Common Skin Problems

Jo Peterson
Nurse Practitioner Child and Youth Health Service Clinical Director Starship Community Health
with thanks to Alison Vogel

Tracy McKee
Nurse Practitioner Toi Tu Kids Service Te Hononga
Topics

General principles
Impetigo
Cellulitis
Eczema
Scabies
Approach to Assessment and Treatment

- History of systemic illness/ warning signs
- History of skin symptoms
- Examination
- Formulate likely diagnosis
- Treatment
- Review
General Danger Signs

- Lethargy
- Inability to drink
- Persistent vomiting
- High fever
History

- Is skin itchy?
- Is there pain from the skin?
- Any allergies

- How long has the problem been present?
- Have they had any treatment?
- Has anyone else in the family got the same problem?
Examination

• Wash hands.

• Examination- Look for:
  – Extensive warm redness and swelling.
  – Localised warm tender swelling or redness.
  – Swelling or redness around the eyes.
  – Discrete lesions with pus or crusts.
  – Papules on the hands, knees, elbows, feet, trunk.
  – Round to oval scaly patches.
Discrete sores/lesions with pus or Crusts

Impetigo
Impetigo

- Common highly contagious bacterial infection
- Usually a clinical diagnosis
- Caused by *Staphylococcus aureus* or *Streptococcus pyogenes* alone or together
Bullous impetigo
Non Bullous

 Begins as vesicles that rupture and contents dry to form a gold coloured crust
Treatment of Impetigo

Antibiotic vs antiseptic
Extensive Impetigo

• Involving > 5% of body surface area
• Or systemic symptoms

Treat with **oral antibiotics**
Allergy

There is a 3-10% cross-reaction rate between penicillins and cephalosporins.

• mild penicillin allergy or adverse reaction (e.g., mild rash, diarrhea) then you may prescribe a cephalosporin

• severe penicillin allergy (e.g., severe rash, urticaria, angioedema, anaphylaxis, hypotension or bronchospasm) then do not prescribe a cephalosporin
Follow-up

- Follow up in five days to assess for resolution
- May need to continue for a further 2-5 days treatment
Warm tender swelling and redness

Likely cellulitis or abscess
Cellulitis

• Cellulitis is a diffuse inflammation of the soft tissue or connective tissue due to infection

• Most common causative organism is *Streptococcus pyogenes*
Differential Diagnosis

• Allergic reactions
• Contact dermatitis
• Staphylococcal scalded skin syndrome
• Septic arthritis (cellulitis over a joint)
• Osteomyelitis

• BE CAUTIOUS
Periorbital or orbital cellulitis

Swelling or redness around eyes

Needs medical review
Risk factors in cellulitis

If Swelling or redness is:
   – Peri orbital or orbital
   OR
   – Circumferential around a limb
   OR
   – Over a joint
   OR
   – On the hand or foot
   OR
   – The child is < 1 year of age

Then the child should be referred immediately to hospital for further assessment.
Risk factors cellulitis

- It is more urgent if:
  - The affected skin is on the face
  - The child has a chronic illness (like diabetes) or a problem with the immune system
  - The child has had an animal (or human) bite - refer GP
  - The area of redness is spreading very quickly or is very painful
Treatment of cellulitis

• Oral antibiotics
  – Flucloxacillin
  – Cephalexin
  – Erythromycin

• If not resolving with oral antibiotics after 48 hours may need admission and treatment with IV antibiotics
Supportive treatment

• Rest and if possible, raise the affected area. For example, place an arm in a sling or prop a leg on pillows. This may ease the pain and reduce swelling.

• Pain relievers such as paracetamol, or ibuprofen can help reduce discomfort
Key messages

• Cellulitis can worsen rapidly resulting in need for hospital admission

• Follow-up Useful to mark edge for comparison at followup

• Review at 5 days. If swelling or redness persist continue antibiotic for a further 5 days.
What is ok

• Redness and swelling for a few days after starting antibiotic treatment.
• To have a hard lump surrounding the area for some time following treatment.
• To have contact with friends and family, however it is important to wash hands well and keep any oozing wounds covered.
Use of swabs in Skin Infections

- Not needed routinely
- May be useful if recurrent infection
- Failure with oral antibiotics
- Community outbreaks
- Nasal swabs can identify carriage needing nasal treatment
Eczema
Diagnosis

An itchy skin condition (or parental report of scratching) in the last 12 months, plus three or more of the following:

• A history of involvement of the skin creases (fronts of elbows, behind knees, fronts of ankles, around neck, or around eyes).

