Rural Health West

Paediatric Dermatology

- Dr Stephanie Weston
- MBBS FRACP FACD

- Subi Derm
- Consultant at Perth Children’s Hospital, HOD
- Visiting Dermatologist to Karratha Health Campus

Overview

- Atopic Dermatitis
- Acne

- Hair
- New treatments on the horizon: targeted therapies in dermatology

Atopic Dermatitis

Common

Frequently starts about 4-6m

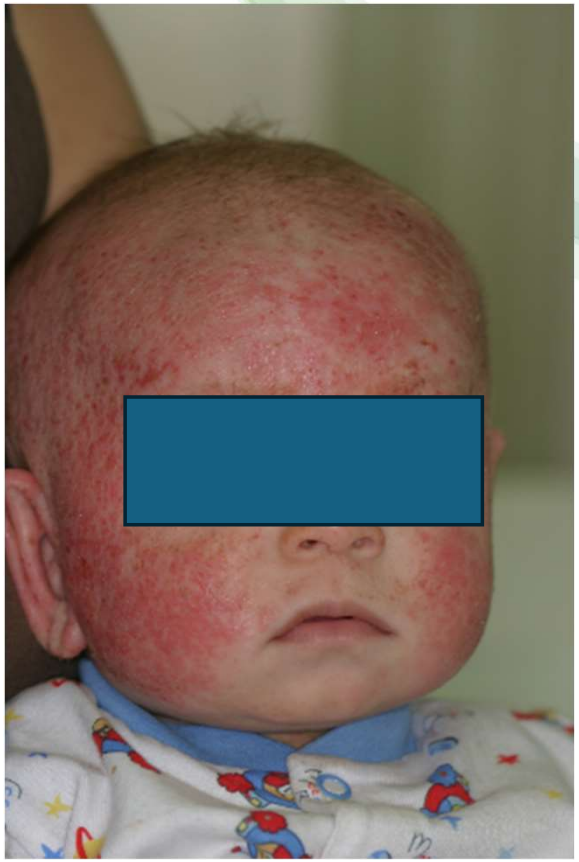
Many early cases respond well to topical corticosteroids and non pharmacological management, need education and support

Dry, red patchy rash

Starts on face and scalp

May ooze a serous exudate

Itchy++



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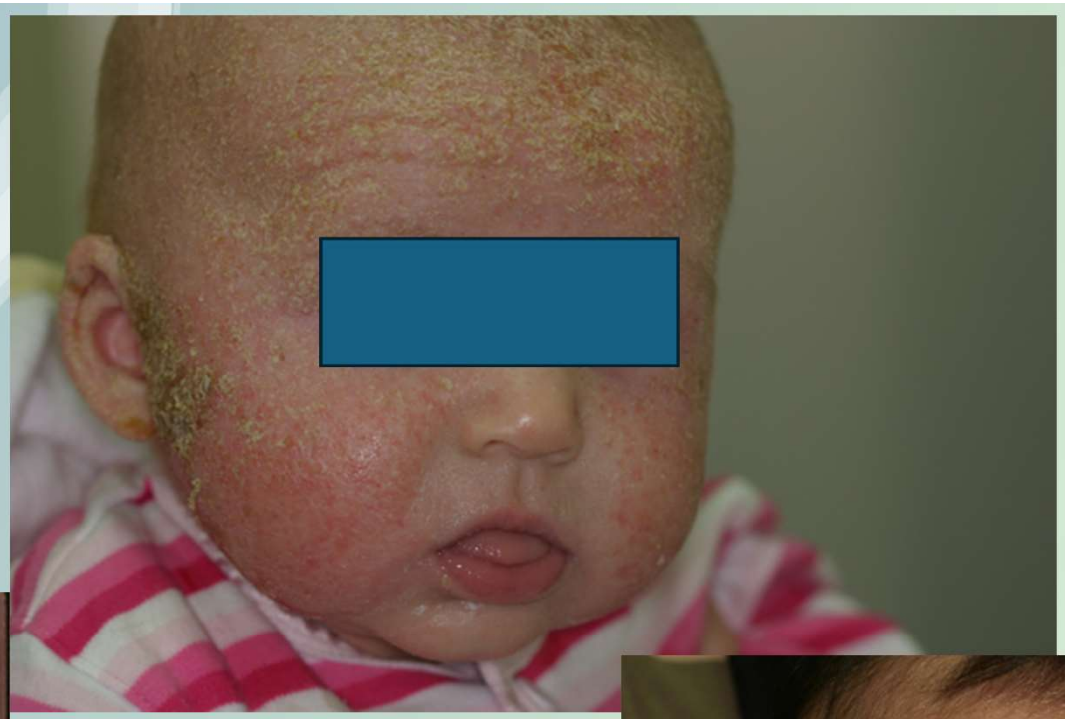
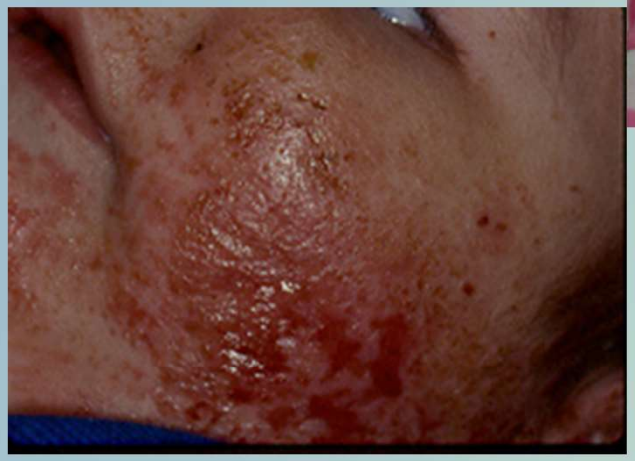
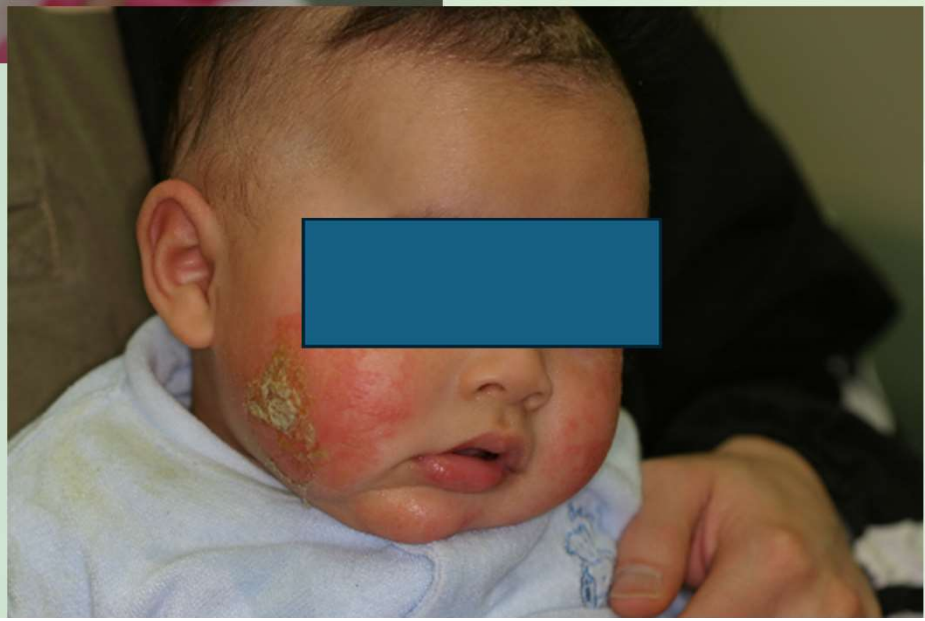
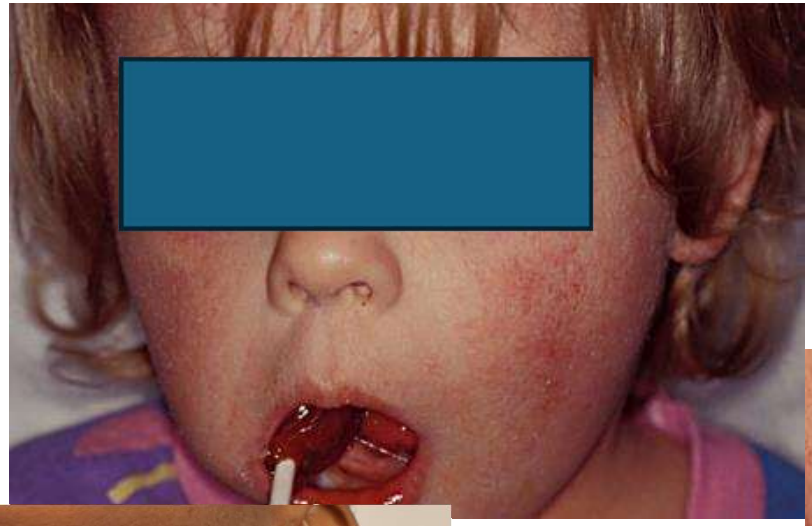
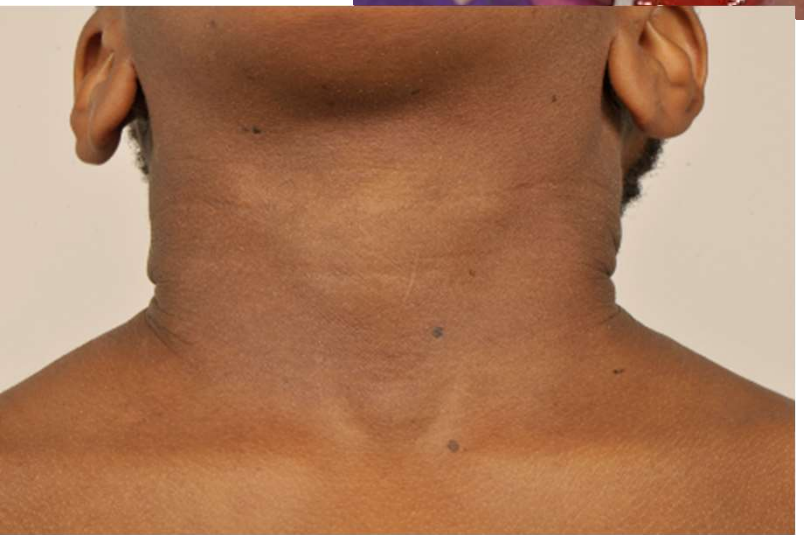


