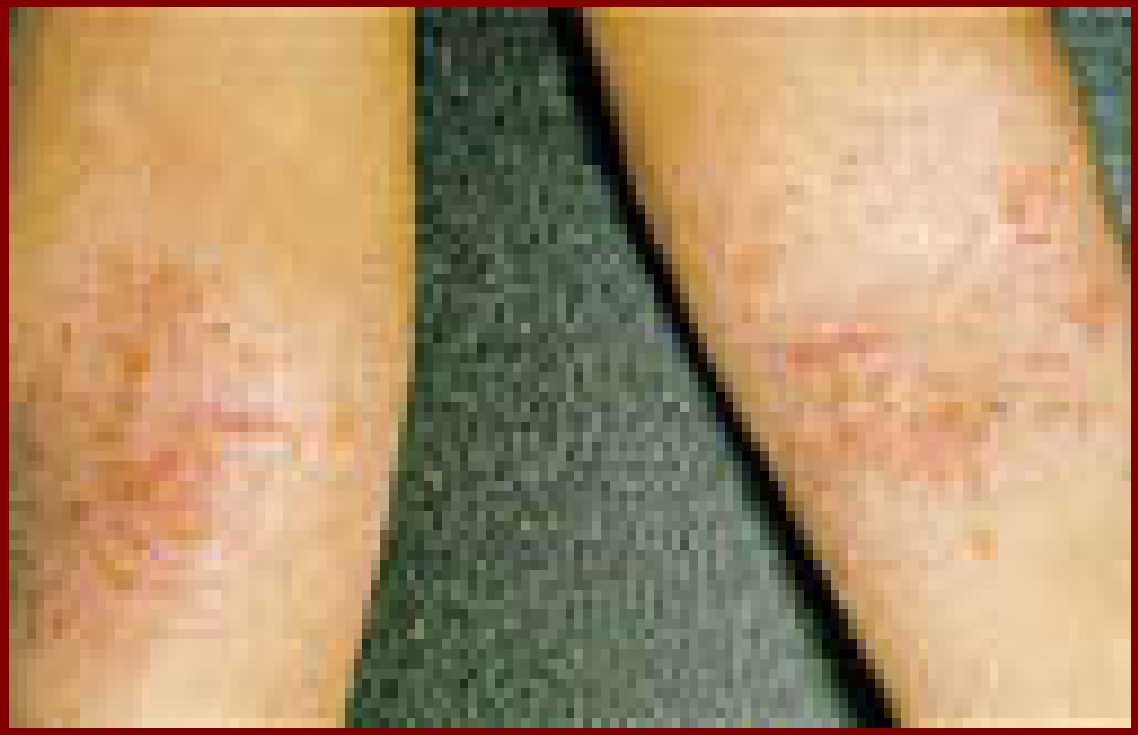
Triggers

- Secondary bacterial (e.g. staphylococcal and streptococcal) and viral infections, (e.g. Warts, Molluscum contagiosum and Herpes simplex) and occasionally to fungal infections (e.g. Pitysporium ovale).

TRIGGERS

- Bacterial infections i.e. streptococcus, staphylococcus
- Viral infections i.e. herpes
- Fungal infections

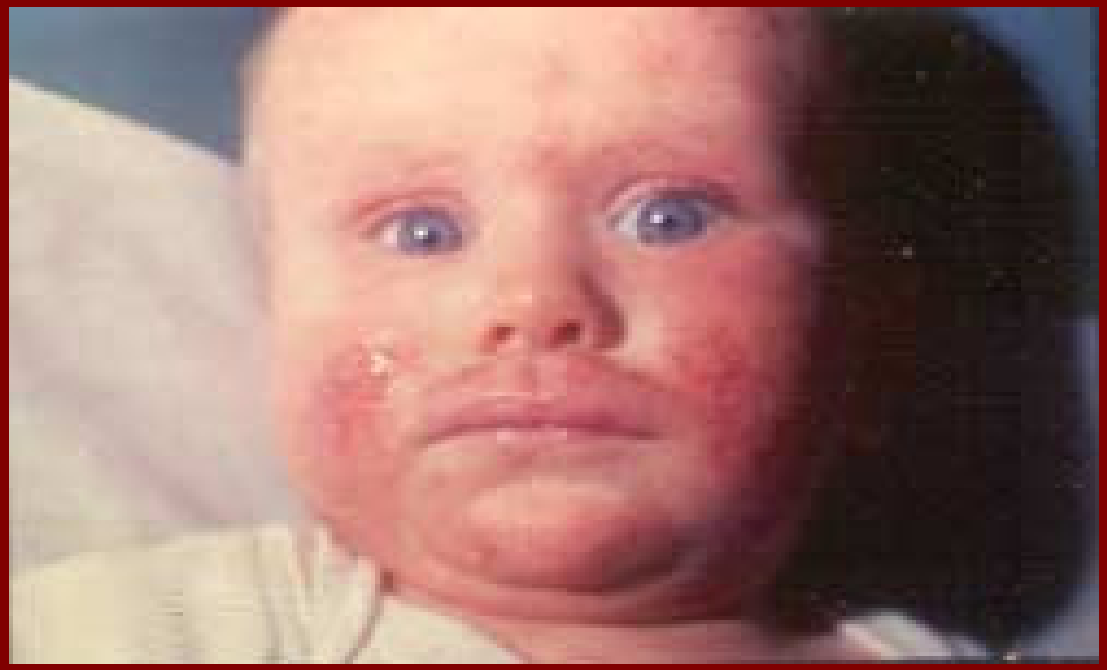
Atopic eczema may be ***acute*** with erythema, scaling and vesicles



