Key management principles

1. Provide comprehensive education and support to the child's parents/caregivers
2. Advise frequent use of emollients in adequate quantities
3. Advise use of topical corticosteroids at the appropriate potency for the treatment of flares
4. Seek specialist paediatric or dermatological advice in children with severe or persistent eczema

Emollients, topical corticosteroids and avoidance of triggers are the mainstays of treatment for children with eczema. Under-use of topical treatment continues to be more of a concern than overuse. This highlights the importance of providing comprehensive education to the child's parents or caregivers and overcoming "corticosteroid phobia".

Eczema affects approximately 20% of children in New Zealand, with disproportionally higher rates among Māori and Pacific children.[1] Over 90% of cases of eczema develop in children before the age of five years and 60% of these cases occur in the first year of life.[2] Although many children experience remission of their eczema as they grow older, approximately 20 – 40% of those affected in childhood will continue to experience eczema as adults.[1]

Provide comprehensive education and support to the child's parents and caregivers

Advise families how to avoid triggers and irritants, such as washing new clothes before use, using mild washing detergents and using cotton fabrics as a base layer rather than wool or synthetics next to the skin.[3, 4] The role of food allergy in eczema is unclear. Food allergy is more likely to be a contributing factor in young infants with severe generalised eczema. Parents should be advised against putting their child on a very restrictive diet as this is often of limited benefit, and the diet can be expensive to maintain and result in nutritional deficiencies.

Warm (not hot) baths, are recommended for all children with eczema.[5] These should be once daily, lasting no longer than 10 – 15 minutes, and use wash-off emollients rather than soaps, detergents or bubble baths.

Twice weekly diluted bleach baths can reduce staphylococcal carriage and improve the child's symptoms: this can be prepared with 2 mL of plain bleach (2.2% sodium hypochlorite) per litre of water. A full-sized bath with a 10 cm depth of water holds approximately 80 litres of water, and will therefore require approximately 160 mL of 2.2% bleach. A baby's bath holds approximately 15 litres of water and will require approximately 30 mL of 2.2% bleach. Avoid contact between the bath water and the child's eyes.

A parent/caregiver information sheet on dilute bleach baths is available from: **www.starship.org.nz/media/269481/bleach_bath_handout.pdf**

For households that do not have a bath aqueous cream BP and emulsifying ointment BP (both subsidised) can also be used as wash-off emollients applied before the child enters the shower.

At the end of bathing, the child should be rinsed off with fresh water and patted dry with a towel, followed by application of emollients and topical corticosteroids.

The severity of the child's symptoms should guide treatment

For all patients, use emollients frequently and in large quantities:[3]

- Apply several times a day and continue even when the child's eczema has cleared
- Children should be prescribed **250 – 500 g of emollient per week** to provide sufficient product for moisturising, washing and bathing