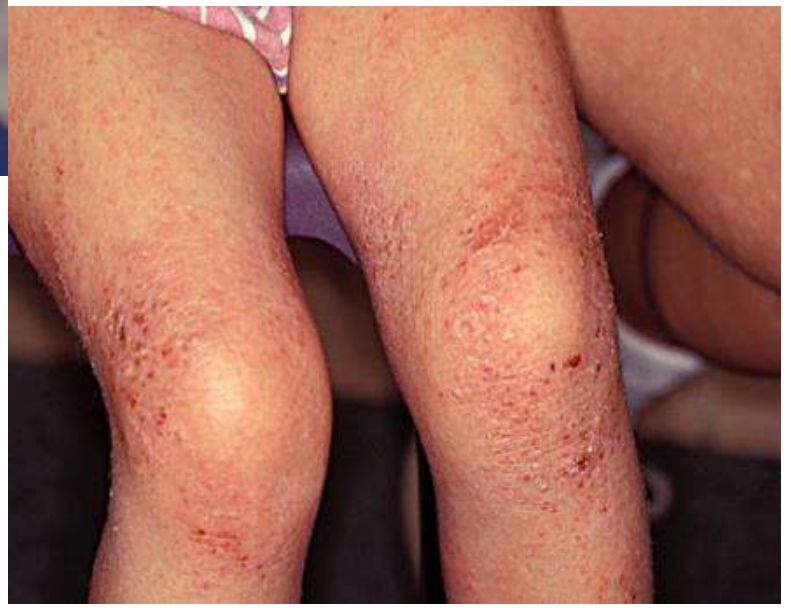


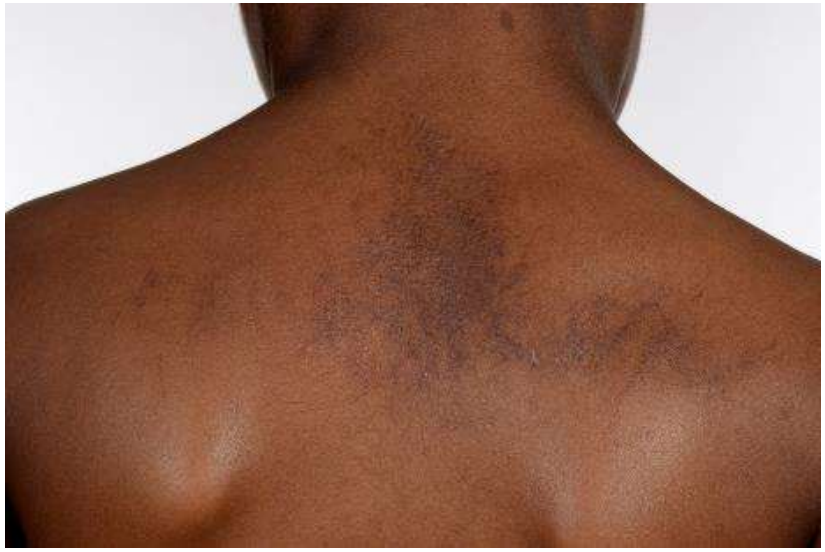


The Miserable Toddler

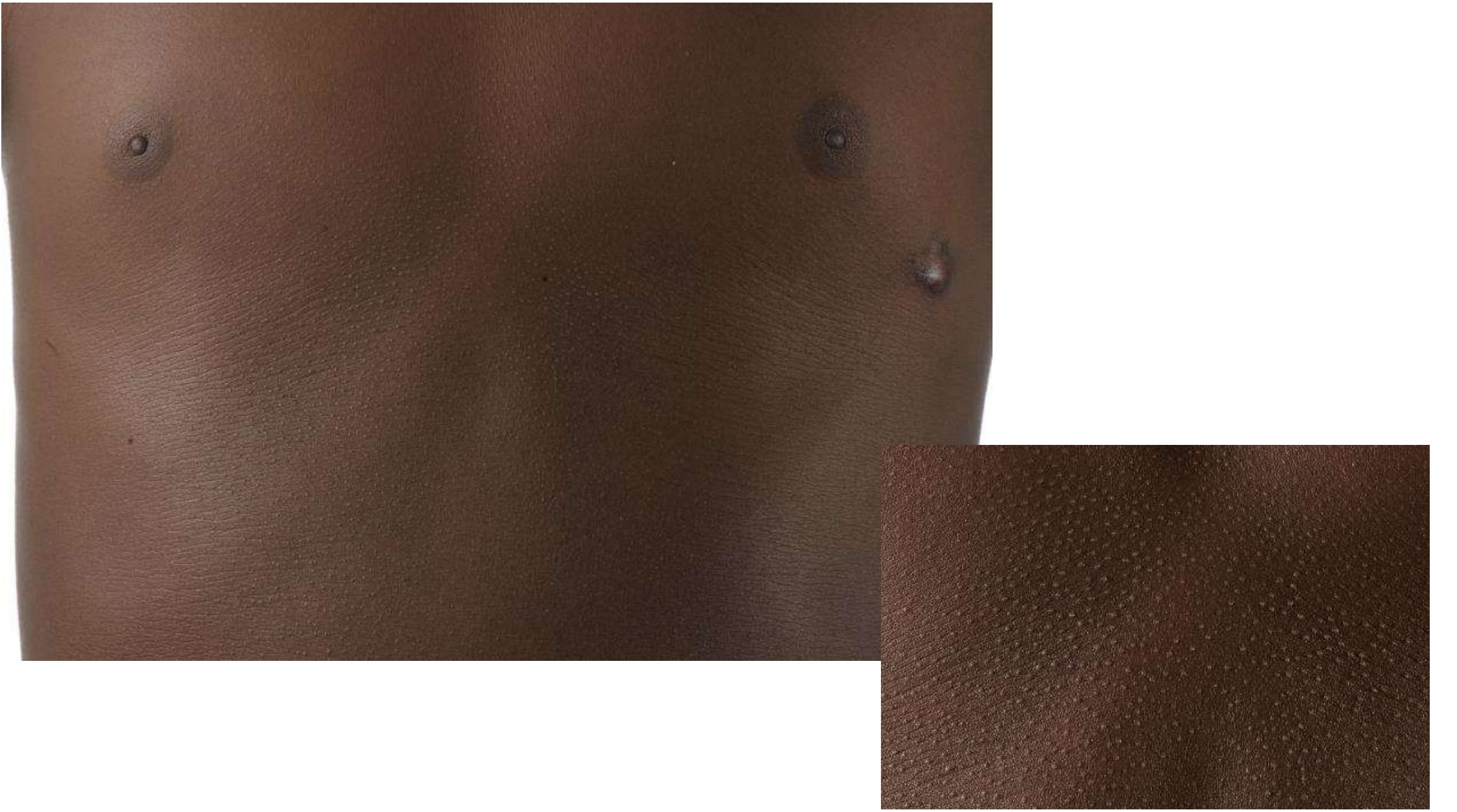








- Lichenified teen



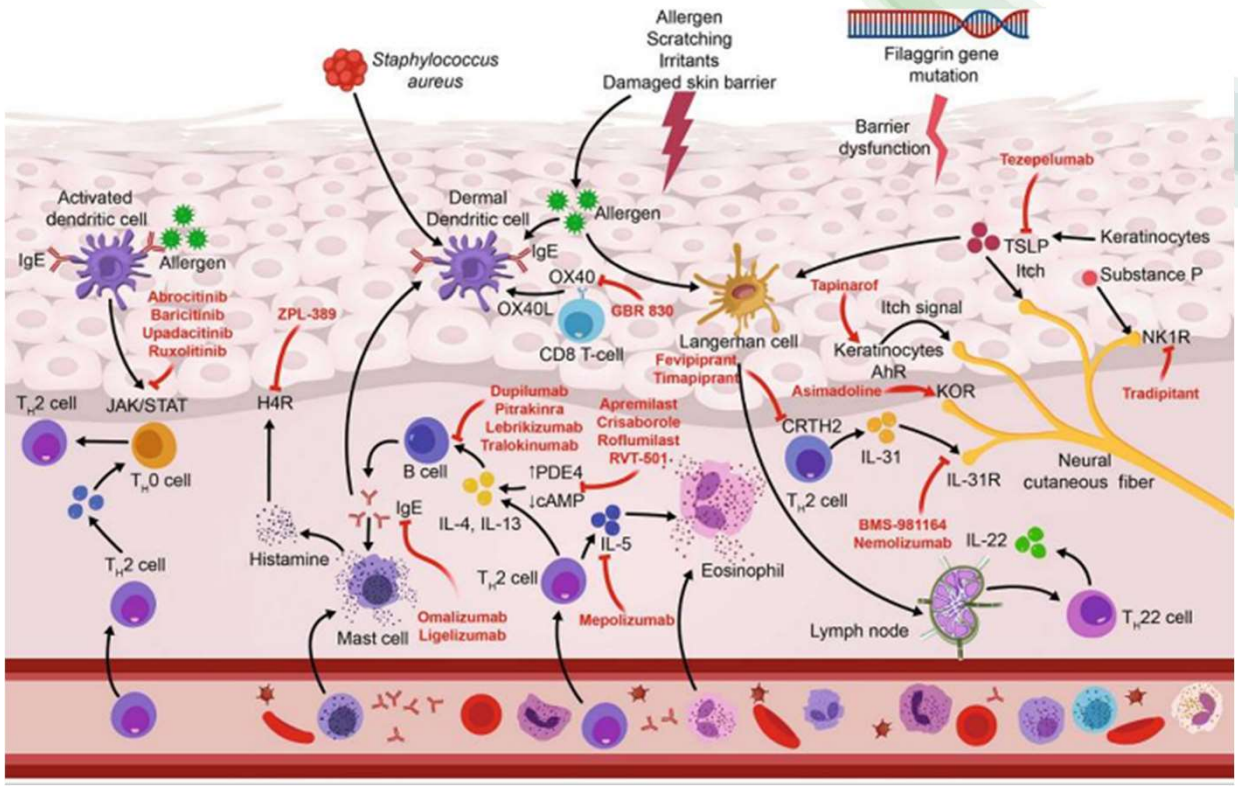
Atopic Dermatitis: Aetiology

Mix of genetic and environmental factors (Complex, multifactorial)

Impairment in skin barrier function and aberrant immune system stimulation

T_H2 axis stimulation

Allergies can aggravate but are rarely the cause



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Atopic Dermatitis: Burden

Impact of AD is wide-ranging, spanning

Higher risk skin infections

sleep disturbances,

lifestyle changes,

treatment issues,

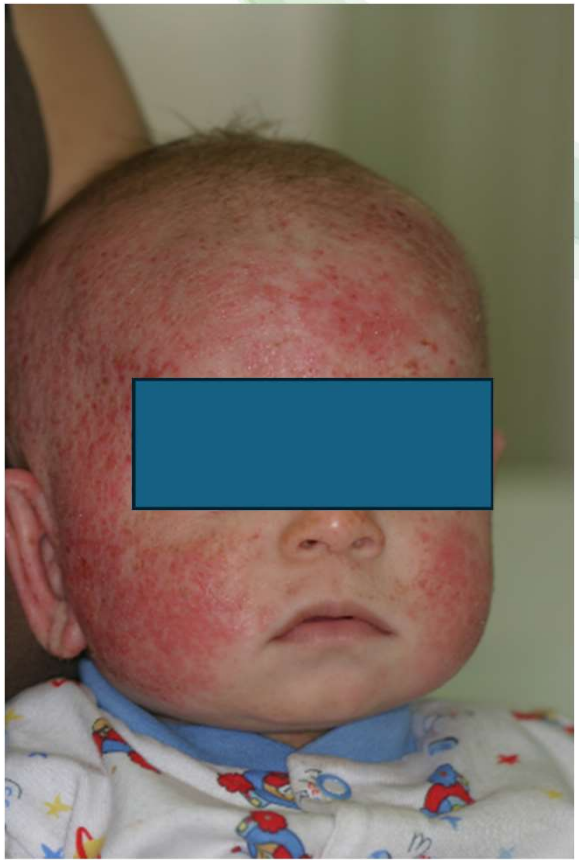
social disruptions,

school performance,

time lost from work,

family activities, and

financial and mental strain



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Eczema

Disclaimer

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Introduction

Eczema (atopic dermatitis) is a very common skin condition that often begins in infancy or early childhood. Most affected children develop eczema before the age of two years, and it usually improves by the age of five. There is often no single trigger for an eczema flare.

Food allergy is more common in children with eczema who also have a family history of allergic disease. Managing eczema well in infants may reduce their chance of developing food allergy. Allergy testing is not routinely recommended for children with eczema and food elimination diets are also not routinely recommended. Skin prick testing and food challenges are usually only helpful in severe cases of eczema where there has been a poor response to first-line treatment or clinical history of allergic reaction.