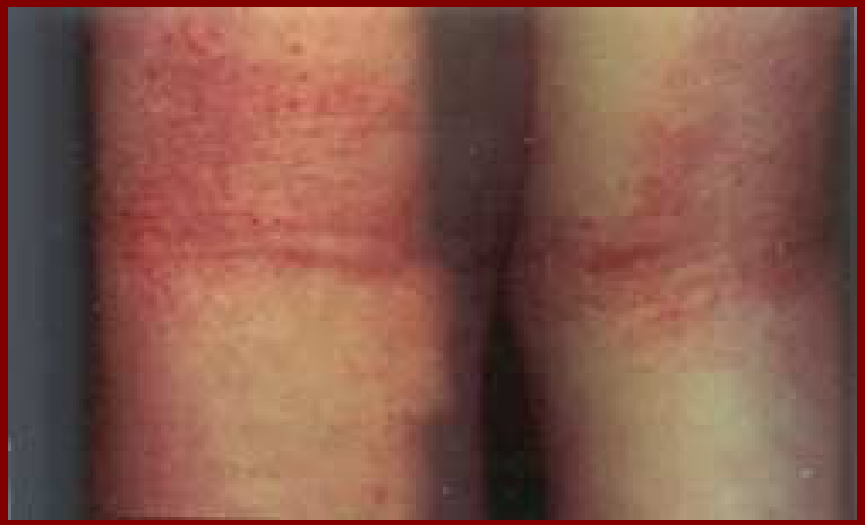
Chronic Eczema with:

- thickening,
- altered pigmentation and
- increased markings (lichenification).

Distribution of the rash typically varies with age.



- In infancy (3 months to 2 years) the cheeks, wrists and extensor aspects of the arms and legs are usually involved.
- The entire body may be affected but the nappy area is usually spared.



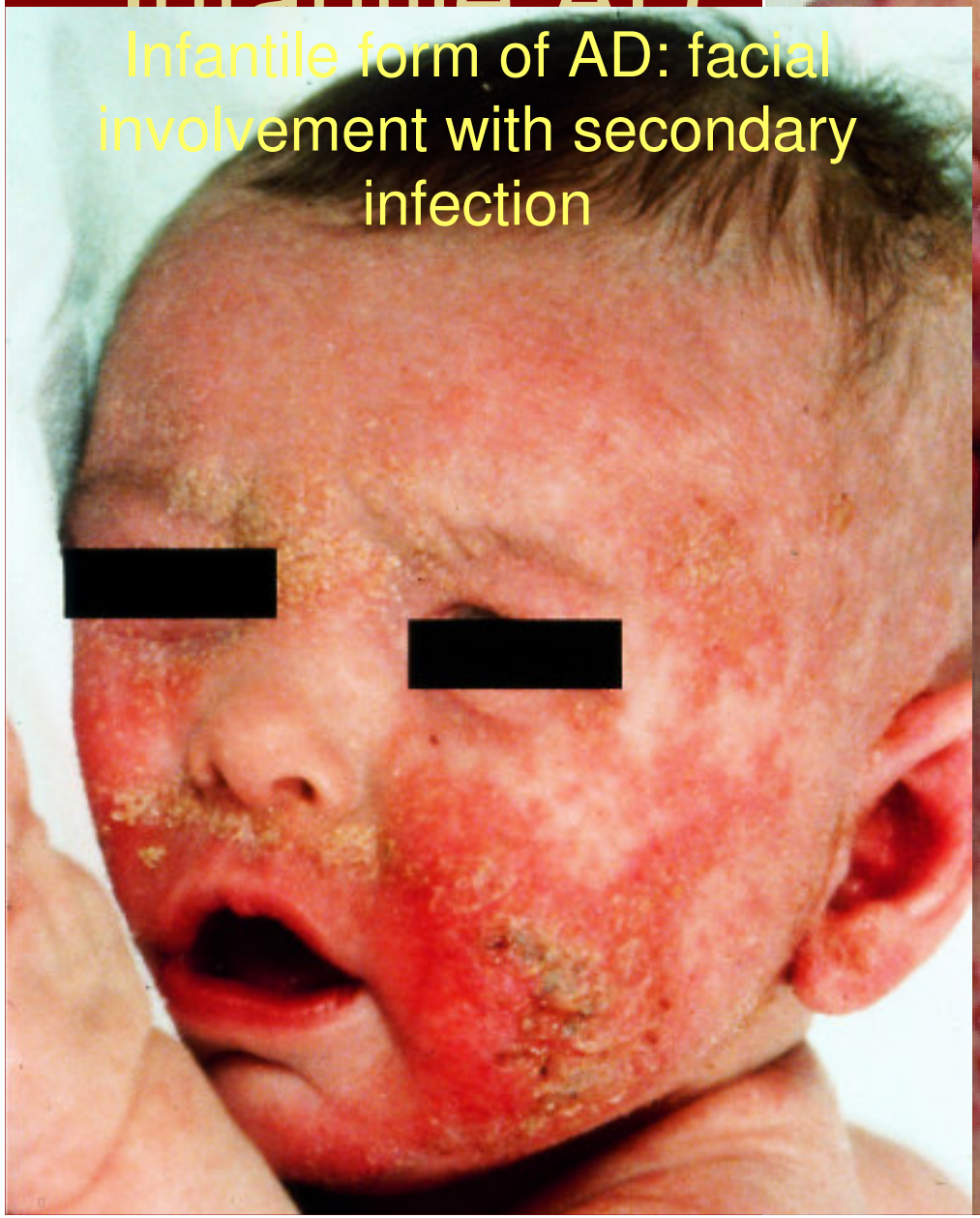
In young children (2 years to 12 years) flexor surfaces, the neck, wrists and ankles are generally involved.