• A personal history of asthma or hay fever (or history of atopic disease in a first degree relative if a child is less than 4 years of age).

• A history of generally dry skin in the last year.

• Onset under the age of 2 years (not used if a child is less than 4 years of age).

• Visible flexural eczema (including eczema affecting cheeks or forehead and outer aspects of limbs in children less than 4 years of age).

(NICE Guidelines)
Skin Wars

Breaking the itch-scratch cycle
Eczema skin

Loss of water

Loss of fat

Loss of water

Loss of fat

Eczema

Allergens penetrate into skin - skin reacts

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What is skin flare-up

What you see / feel

• Red Skin
• Itchy skin
• Dry skin

What causes it

• Blood vessels dilate
• Nerves stimulated
• Skin cells leaking
Skin flare-up

1. Itch

- Allergen
- Skin surface
- Itch
- Itch
- Itch
- Nerves stimulated
- Lymphocyte
- Blood vessels dilated

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Skin flare-up

2. Itch-scratch

- Scratch
- Allergen
- Itch
- Nerves stimulated
- Lymphocyte
- Blood vessels dilated

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Skin flare-up

3. Itch-scratch-damage

Scratch → Scratch → Scratch → Allergen

Skin damage:

- Itch
- Itch
- Itch
- Itch
- Itch
- Itch
- Nerves stimulated
- Blood vessels dilated
- Lymphocyte

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Skin flare-up

7. Itch-scratch-cycle

- Itch
- Scratch
- Red, dry skin
- Damaged Skin
- Attacking chemicals released
Super S stops the itch

Scratch

Itch

X

Red, dry skin

Damaged Skin

Super S

Attacking chemicals
Skin wars - episode 1

BADDIES
- Bubble bath
  - Washing-up liquid
  - Cleaning fluids
  - Surfactants

Healthy skin
- Soap
  - Emollients

GOODIES
- Emollients
  - Eczema skin

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Role of Filaggrin

An inherited abnormality in filaggrin expression is now considered a primary cause of disordered barrier function.

It is postulated that the loss of filaggrin results in:

• Corneocyte deformation (flattening of surface skin cells), which disrupts the organisation of the extracellular lipid (fat) – the lamellar bilayers.
• A reduction in natural moisturising factors, which include metabolites of pro-filaggrin.
• An increase in skin pH which encourages serine protease activity – increases inflammation
Normal skin barrier

Filaggrin staining in normal skin

Defective skin barrier

No filaggrin granules

Ichthyosis vulgaris and atopic dermatitis

Filaggrin granules
Brick wall analogy
Treatment Options
Emollients

Up to 5 times a day
Not long lasting
Steroids

Use in stepwise manner
Lowest to highest
Use for short period
Use enough!!
## Steroid Potency

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 1</td>
<td>Very potent or super potent (up to 600 times as potent as hydrocortisone)</td>
<td>Dermol™ cream/ointment/scalp lotion, Diprosone™ OV cream/ointment</td>
</tr>
<tr>
<td>Class 2</td>
<td>Potent (100-150 times as potent as hydrocortisone)</td>
<td>Beta™ cream/ointment/scalp solution, Locoid m-mometasone™ cream/ointment Elocon™ cream/lotion/ointment (Advantan™ cream/ointment)</td>
</tr>
<tr>
<td>Class 3</td>
<td>Moderate (2-25 times as potent as hydrocortisone)</td>
<td>Eumovate™ cream Aristocort™ cream/ointment</td>
</tr>
<tr>
<td>Class 4</td>
<td>Mild</td>
<td>Hydrocortisone (DermAid™ cream/soft cream, DP™ lotion-HC 1%, Skincalm™, Lemnis™ Fatty Cream HC, Pimafucort™ cream/ointment) Micreme™ H cream, Resolve Plus™ 0.5%, 1% cream</td>
</tr>
</tbody>
</table>
**How Much??**