Unless there is a known or suspected allergy, all infants including those with eczema, should be given a wide range of foods including smooth peanut paste, cooked egg, dairy and wheat products in their first year of life.

Pre-referral management

Please refer to:

- Eczema in children - Health Pathways
- Managing eczema in children: A guide for clinicians

The following suggestions are not prescriptive, but are a guide for short term use.

GP review is advised after two weeks to assess the child's response to treatment.

Severity	Scalp	Face	Body/limbs
Very mild	Soap free shampoo +/-	Hydrocortisone 1%	Hydrocortisone 1%

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Government of Western Australia
Child and Adolescent Health Service

Perth Children's Hospital

Key considerations for clinicians when assessing and managing children with atopic dermatitis who have skin of colour:

A practical toolkit.

Assessment

Atopic dermatitis (AD) presents differently in children with skin of colour (SOC) with clinical manifestations as follows:

- Poorly demarcated violaceous, grey (see figures 1-3).
- Early and more significant lichenification (see figures 2-4).
- Micro-papules centred around hair follicles (called follicular prominence) (see figure 5).
- Postinflammatory dyspigmentation as the AD resolves (see figures 6 and 8).
- Psoriasiform variants (in those with Chinese background), lichenoid variants (more common in those of African background).

Grey is seen instead of erythema (red) in richly pigmented skin (see figure 1 and 2). This is important when assessing severity of disease and scoring AD using traditional severity assessment tools such as the Eczema Area and Severity Index (EASI). Erythema may be difficult to appreciate or even absent in richly pigmented skin. Reliance on erythema risks underestimating disease severity in this demographic.