In teenagers and young adults flexural surfaces, the face (especially periorbital region), hands and feet are frequently affected.

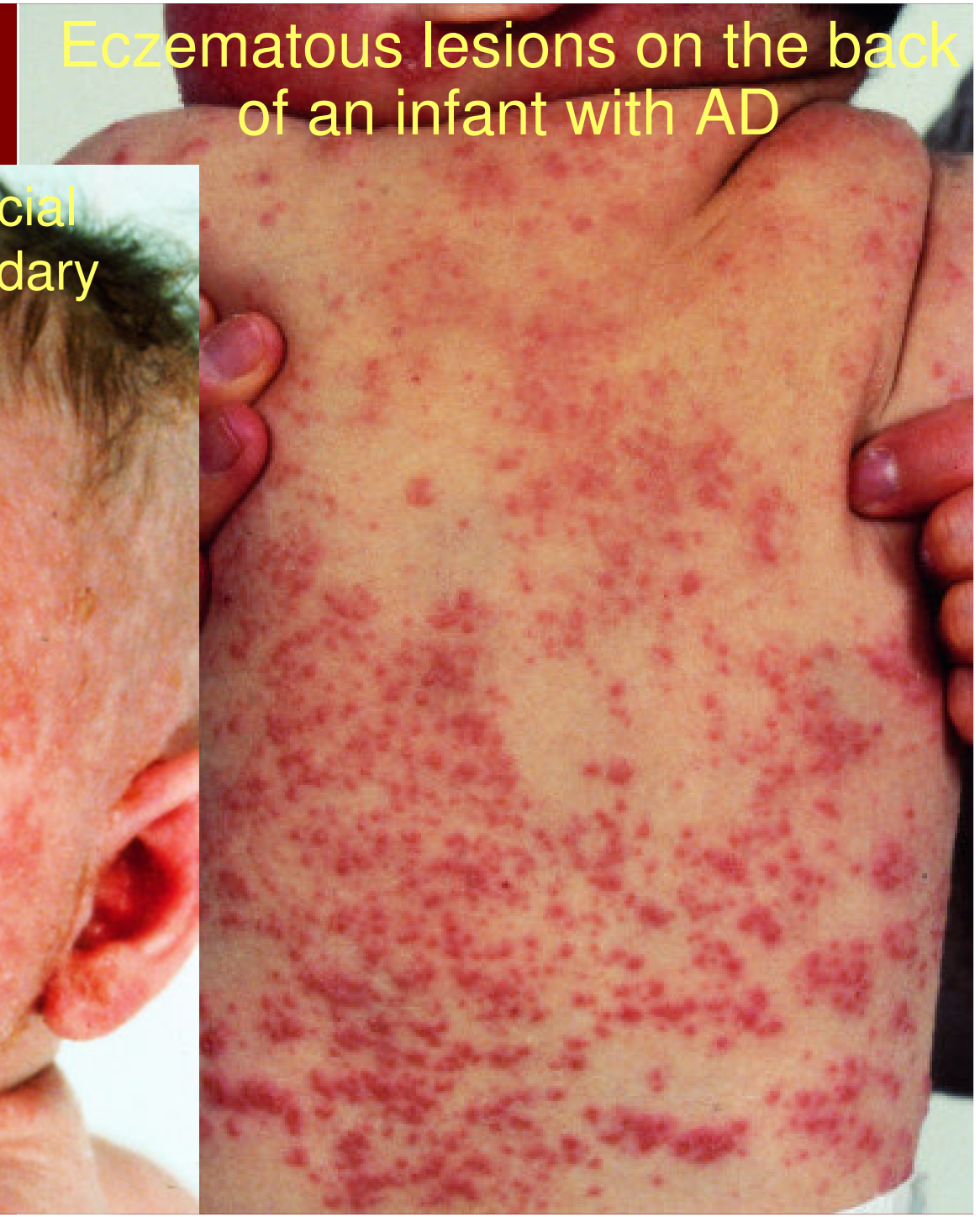
- Severity of eczema is variable, ranging from localised mild scaling to generalised involvement with redness, oozing and secondary infection.
- Itching and scratching are the predominant symptoms.
- Scratching not only inflicts gross damage, perpetuating the itch/scratch cycle, but also disturbs other household members.