![Image of finger with medication applied]

**Table 3: Approximate number of adult finger tip units (FTU) of corticosteroid needed per application for children with eczema**

<table>
<thead>
<tr>
<th></th>
<th>3–6 months old</th>
<th>1–2 years old</th>
<th>3–5 years old</th>
<th>6–10 years old</th>
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</thead>
<tbody>
<tr>
<td>One entire arm and hand</td>
<td>1</td>
<td>1.5</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>One entire leg and foot</td>
<td>1.5</td>
<td>2</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>Torso (front)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>Back and buttocks</td>
<td>1.5</td>
<td>3</td>
<td>3.5</td>
<td>5</td>
</tr>
<tr>
<td>Face and neck</td>
<td>1</td>
<td>1.5</td>
<td>1.5</td>
<td>2</td>
</tr>
</tbody>
</table>

*Note that these values are a guide and will be influenced by the size of the child*
Other Treatments

• Wet wraps- decreasing in favour as time consuming- use as trial if no response to treatment
• Treat infections quickly
• Pinetarsol no longer recommended
• Aqueous cream not advised
• Bleach baths
Bleach bath instructions

Dilute bleach (sodium hypochlorite) baths can improve eczema and prevent skin infection.

Use dilute bleach baths twice a week for everyone when there is skin infection in a household.

1. Choose the right bleach
   The bleach should be plain, without added fragrance or detergent.
   Budget Household Bleach Regular (2.2%) is recommended.
   Bleach gets weaker with time so you may need to get a fresh bottle.
   Make sure you store the bleach where children cannot reach it.

2. Fill your bath or tub with warm water
   A full-sized bath filled 10cm deep holds about 80 litres of water.
   A baby's bath holds around 15 litres of water.
   You can work out how much water is in your bath by filling it to a mark using a bucket or large bottle.

3. Add bleach and mix well
   Add 2 ml of 2.2% Budget Bleach for every 1 litre of water (this will make a 0.005% solution). Other brands of bleach may be a different strength – check the bottle.
   A 10cm deep full-sized bath will need half a cup (150ml) of 2.2% Budget Bleach.

4. Soak in the bath for 10–15 minutes

5. Rinse off with tap water
   Pat skin dry with a towel. Do not share towels.
   Apply steroid and moisturiser creams.

6. Use dilute bleach baths 2 times a week
   See your doctor or nurse if skin is irritated by the bath, or if infection occurs.

The information was correct at time of writing, but commercial bleach products may change. See your doctor if you have any concerns.

Produced by Slava Parvin, Paediatric Dermatologist
Its all in the plan...
**ECZEMA SKIN versus NORMAL SKIN**

**Tips on how to keep skin healthy and stop ITCHINESS**

- Bath your child EVERYDAY
- Try bleach in the bath (Budget brand preferred)
  - 1 cap in a small baby bath
  - 1/4 cup in a large adult bath
  *At least twice a week*
- NO SOAP or use cream such as emulsifying or as advised.
- Keep their nails SHORT.
- Pat dry (no rubbing)
- Wash hands before and after applying creams
- Put creams on your skin immediately after bath or shower

*Keeping on top of your child’s “ECZEMA”*

Child’s name: ____________________________

Date: ____________________________

Te Hononga o Tamaki me Hoturoa
PO Box 8139, Symonds Street, Auckland
Ph: (09) 973 0787 Fax: (09) 973 0789
Nurse Practitioner: Jo Peterson 027 555 1626
Whānau/Family Support Worker: Priscilla Williams 021 989 703
If the skin looks like this........

**MILD**
Dry skin with ITCHING

1) Use _______________________
   ______ times a day everyday
2) Use _______________________
   ______ times a day for _____ days
If it’s worse then try the next creams

**MODERATE**
Dry skin with Redness & Itching

1) Use _______________________
   ______ times a day everyday
2) Use _______________________
   ______ times a day for _____ days
Apply steroid cream first followed by moisturiser cream after
If it gets better go back to the mild

**SEVERE**
Dry, red and very itchy skin may be oozing blood

1) Use _______________________
   ______ times a day everyday
2) Use _______________________
   ______ times a day for _____ days
Apply steroid cream first followed by moisturiser cream after

**CLEARING**

**DRY SKIN**

1) Use _______________________
   ______ times a day everyday
Continue to use your moisturising cream AFTER your skin is clearing...