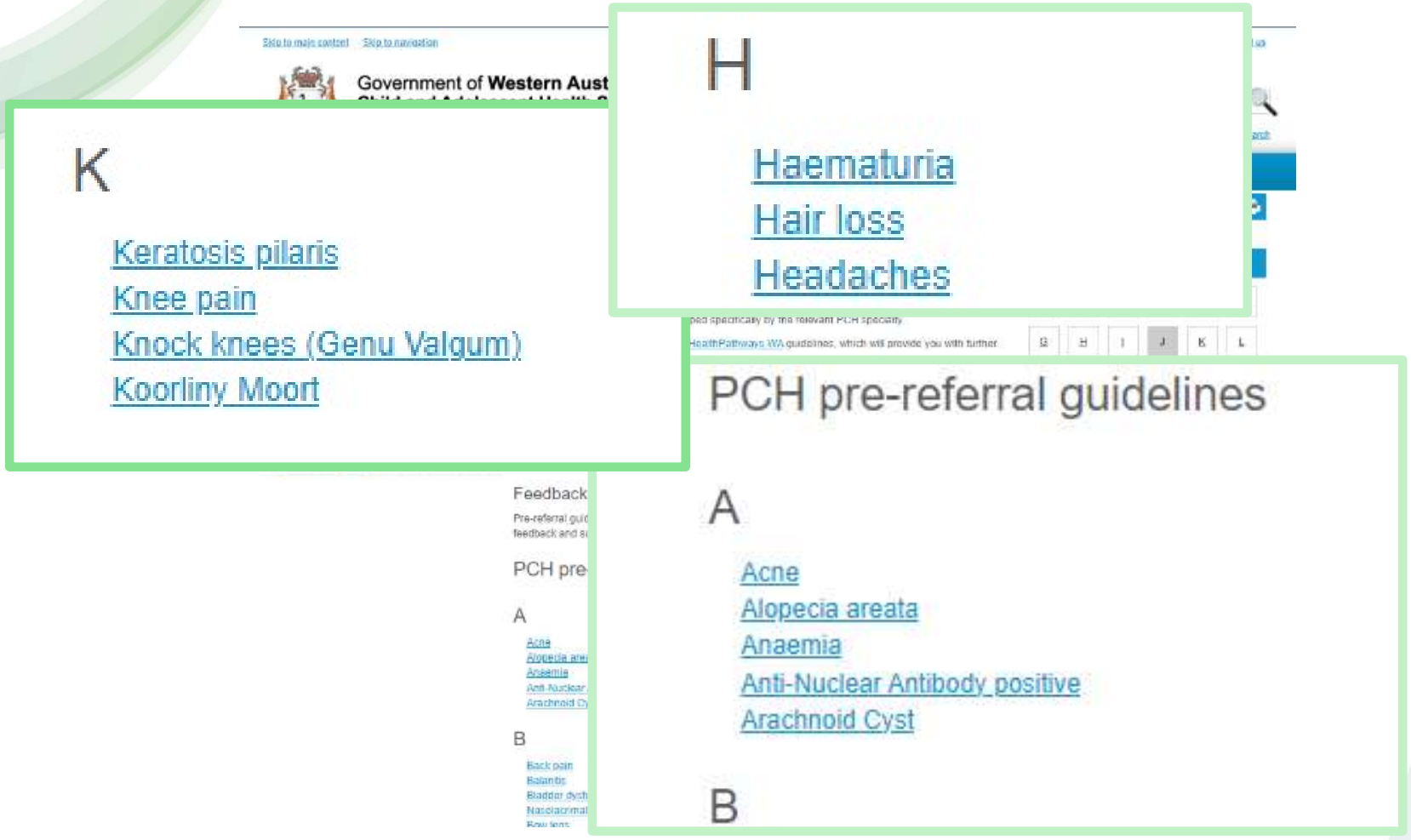
A greyscale in place of erythema may offer greater accuracy in the assessment of AD severity in those with SOC. Increasing the erythema score by 1 point in patients with SOC has also been suggested to avoid underestimation of eczema severity in this group.

Unique complication: Postinflammatory dyspigmentation (lightened or darkened skin over a previously inflamed eczematous lesion) is