- Atopic dermatitis usually becomes less severe in the teens, and may be completely "outgrown" around puberty.
- The majority of these patients will remain asymptomatic apart from possible hand dermatitis due to contact with irritants such as detergents and oils.
- However, eczema may relapse in some patients around the age of 20; the reason for this is unclear, but it might be associated with infectious mononucleosis infection causing immunomodulation.
- If atopic dermatitis continues into the third, fourth and fifth decade, it is commonly "outgrown" at the menopause in females.
- It is rare for atopic dermatitis to continue into old age, but when it does it is often severe and widespread.

Infantile AD



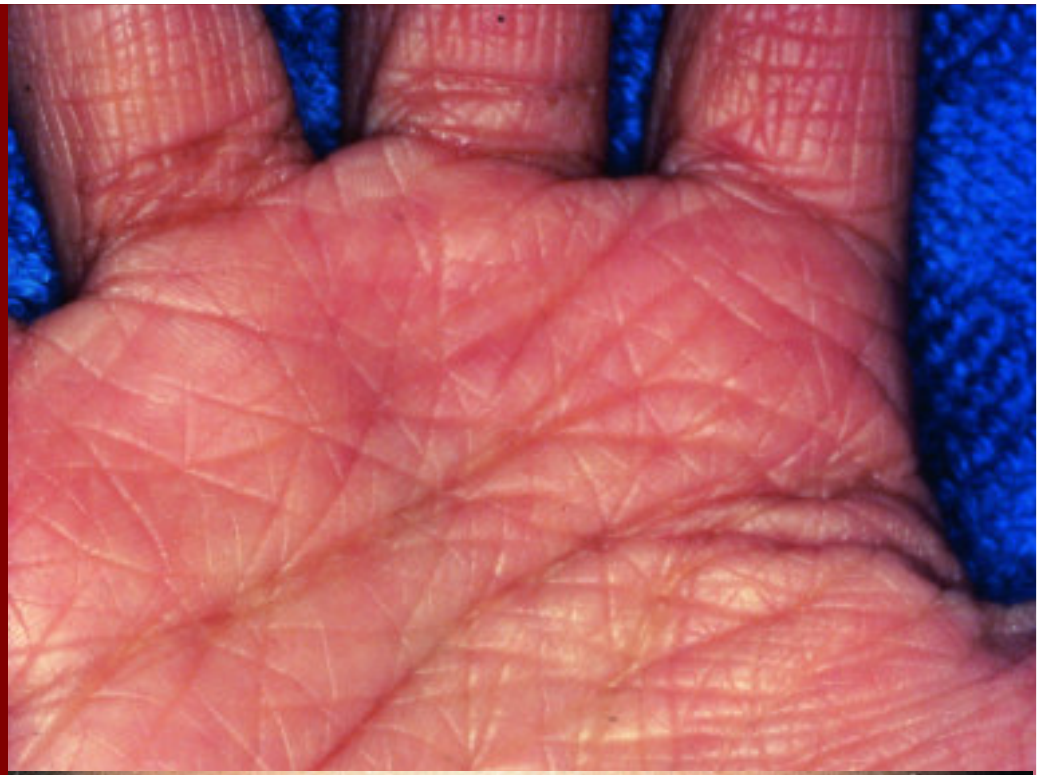
Infantile form of AD: facial involvement with secondary infection