**TYPES OF CREAMS....**

- Moisturiser
- Steroid

**How much steroid to use...**

The fingertip unit method*
FTU = Fingertip unit(adult)
1 FTU = 1/2 g of cream or ointment.
Measurement based on 5mm nozzle.

<table>
<thead>
<tr>
<th>Area</th>
<th>1 FTU</th>
<th>1 1/2 FTU</th>
<th>2 FTU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face &amp; Neck</td>
<td>1</td>
<td>1 1/2</td>
<td>2</td>
</tr>
<tr>
<td>Arm &amp; Hand</td>
<td>1</td>
<td>1 1/2</td>
<td>2</td>
</tr>
<tr>
<td>Leg &amp; Foot</td>
<td>1 1/2</td>
<td>2 1/2</td>
<td>3</td>
</tr>
<tr>
<td>Trunk (front)</td>
<td>1 1/2</td>
<td>2 1/2</td>
<td>3 1/2</td>
</tr>
<tr>
<td>Trunk (back)</td>
<td>2</td>
<td>2 1/2</td>
<td>3</td>
</tr>
</tbody>
</table>

*1 FTU (adult)
1 FTU = 1/2 g of cream or ointment.
Measurement based on 5mm nozzle.
Common Misconceptions

It's all about the food?
Common Misconceptions

They will always grow out of it
The creams don’t work
There is a cure
Infected eczema
Treatment of infected eczema

• If localised- treat with topical antibiotics as per impetigo
• If extensive needs oral antibiotics
• Important to address underlying skin dryness and provide ongoing treatment for the eczema to prevent recurrence
Eczema herpeticum
Herpes superinfection (rare)

- Areas of rapidly worsening, painful eczema
- Possible fever, lethargy or distress
- Clustered blisters like early cold sores
- Punched out erosions (usually 1-3 mm) uniform in appearance
- Consider *Herpes simplex* if infected eczema fails to respond to antibiotic treatment and topical steroid

- Suspected eczema herpeticum needs same day specialist review
Likely scabies
Consider distribution
Possibly fleas or insect bites
Scabies
Scabies

An infestation of the skin caused by the scabies mite *Sarcoptes scabiei*. 
Scabies Recognition

• If it itches its probably scabies

• Itchiness and papules

• On hands especially the interdigital spaces, flexure surface of the wrist, elbows, genitalia, axillae, umbilicus, belt line, nipples and buttocks, knees, feet.

• Can also involve the head and neck especially in infants and children.
Scabies treatment

• Permethrin most effective in Cochrane
• Treat the whole family with the lotion, irrespective of symptoms
• Often advised to repeat in one week- no clear evidence as to whether this is needed
Choices

- Permethrin 5%
- Malathion
- Gamma Benzene Hexachloride (Lindane)
Contraindications:

• Check allergy status first. Do not give if known hypersensitivity to permethrin, synthetic pyrethroids or pyrethrin.
• Not to be used on infants less than 2 months old.
• Pregnancy or Breastfeeding
Scabies Treatment

• Under 2-apply a thin film applied to the scalp, face and ears, avoiding eyes and mouth.
• Over 2- Apply Permethrin to skin from neck down
• Leave for 8-14 hours overnight
• Wash off in the morning

TREAT THE WHOLE FAMILY OR DON’T TREAT AT ALL
Supportive advice- scabies

• Wash sheets and pillow cases and any clothes worn against the skin over the last week.
• Vacuum carpet and furnishings.
• Most people's itch improves within a few days of treatment but it may take 4-6 weeks for the itch and rash of scabies to clear completely because of dead mites at the skin surface. These will be slowly cast off.
Mosquitoes

- Mosquitoes need water to breed so a simple way to stop them breeding is:
  - Get rid of objects outside that hold water, including jars, bottles or old tyres. Fill pot plant saucers with sand (inside home also)
  - Regularly empty and refill drinking bowls for pets
  - Check that gutters are drains are not blocked
  - Fill or drain hollows that can hold water
Fleas

• There is no cheap and easy solution. Flea bombs may kill the fleas but not their eggs. Flea eggs hatch every few days so the cycle needs to be broken.