Figure 1

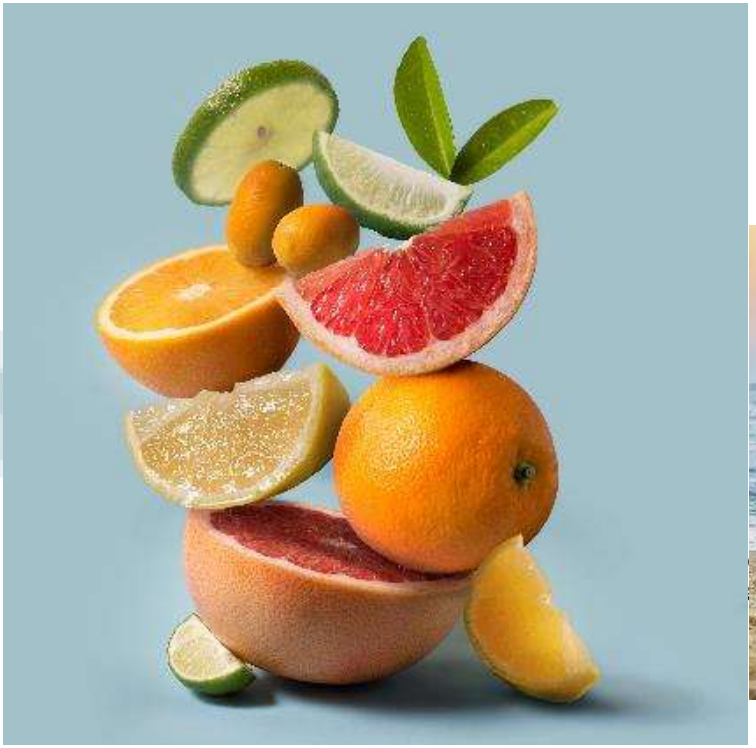
gy, and

Pre referral guidelines : useful information

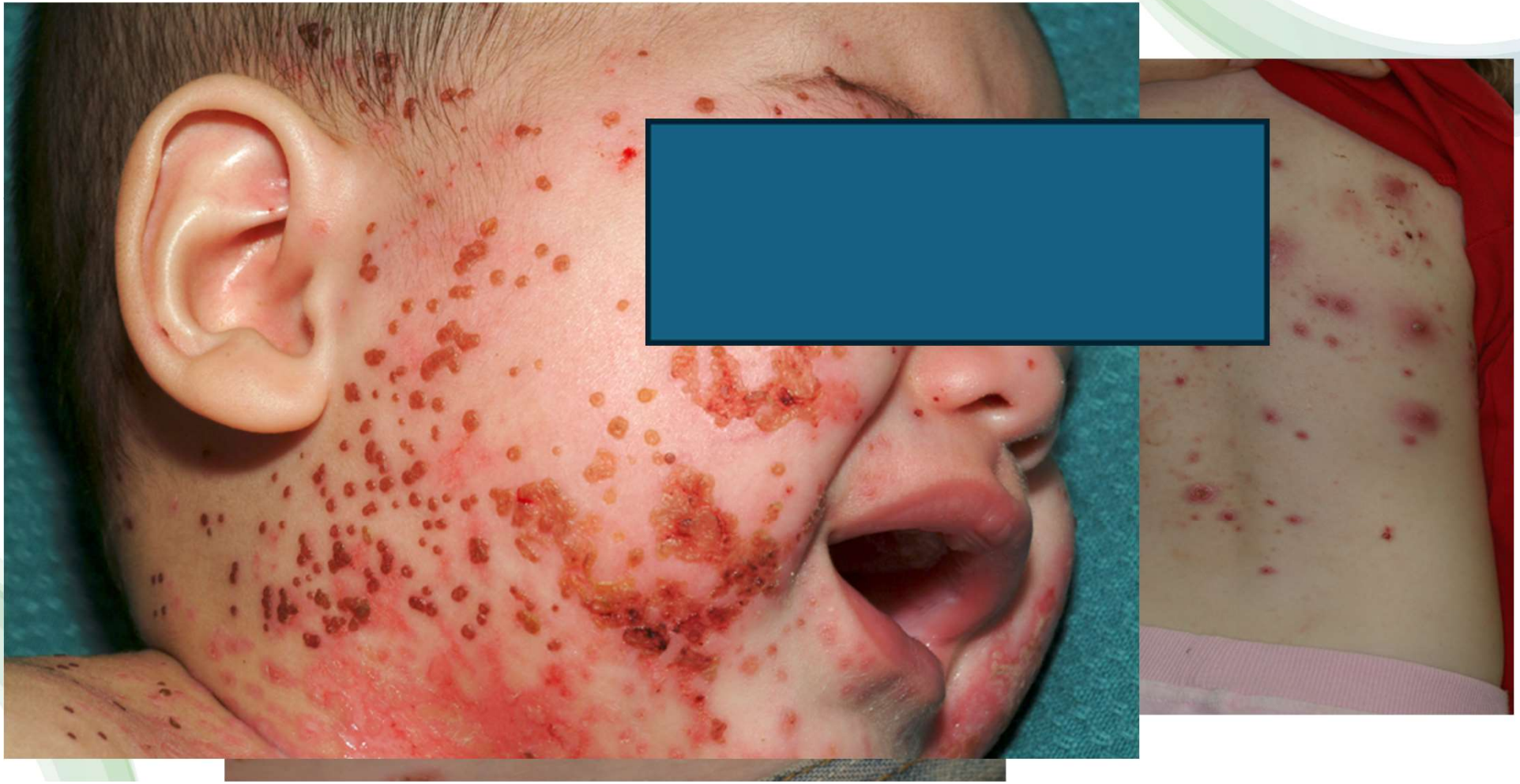


Atopic Dermatitis: Approach to Management

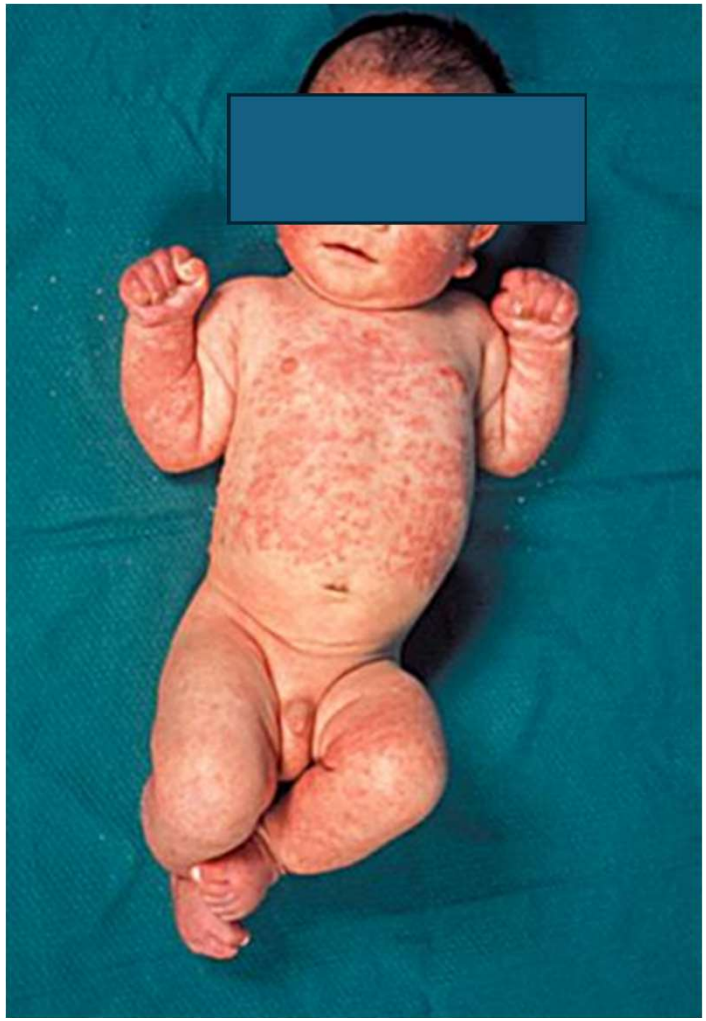
- **Identify aggravating factors**
- Education and adherence to therapy
- Improve the general skin condition with good moisturising
- Specific anti-inflammatory therapy

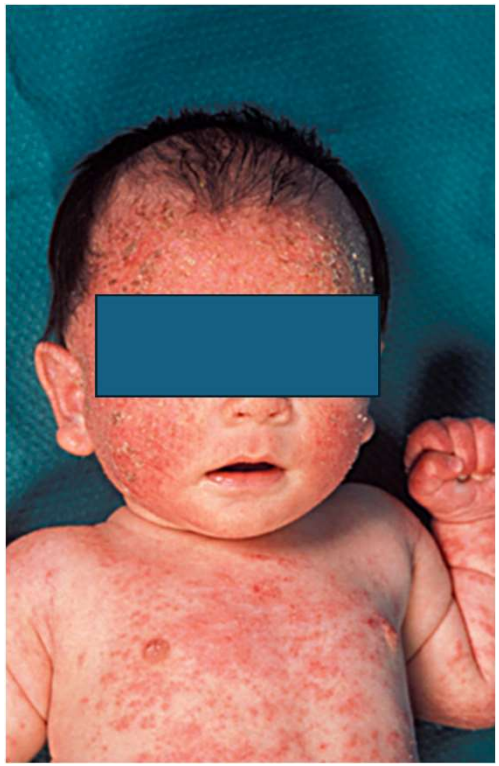


Atopic Dermatitis: Approach to Management



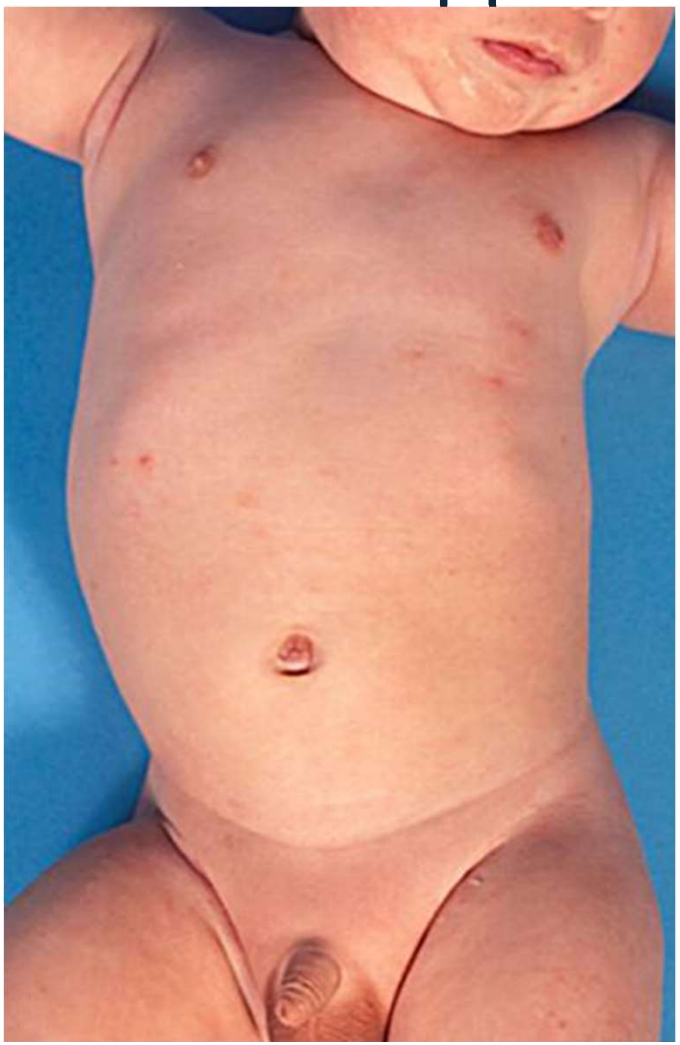
Atopic Dermatitis: Approach to management