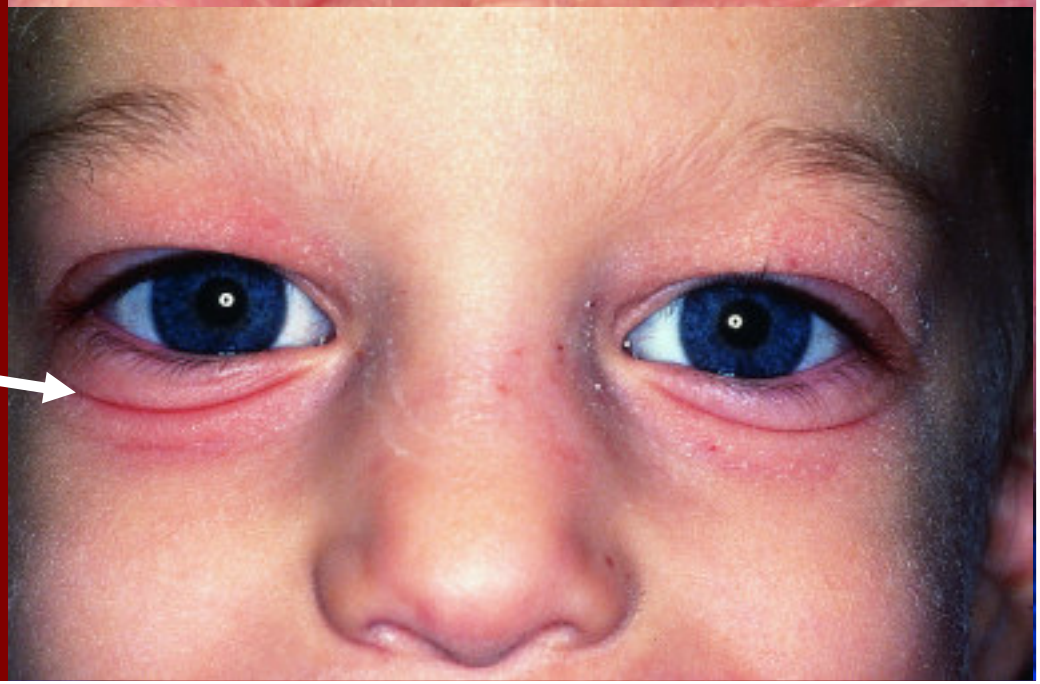


Eczematous lesions on the back of an infant with AD

General

- Postinflammatory hypo- & hyperpigmentation
  - disappear after weeks or months
- AD lesions do not scar unless there is severe secondary infection
- Associated findings
  - Hyperlinear palms and soles
  - Crease line under lower eyelid (Dennie-Morgan fold)





Atopic Dermatitis
Management

- The first step in management is identification and avoidance as far as is possible of "trigger" factors of atopic eczema.
- Where stress might be a precipitating factor, stress management must be taught and family therapy instituted.
- Hospitalisation for brief periods (removes patient from daily stresses or environmental factors) may also be helpful.

Corticosteroids

- *Topical steroid therapy* remains the mainstay of treatment in atopic eczema.
- In general, use the least potent steroid that controls the patient's symptoms in order to minimise side effects.
- Used correctly, topical steroids will usually suffice for lesions on the trunk and limbs, and 1% hydrocortisone for the face.
- In small children only 1% hydrocortisone or dilute strengths (e.g. 10%) of the mid-potency steroids should be used.
- Occasionally, more potent steroids are required to suppress acute exacerbations and for treatment of lichenified lesions.

Corticosteroids

- Strong steroids should be used for short periods only, but never on the face or delicate flexures because of the risk of side effects (e.g. skin atrophy, striae and steroid rosacea, hypothalamic-pituitary adrenal suppression and Cushing's syndrome due to systemic absorption).
- The choice of cream or ointment is also important. Cream bases are more acceptable to certain patients, e.g. in warm, humid conditions, though they tend to dry the skin; ointment bases, which are greasy, are more suitable as they lubricate dry skin.
- In general, oral corticosteroids should be avoided when treating atopic eczema because it is difficult to wean patients off these drugs and tolerance may develop.