• A pyrethrum residual insecticidal powder sprinkled evenly over the floor (including carpet) and left there for at least 7 days is helpful against both adult and newly emerged fleas.

• Other suggestions:
  – Vacuum regularly and change the vacuum bag
  – Put all bedding and clothes through a hot wash, and dry thoroughly
  – Treat pets – see the local pet shop or vet for advice
Accident Compensation Corporation (ACC)

ACC will cover injuries including

- insect, animal or human bites,
- cuts, grazes,
- sports injuries.

- The cover includes all hospital and GP visits, consultation fees and treatment prescribed.
Resistance MRSA etc

Everyone's role to reduce resistance
Antibiotic crisis 'bigger than Aids epidemic' - medical chief

By Fergus Walsh
Medical correspondent

A simple cut to your finger could leave you fighting for your life. Luck will play a bigger role in your future than any doctor could.
Speaking So Others Understand

- Health literacy so important
- More than just understanding
- Clear, concise information and reasons for treatment
- Face to face where possible
- Demonstrate
- Uses resources
- Tell people when to worry and where to go
Take Home Messages

• Get consent!
• Watch out for the sick child - refer or review if worried
• Check allergy
• Bugs spread - cover
• Hand washing!
Patient resources

**Brochure** (Auckland Regional Public Health Service), in **English**, **Tongan** and **Samoan**.


Available from **HealthEd**
https://www.healthed.govt.nz/resource/scabies


Information sheets on
- Impetigo - school sores
- Serious skin infection
- Boils
- Eczema
- Headlice
- Warts

- Videos!!
NORTHERN REGION CLINICAL PATHWAY FOR THE ASSESSMENT AND MANAGEMENT OF SKIN INFECTIONS IN CHILDREN > 3 MONTHS – 14 YEARS

- This pathway is a guide for clinical decision making and should not replace clinical judgement in individual cases.
- Treatment of neonates with skin infections is outside the scope of this guideline.
- Clinical judgement regarding early referral to secondary care is advised.
- Not for immunosuppressed patients.
- For patients ≥ 15 years old, refer to the Adult Cellulitis Clinical Pathway.
- Children between 12-14 years of age and requiring IV antibiotics may be suitable for POAC. Discussion with an on-call paediatrician is advised prior to referral to POAC.
Online Resources for Reference

- www.dermnet.org.nz
- http://www.healthpointpathways.co.nz/northern/
Toi Tu Kids Service

"Our vision is all children reaching their potential and participating fully in life by removing barriers and building healthy whanau/families and communities”
Nurse Led Eczema Clinics for Children in General Practice (Jess Tiplady, Karen Hoare)
Why does Eczema matter?

Quality of life

Eczema can affect children’s quality of life in many ways

• Itch
• Disturbed sleep and fatigue
• Behaviour problems, ADHD
• Time spent and dislike of treatments
• Restriction of diet, activities and clothing
• School absenteeism
• Bullying
• Self-esteem
• Peer relationships

Children with eczema have twice the rate of psychological problems as their peers

Children’s Life Quality Index scores for 540 children; 379 with chronic skin disease and 161 with other chronic diseases. Beattie et al 2006
• Children with eczema benefit from regular recall, review, family education & preventative care

• Children with moderate to severe eczema can be followed up and recalled utilising the PMS system and age-sex registers

• The current subsidies for under 13 year olds make nurse led clinics in eczema a feasible option
Setting up an eczema clinic

1. Compile an age sex register of all children enrolled in the practice with eczema
2. Inform general practice team
3. Identify a practice nurse who will organise and run the clinics who is up to date in eczema management
4. Do not charge a consultation fee
5. Develop a practice protocol (consistency of advice)
6. Utilise PMS systems for recalls so everyone is aware when children are due for a review
7. Always use a written eczema management plan that’s been discussed with parents
Resources & Online Seminars

https://www.pharmac.govt.nz/seminars/seminar-resources/eczema/
https://www.kidshealth.org.nz/eczema

Jess and Karen are willing to discuss this article with primary care practitioners. Telephone 09 267 8702 to contact them.
Questions?