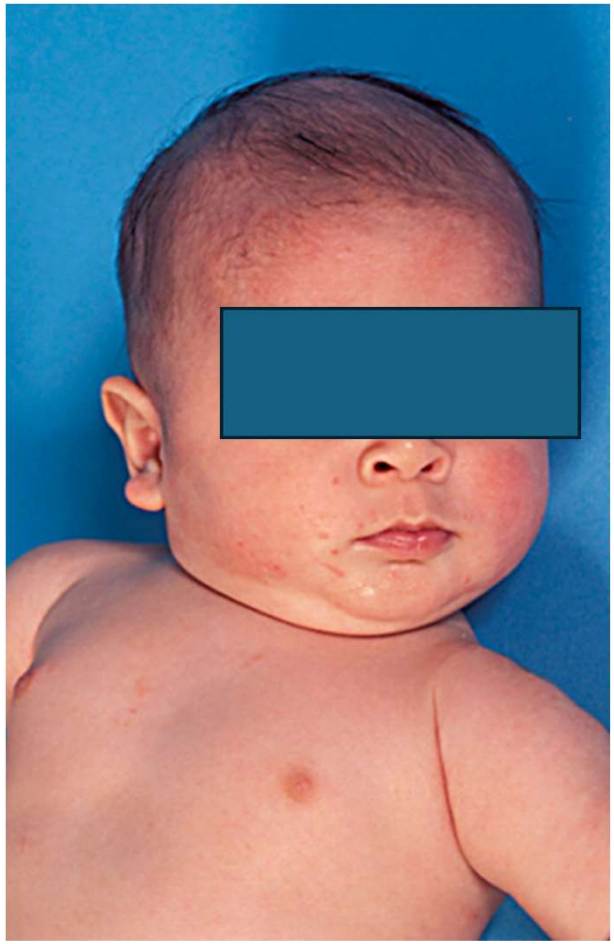




Atopic Dermatitis: Approach to management

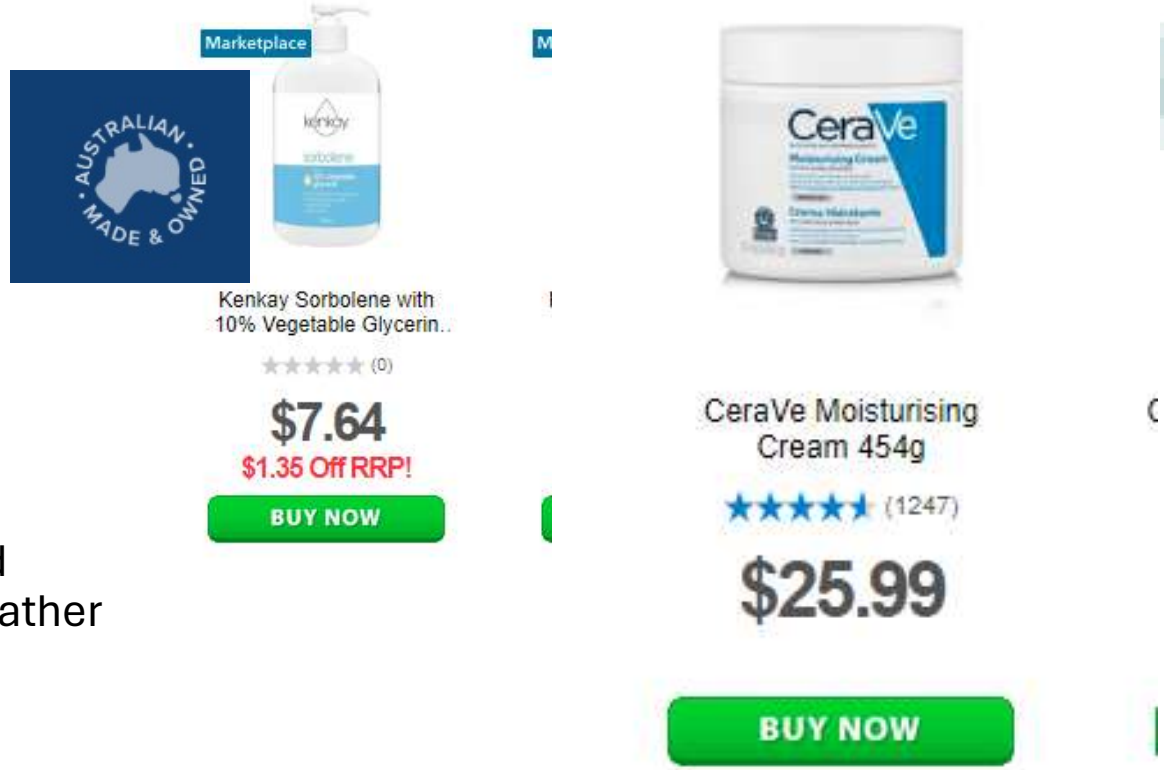
After 3 days





Atopic Dermatitis: Approach to management

- Skin barrier
  - Daily bath
  - Soap substitute, bath oils
  - Moisturiser
    - Straight after bath
    - Avoid lotions (sting)
    - Moisturiser needs to be varied according to skin type and weather
    - Large quantity (cost)



Atopic Dermatitis: Approach to management

Specific Anti-inflammatory Topical Agents

1. Corticosteroids (Corticophobia)
   Most safe and effective
2. Calcineurin Inhibitors
   1. Pimecrolim
   2. Tacrolimus
      Licensed
      Anti itch
3. Phosphodieste
   1. Crisaborol

risk of malignancy with TCI use [57,84]. In accordance, the APPLES (A Prospective Pediatric Longitudinal Evaluation to Assess the Long-Term Safety of Tacrolimus Ointment for the Treatment of Atopic Dermatitis) concluded that tacrolimus use in the pediatric AD population does not increase the risk of cancer, and no lymphomas were reported in a large systematic review [85]. Additionally, although results from a systematic review and meta-

Expert Rev Clin Pharmacol. Author manuscript; available in PMC 2024 February 06.

Atopic Dermatitis: Approach to management

Specific Anti-inflammatory Topical Agents

1. Corticosteroids (Corticophobia)
   - Most safe and effective
2. Calcineurin Inhibitors
   1. Pimecrolimus (elidel)
   2. Tacrolimus (Protopic not released in Australia)
      - Licensed >2yo
      - Anti itch
3. Phosphodiesterase inhibitor
   1. Crisaborole 2%
      - mild-mod AD
      - slower improvement than TCS

Atopi

Think As

Fig. 2

From: Recent Developments and Advances in Atopic Dermatitis: A Focus on Epidemiology, Pathophysiology, and Treatment in the Pediatric Setting

All pediatric patients with AD and their caregivers should receive ongoing disease education and develop an AD action plan

Mild AD Patches of dry skin, some itching, minimal impact on quality of life or sleep	Moderate AD Dry skin, frequent itching, excoriation, skin redness, significant impact on quality of life and sleep	Severe AD Large areas of dry skin, constant itching, redness, and excoriation that strongly impedes daily routine and sleep
Basic maintenance treatment • Skin care involving regular use of emollients and moisturizers as well as bathing in warm water using non-soap cleansers or mild soaps • Avoidance of irritants (eg, soaps, wool), temperature extremes, and proven allergens	**Basic maintenance treatment** • Chosen elements of basic maintenance treatment for mild disease, PLUS: • Maintenance TCS • OR: Maintenance TCI • OR: Crisaborole 2% • AND/OR: Dilute bleach baths and other antiseptic measures, especially in patients with recurrent skin infections	**Basic maintenance treatment** • Chosen elements of basic maintenance treatment for moderate disease, PLUS: • Referral to an AD specialist • Phototherapy • Dupilumab • Systemic immunosuppressant therapy • Other options if AD remains uncontrolled: – Wet wrap therapy – Hospitalization
Acute treatment • Low-to-medium potency TCS applied to inflamed skin • OR: TCI • OR: Crisaborole 2%	**Acute treatment** • Medium-to-high potency TCS applied to inflamed skin, low potency TCS for other sensitive areas • OR: TCI • OR: Crisaborole 2%	**Acute treatment** • Medium-to-high potency TCS applied to inflamed skin, low potency TCS for other sensitive areas • If unresolved after 7 days, consider the following: – Potential nonadherence – Infection – Misdiagnosis – Contact allergy to treatment – Referral to an AD specialist
Advancing from mild to moderate: When symptoms persist despite appropriate use of TCS, antiseptic measures, and irritant avoidance. **Advancing from moderate to severe: When symptoms persist despite an aggressive course of TCS/TCI/crisaborole prescription therapy, especially when there is a large negative impact on daily routine, sleep, or psychosocial health.**		

Comprehensive long-term approach to the management of atopic dermatitis in children. Adapted with permission from Boguniewicz et al. [71]. *AD* atopic dermatitis, *TCI* topical calcineurin inhibitor, *TCS* topical corticosteroids

Atopic Dermatitis: Approach to management

Maintenance: Steroid sparing

1. Intermittent but planned TCS (TCI)
   Eg twice weekly for 3 months then review

2. Narrow Band UVB
   Three times a week for 10 weeks

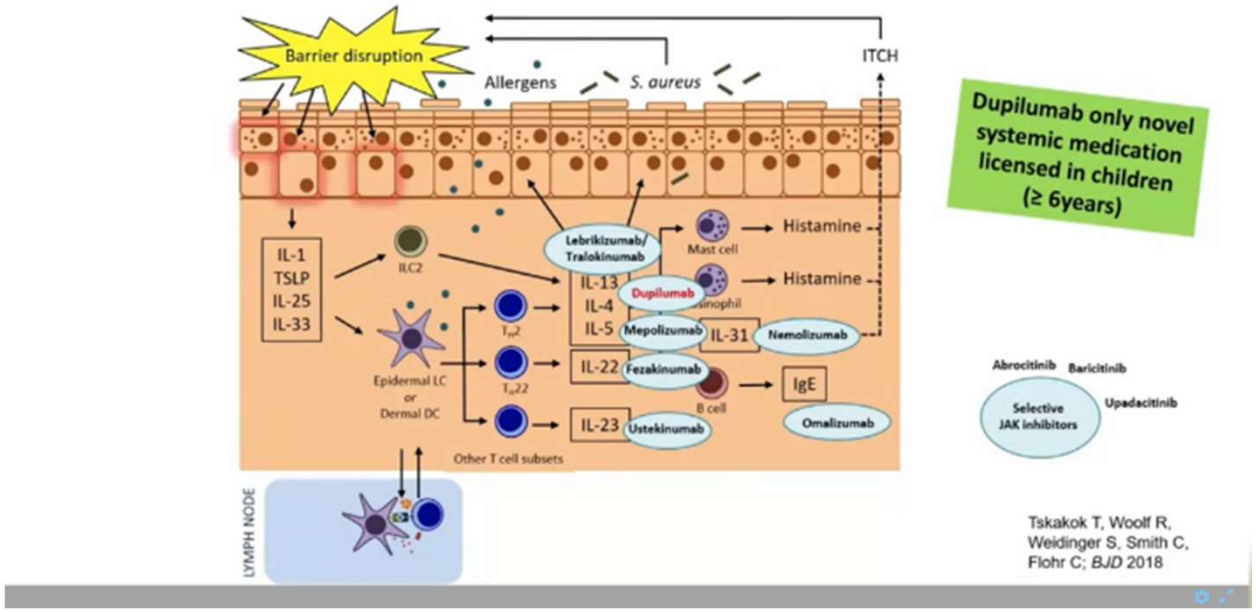
Atopic Dermatitis: Approach to management