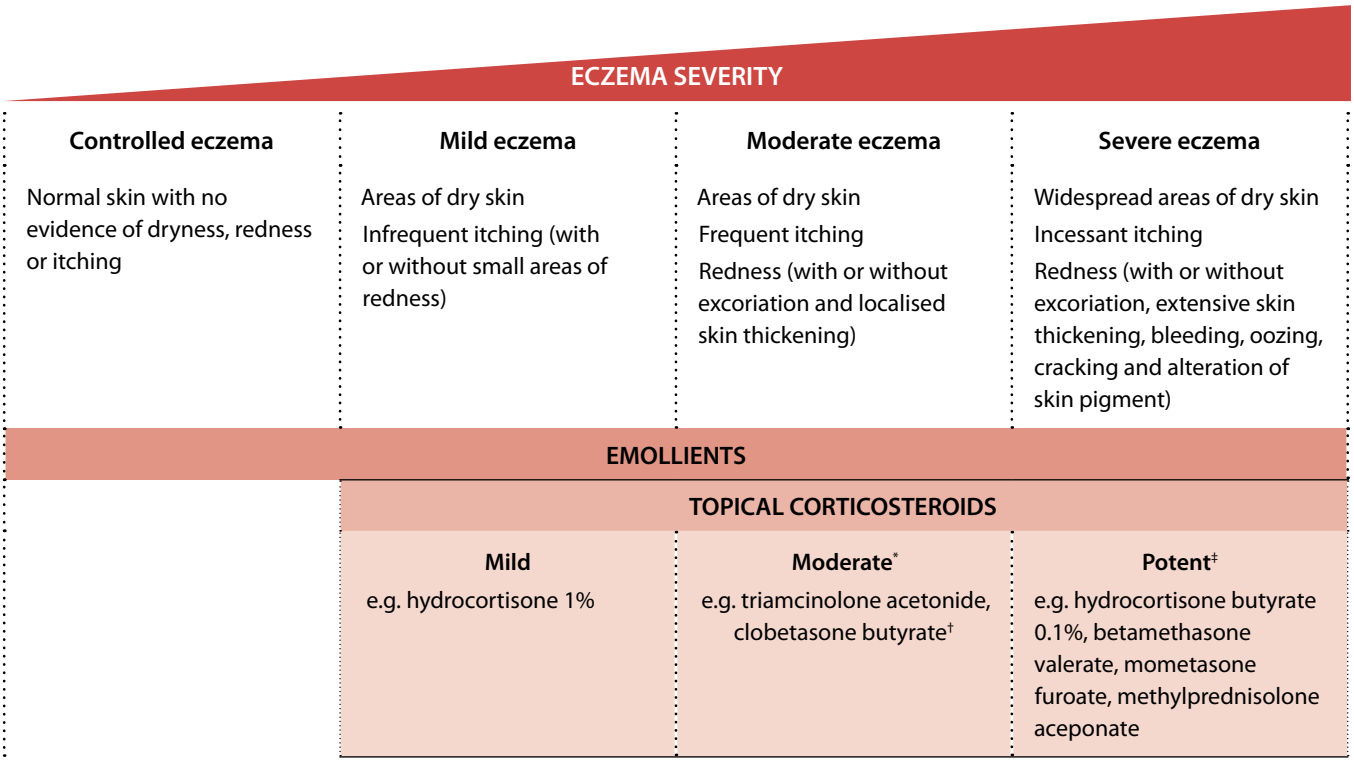
For the treatment of flares, use sufficient amounts of topical corticosteroids, once or twice daily:[3, 4]

- Once daily application is adequate in most cases (preferably after a bath)
- The potency of the corticosteroid prescribed should be matched to the severity of the child's eczema (Figure 1) and the area of the body affected (Figure 2)
- Treatment for flares should be started as soon as signs and symptoms appear and be continued for approximately 48 hours after symptoms subside

Best Practice Tip: Note on the prescription the specific area to which the cream needs to be applied as this will be put on the dispensing label by the pharmacy to prevent confusion

Parents often underutilise topical corticosteroids due to the fear of adverse effects. Clinicians can offer these points of guidance to parents to help overcome "corticosteroid phobia":[6, 7]

- Appropriate use does not result in skin atrophy
- The hyper- or hypo-pigmentation observed as the child's eczema clears is usually caused by the eczema not the corticosteroid; topical corticosteroids cause short-term vasoconstriction which may be mistaken as hypopigmentation
- The fingertip unit, i.e. the amount of product that will cover an adult index finger from the tip of the finger to the distal interphalangeal joint, can be used as a guide for the amount of corticosteroid to be applied (Figure 3). One fingertip unit is enough to treat an area of the child's eczema equal to the surface of two adult hands held side by side with the fingers together.



* Avoid use on face, neck, genitals or axillae for longer than seven to 14 days continuously

† Clobetasol butyrate (Eumovate – partly subsidised) is a moderate potency corticosteroid and should not be confused with clobetasol propionate (Dermol – fully subsidised) which is a very potent corticosteroid

‡ Avoid use on face, neck, genitals or axillae. Avoid use in children aged one year and under unless prescribed under dermatologist supervision

Figure 1: Eczema management algorithm (adapted from NICE, 2007).[3, 9] Note that the choice of topical corticosteroid also varies in relation to the area of body needing treatment and age of the child (see Figure 2).