Other Treatment Modalities:

- **Treatment with Emolients**
- **Tar**
- **Evening Primrose Oil**
- **Treatment for Infection**
- Calcineurin Inhibitors

Treatment with Emolients

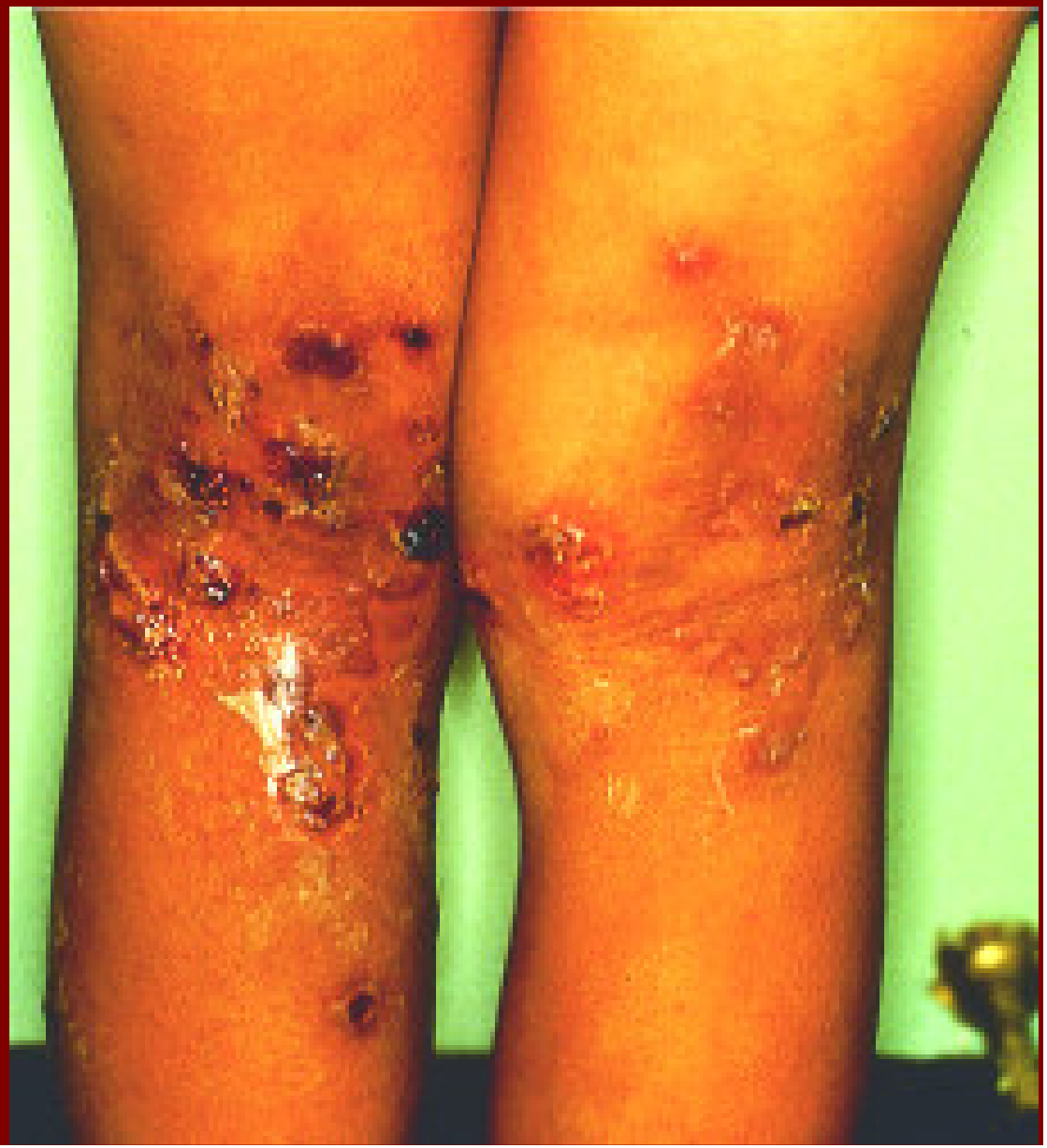
- Emollients are an essential form of treatment.
- They should be applied frequently, as a soap substitute, bath additive or applied to the whole body while still wet after a bath.
- This helps to lubricate dry skin.
- The choice of cream or ointment depends on the patient's preference.
- Ointments e.g. emulsifying ointment have the advantage of lasting longer than creams but may not be favoured by some because they are greasy.
- Creams e.g. aqueous cream and E45 are less greasy but need to be applied more frequently.