Escalation to Systemic Therapy

1. Conventional agents:
   Azathioprine, Cyclosporin, Methotrexate, Mycophenolate

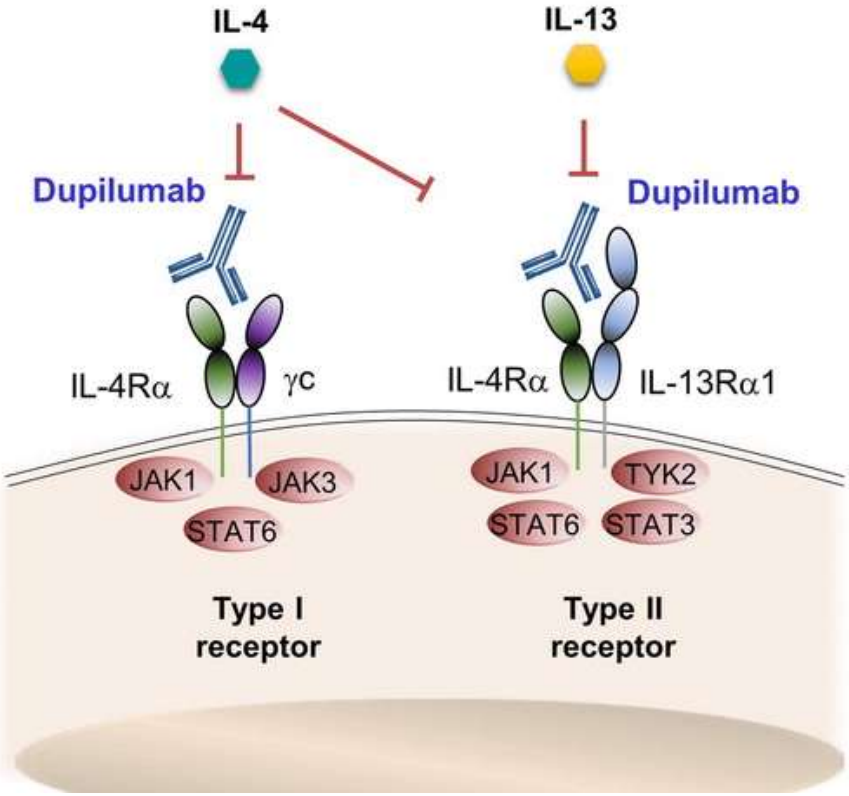
2. Novel agents (PBS listed >12yo)
   1. Biologics
      Dupilumab
      Others in development
   2. JAK inhibitors
      Upadacitinib
      Others in development

New treatment targets



Tskakok T, Woolf R, Weidinger S, Smith C, Flohr C; *BJD* 2018

Dupilumab only novel systemic medication licensed in children (≥ 6years)



Atopic Dermatitis: Approach to management

1. Novel agents (PBS listed >12yo)
    1. Dupilumab
        - PBS Criteria >12yo, mod-severe needing systemic therapy
          EASI > 20, record the DLQI
          Dermatologist
          6 months supply
        - SC injection, prefilled syringe, age/wt based dosing every 2w or 4w
        - NO blood test monitoring
        - AE: minimal in kids, Conjunctivitis approx. 9% (helminths)
        - Quick! Within 2 weeks many note reduced itch, reduced area involved
        - Approx 66% are 75% better at 16 weeks
        - Continuous treatment

- Paller AS et al JAAD 2020 83 (5) 1282-93
- Dupilumab for Atopic Dermatitis-From clinical trials to moleacular and cellular mechanisms. Cabanillas B Dermatitis, 2023, Jan

Atopic Dermatitis: Approach to management

Novel agents (PBS listed >12yo)

Upadacitinib

- PBS Criteria >12yo, mod-severe needing systemic therapy
  EASI > 20, record the DLQI
  Dermatologist
  6 months supply

Reversible, selective JAK1 inhibitor

Oral

Blood test monitoring (Wk 0, 4, 12, >)

AE: nausea, **acne, nasopharyngitis**, URTI, elevated CK with exercise, headaches

Measure UP Upadacitinib 15mg (30mg)

Quick onset, week 2

EASI 75 16w 63-73%

Efficacy is maintained

Gen well tolerated in adol, acne most common ae, mild or mod

(Avoid pregnancy)

Black box warning

Acne

- Very little new in terms of therapeutics
  - One new topical : trifarotene
  - Lot of interest in light based devices
- Societal shift
  - Social media

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For healthcare professionals

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Topical fixed-dose combination treatment for acne

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Acne.org.au

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November 7, 2023

Light laser therapy is a new cutting-edge

NEWS

Laser treatments are safe and effective for those with acne

November 7, 2023

Did you know that light laser therapy

NEWS

New remedies in treating adolescent acne are on the way

November 7, 2023

Acne affects more than 80 per cent of

Looking for something in particular?

We have a range of quality, evidence-based information to help you understand more about acne and how it affects you. Is there something specific you're looking for?

Causes

Find out why acne outbreaks happen and how to help prevent them.

Treatments

Get the low-down on acne medication and skin care.

Scars

Worried about acne scars? Find out what you need to know.

Emotions

Having acne can have a big impact on your self-esteem.

Parents

Parenting a teen with acne? Get some resources to help.

Professionals

Looking for the latest information for your patients? Login to our portal here.

Join Our Newsletter

Sign up to the All About Acne newsletter for the latest news, research, and articles direct to your inbox!

First Name *

First Name *

Last Name *

Last Name *

Email *

Email *

SUBMIT

Role *

- ○ Pharmacist
- ○ Pharmacy Assistant
- ○ GP
- ○ Dermatologist
- ○ Dermatology Nurse
- ○ Other health professional
- ○ None of the above