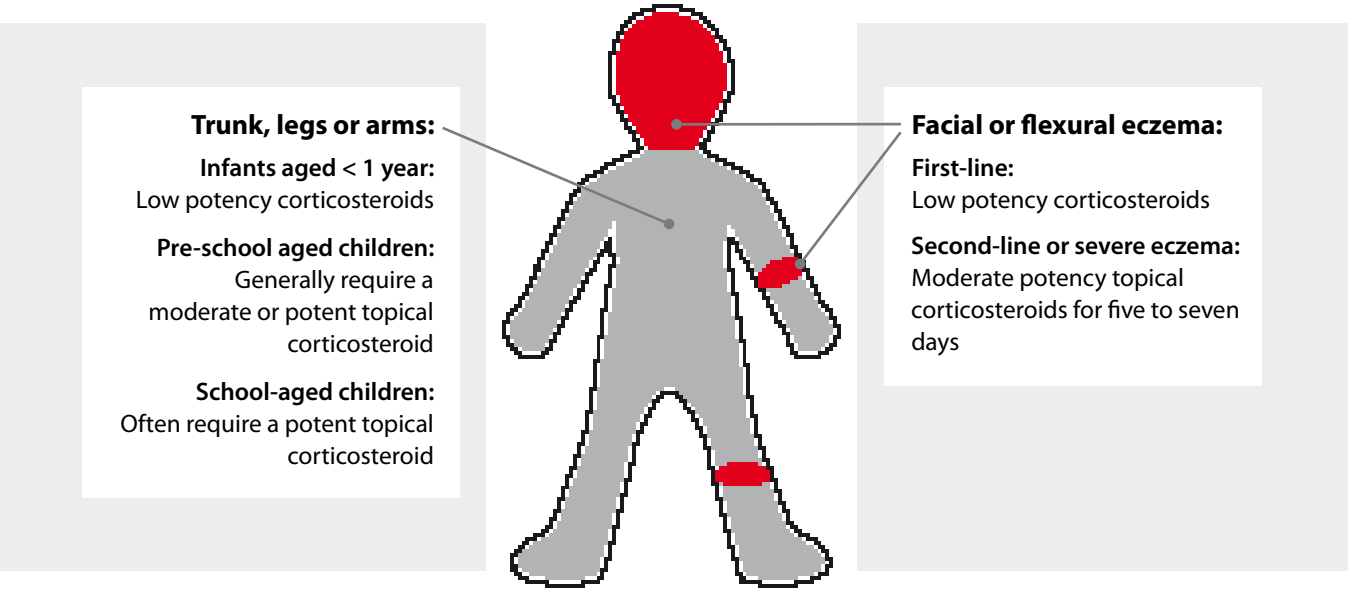


Figure 2: Useful rules of thumb to guide topical corticosteroid prescribing according to the area affected[4]

Pimecrolimus cream 1% (unsubsidised) is a calcineurin inhibitor that can be used in children aged three months or older as a second-line treatment when topical corticosteroids are unable to be used or have been ineffective despite optimal use.[3]

Antibiotics for secondary infection: Prescribing topical antibiotics, e.g. fusidic acid, for children with small localised lesions of infected eczema is now generally not recommended due to the high rates of resistance to fusidic acid in the community. The first-line recommended treatment regimen for children with infected eczema is an oral antibiotic:[8]

- Flucloxacillin 12.5 mg/kg, three times daily, for seven to ten days (maximum 500 mg/dose)
- If compliance with flucloxacillin is a problem, cephalexin 12.5 – 25 mg/kg, twice daily, for seven to ten days (maximum 500 mg/dose) may be used

Seek further advice for children with severe or persistent eczema: Referral pathways will vary according to the local services available; contact your DHB.