Complications of AD

Significant Staph aureus colonisation

- 93% involved skin
- 76% non-involved skin
- <10% in normal population

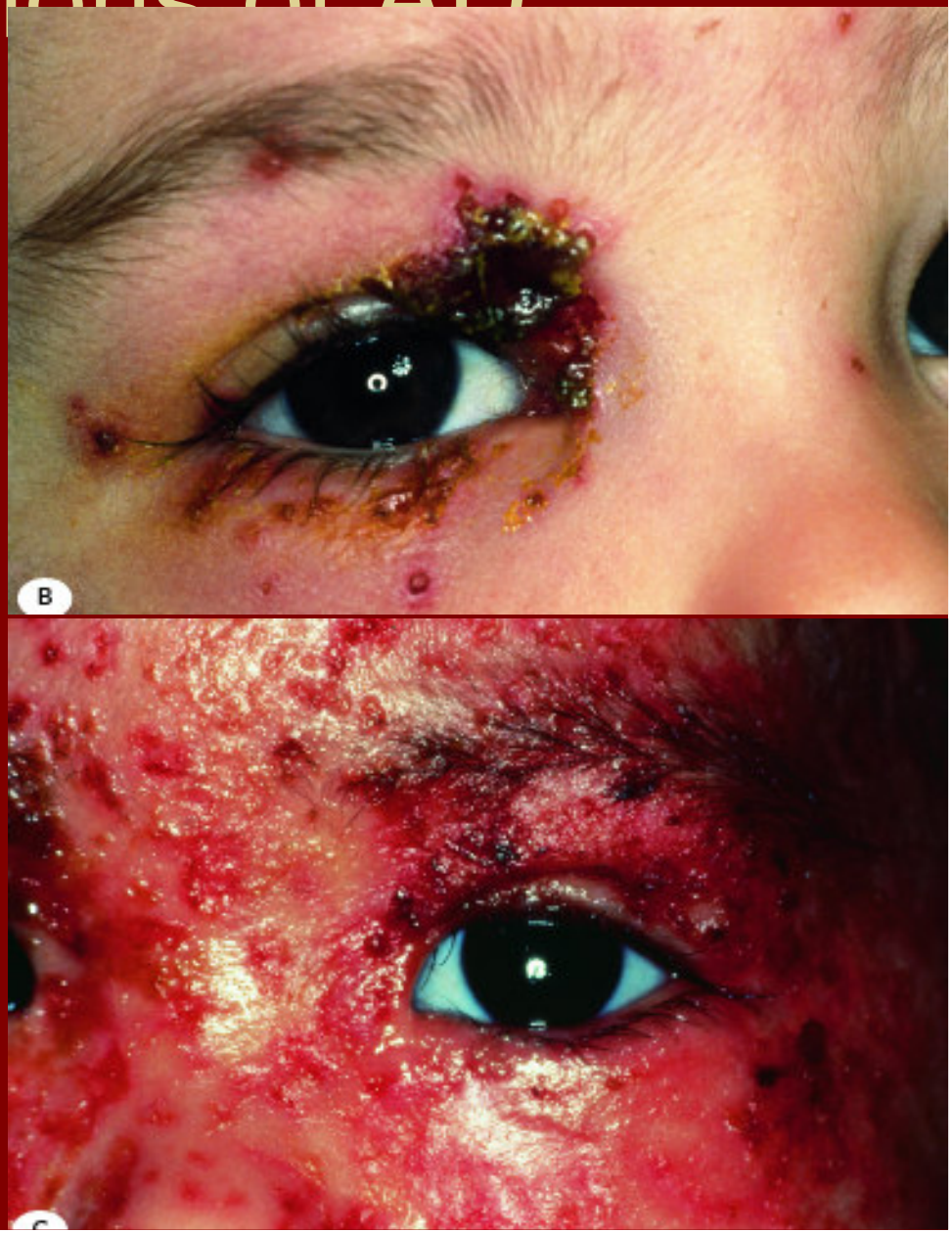
Clinical infection occurs frequently in AD patients but seldom results in severe systemic infection



Eczemous plaques in popliteal fossae with S. aureus secondary infection

Complications of AD

- Tendency to develop viral & bacterial skin infections
- Eczema herpeticum – extensive HSV infection
  - Unknown why AD patients are susceptible to generalized HSV infection
  - Primary infection
    - Eruption spread to normal skin
    - Febrile, small vesicles appear in area of eczema
    - Vesicles form erosions and crusts within 24-48 hours
  - Rx Acyclovir IV & systemic antibiotics



The Cost of Atopic Eczema

Direct Health Service Costs

- **Medical consultations (including alternative medical consultations and diagnostic tests)**
- **Medications (including inappropriate medications)**
- **Travelling costs**
- **Cleaning agents/appliances/special diets**

Indirect Costs

- **Loss of productivity due to time lost through doctor visits/illness/hospitalisation**
- **Inability to work to full capacity**

Intangible Costs

- **Loss of quality of life**
- **Social costs**
- **Psychological maladjustment**
- **Pain and suffering**