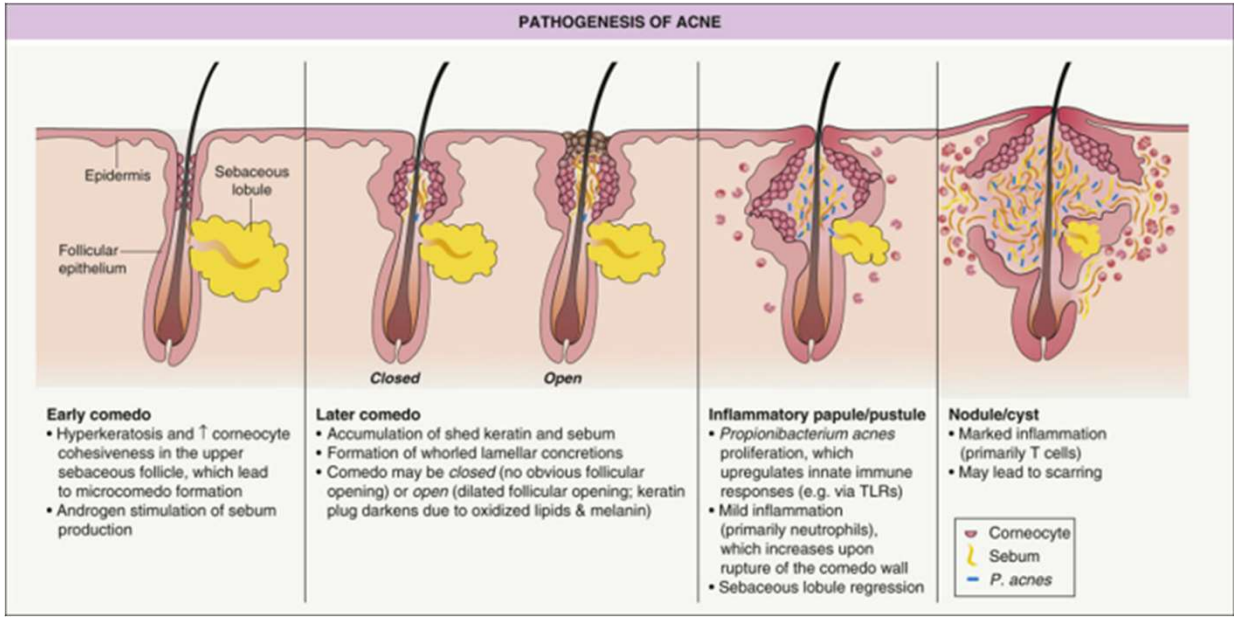
Acne: Approach to management

- Assessment
- Education
- Skin care
- Topical treatment
- Oral Treatment

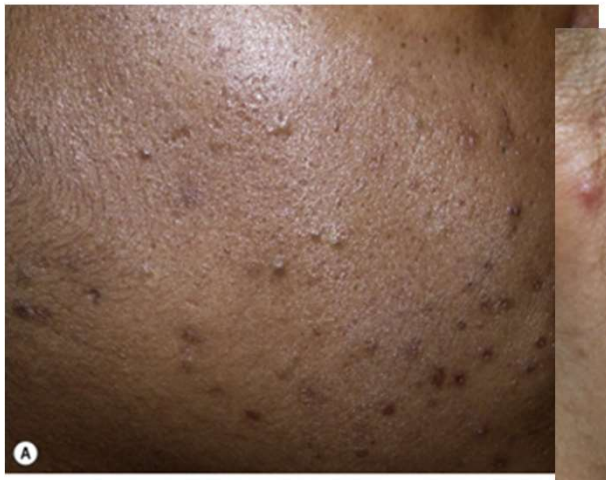
- What are the lesions you are treating?
- What is the severity?
- Patient factors

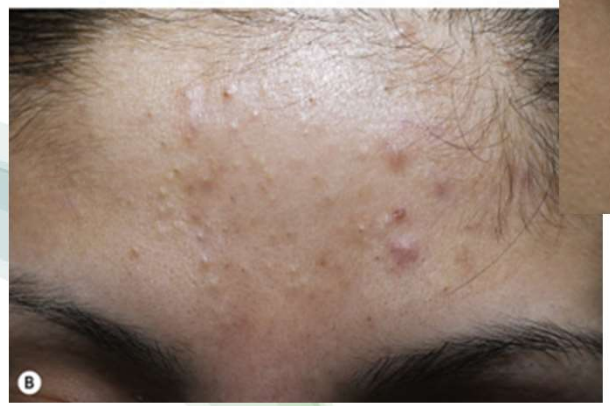
Acne: Approach to management

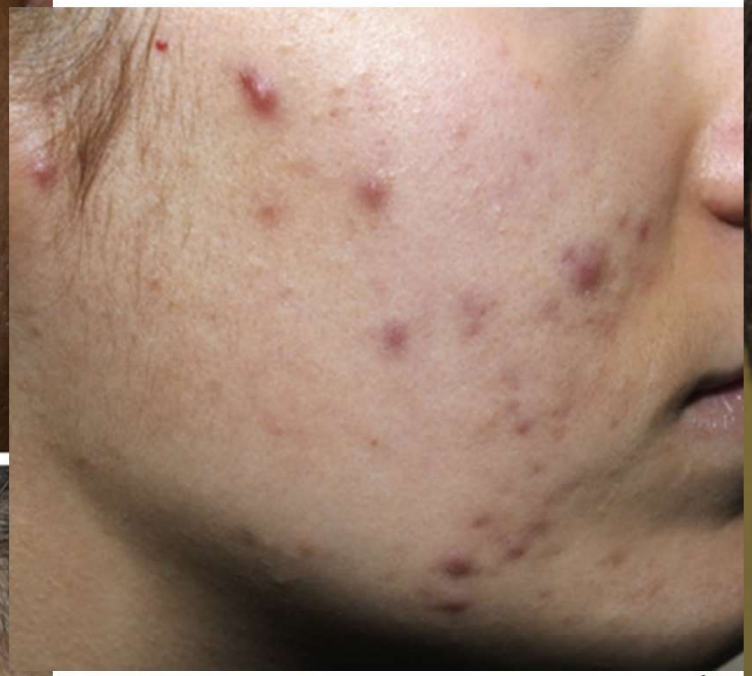
- Classification of lesions
  - Comedones
  - Inflammatory lesions: papules and pustules
  - Nodules and pseudocysts
  - Resolving lesions: macules, scars

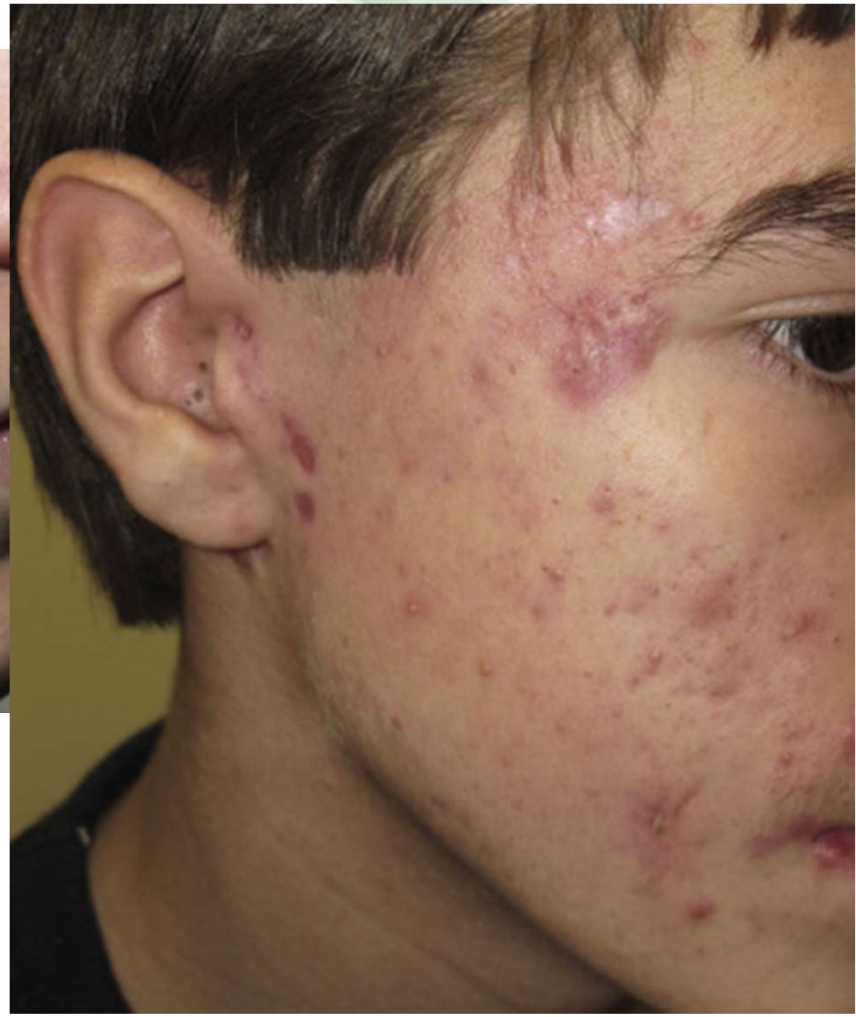


Acne: Approach to management









Acne:

Acne

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Introduction

Acne is a common condition that predominantly affects young adults and adolescents (approximately 85%)[1, 3].

The pathogenesis of acne can be explained by four main causes:

1. Increased sebum production
2. *Cutibacterium acnes* overgrowth
3. Inflammation
4. Abnormal follicular keratinisation

Areas with highest density of sebaceous glands are affected the most by acne, for example face, neck, chest, shoulders and upper back.

Acne is generally classified as mild, moderate or severe and based on number of lesions, cosmetic impact and impact on quality of life. Acne treatments often take at least 6-12 weeks before improvement is noted regardless of the treatment method[3]. The aim of treatment is to reduce the number of comedones, inflammatory lesions and likelihood of permanent pigmentary changes as well as to prevent scarring.

Pre-referral investigations

For current guidelines on assessment, management and referral guidelines on Acne please visit HealthPathways WA.

Pre-referral management

General measures

Referring department

Dermatology department

Useful resources

1. Acne GP Information Brochure
2. RACGP Acne in adolescents
3. Drug treatment of acne - Australian Prescriber (nps.org.au)
4. Acne | DermNet (dermnetnz.org)

- Grooming