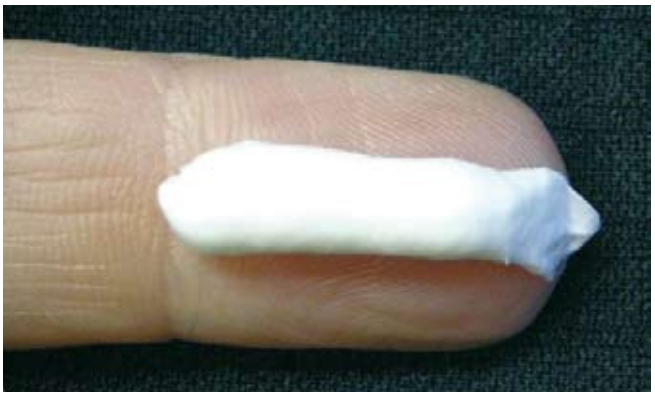


Figure 3: Fingertip unit (Image provided by Dermnet NZ)

For further information, see: "Treating childhood eczema – a topical solution for a topical problem", BPJ 67 (Apr, 2015).

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When is an allergy to an antibiotic really an allergy?

When a patient has an uncertain history of antibiotic allergy consider the following:

1. Is it more likely that they experienced an allergic reaction, a delayed immune reaction, an adverse effect or an intolerance (Table 1)?
2. Could their symptoms have been caused by another factor, e.g. the illness or another medicine?
3. Have they tolerated the same antibiotic since the initial event?

Antibiotic allergy most commonly occurs in people aged 20 – 49 years. Penicillin is the most frequent antibiotic class allergy, followed by sulfonamides and tetracylines. Parenteral administration of antibiotics is associated with a higher risk of allergic reaction than oral administration. Allergic reactions can occur after a single or multiple exposures, therefore prior tolerance of an antibiotic does not exclude an allergy.

If a patient has a convincing history of an allergic reaction to an antibiotic, there is no need for laboratory investigation; confirmation of the allergy would not change management. Testing for antibiotic allergies is theoretically possible, but it is not available for all antibiotics in New Zealand and the results can be difficult to interpret.

A clinically significant IgE-mediated allergic reaction to an antibiotic, e.g. urticarial rash, is likely, but not inevitable, to reoccur on re-exposure and in some cases this will be more severe, e.g. anaphylaxis. Deliberate re-exposure to the same antibiotic is not recommended unless there are no alternative options and the patient is supervised in hospital. If a patient has a history of intolerance or adverse effects the severity of the previous event and the likely benefit of treatment should be considered before prescribing the antibiotic again. If the patient has a history of a delayed hypersensitivity reaction re-challenge may be possible, depending on the nature of the reaction. People with an allergy to one antibiotic can react to structurally similar antibiotics, e.g. sensitivity to cephalosporins in patients allergic to penicillin, but this is rare.

For further information, see: "When is an allergy to an antibiotic really an allergy", BPJ 68 (Jun, 2015).

Table 1: Typical features of an allergy, delayed immune reaction, adverse effect or intolerance to antibiotics

Allergy	Delayed immune reactions	Adverse effect	Intolerance
An immunological reaction (IgE-mediated) that is usually rapid in onset (e.g. within one to two hours) and may include: ■ Urticaria ■ Angioedema ■ Bronchospasm ■ Anaphylaxis These reactions usually reoccur with subsequent exposure to the antibiotic and may attenuate over time or persist for a lifetime.	May occur several days after exposure (usually IgG-mediated). More often seen in patients with intercurrent infections, e.g. Epstein-Barr virus. Macular, papular or morbilliform rash are common examples. Usually does not occur upon subsequent exposure to the antibiotic when the patient is well. N.B. rash caused by viral infection can often be mistaken for an allergic reaction to antibiotics	A predictable reaction to an antibiotic, e.g. diarrhoea, nausea and vomiting following treatment with amoxicillin	A sensitivity reaction that does not involve the immune system. Dependent on patient susceptibility and pharmacology of the medicine. May be an exaggerated adverse effect or an adverse effect not normally associated with the antibiotic, e.g. tinnitus following treatment with amoxicillin.