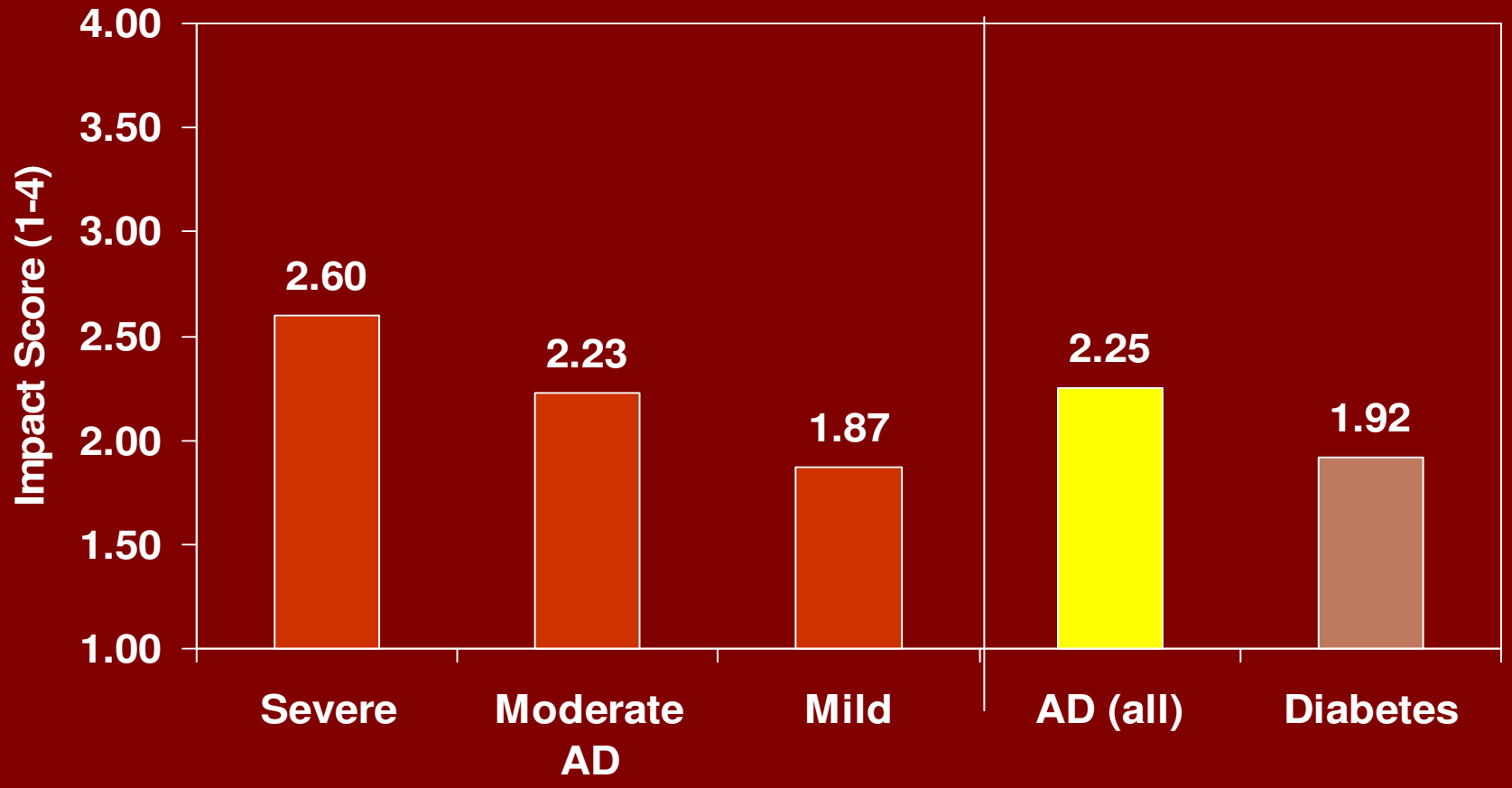
Direct Costs

In the USA it is estimated that up to 3.8 billion dollars are spent annually on direct costs of atopic dermatitis.

Costs to:

- Patient
- Family
- Caregiver

CHILDREN WITH AD HAVE STRONGER IMPACT ON FAMILIES THAN CHILDREN WITH DIABETES



Source: Su JC, Kemp AS, Varigos GA, Nolan TM. Atopic eczema: its impact on the family and financial cost. Arch Dis Child. 1997 Feb;76(2):159-62.

Eczema-prevention

- Diet: breast feeding for 6months, avoid smoking, foods i.e. peanuts, eggs, fish. Introduce cows milk and peanuts at 1yr and eggs and fish at 18months
- Clothing: avoid woollen clothing, perfumed soaps, rather use cotton clothing
- Detergents: washing powders i.e. sunlight, skip, rather than omo, punch, surf(enzyme enriched)
- avoid bubble baths

Prevention cont….

- Bath: lukewarm water for 20min, pat dry don’t rub and apply emmolients within 3minutes of pat drying.
- Bed: don’t overdress or overheat the child, short nails will prevent scratching.
- Immunisation; routine immunisation should be given.

Prevention cont…

- Future career
  choose the one less likely to expose them to irritant chemicals i.e. nursing, hairdressing, catering, motor mechanic or building industry. Protective rubber gloves with cotton inner-linings will help prevent irritant contact dermatitis.