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ECZEMA – SAFE PRESCRIBING - A TOPICAL ISSUE

- USE SOAP SUBSTITUTES
- EMOLLIENTS ARE ESSENTIAL
- USE CORTICOSTEROIDS APPROPRIATELY
- IDENTIFY AND MANAGE UNDERLYING TRIGGERS IF POSSIBLE
- REFER IF NECESSARY

Eczema is a chronic relapsing itchy inflammation of the skin affecting approximately 20% of New Zealand children[1] and has disproportionally higher rates among Maori and Pacific children.[2] Onset can be at any age, but is most common before the age of 5 years. Often there is a family history of eczema, asthma or hayfever.[3]

Skin with eczema has altered integrity and an increased risk of infection with bacteria (eg staphylococcus and streptococcus) and viruses (eg herpes and molluscum). Genetic abnormalities in the skin barrier proteins have recently been identified in patients with eczema, suggesting that abnormal skin barrier function is a key determinant of eczema.[4,5]

General management principles include: daily moisturising, appropriate use of topical steroids, avoidance of possible irritants, and education about signs of infection to ensure prompt treatment. The under-use of topical treatment is more of a concern than overuse;[1] it is important that this is emphasised to parents and caregivers.[1] Most children with eczema can be managed with topical treatment in primary care[1], potentially avoiding complications such as infections and cellulitis that may require admission to secondary care and lead to significant morbidity and costs for children and their families.[2]

USE SOAP SUBSTITUTES

Soaps can be drying and irritating to the skin, so 'soap-free' washes should be used.[6] Funded options include aqueous cream and emulsifying ointment which can be applied before the bath and then washed off. (People may find non-funded options easier to use). Lukewarm baths of 10-20 minutes are best;[5,7] avoid very hot water which can cause pruritus via vasodilation, and potentially damage the skin barrier by scalding. Small amounts of bath oils may be used to increase hydration. Take care with younger children; bath oils can make the bath very slippery.[5]

To reduce staphylococcal colonisation and reduce eczema severity, antiseptic baths can be used 2-3 times per week. These baths can be prepared by adding 2ml of bleach (2.2% hypochlorite Budget Household Bleach, not Janola®) to 1 Litre of bathwater – approximately 150ml of bleach to a 10cm-deep full-sized bath.[6,8] Ideally the child should stay in the bath for 5-10 minutes and then rinse with fresh water.[9] Antiseptic baths should not be used if there are extensive areas of broken skin. Children should be supervised to avoid ingestion of bath water.[9] Antiseptic bath oils are available but these are not subsidised.[7]

EMOLLIENTS ARE ESSENTIAL

Emollients are the mainstay of therapy but are often underused; they should be applied even when eczema is well controlled.[7] Ideally they should be applied several times a day because their effects are short-lived.[10] Adequate skin hydration preserves the stratum corneum barrier, minimising the effects of irritants and allergens and maximising topically applied therapies. This will potentially decrease the need for topical steroids.[6]

After bathing, lightly pat the skin with a towel to remove excess moisture, rather than complete drying. Then liberally apply an occlusive emollient over the entire skin surface to retain moisture in the epidermis. Smooth in the direction of hair growth. It is recommended to apply this within 3 minutes of leaving the bath to avoid evaporation which may cause excess drying of the skin.[5]

NICE guidelines endorse the provision of large quantities of emollients to children with eczema, and recommend prescribing 250-500g each week to encourage sufficient supply for daily moisturising, bathing and washing.[11] Ointments are preferred for dry skin, creams for flexures, face and exudative skin, and lotions are useful over hairy areas. Products within tubs should be removed with a clean spoon or spatula to reduce bacterial contamination.[10]

Ideally emollients should be hydrophobic and ointment-based, but they are very greasy and may be too occlusive in hot summer months. Cream-based alternatives may be used (eg cetomacrogol cream), although they are slightly less effective.

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Oily creams such as HealthE® fatty cream are in between ointments and creams and usually acceptable.[4]

Note: Regular aqueous cream and emulsifying ointment contain sodium lauryl sulphate which can cause irritation and damage to the skin barrier in some people.[12,13] Regular aqueous cream is no longer recommended as a leave-on emollient, however, SLS-free aqueous cream is not suppposed to have the same problems with irritation.

Table 1 - Emollients

SUBSIDISED EMOLLIENTS	PARTIALLY SUBSIDISED EMOLLIENTS*
• Sorbolene with glycerine cream (Pharmacy Health) • Fatty cream (HealthE®) • Cetomacrogol cream (PSM) • Emulsifying ointment	• Hydroderm® lotion • DP® lotion

*This is not an exhaustive list; please refer to the on-line PHARMAC schedule for the most up-to-date information.

USE CORTICOSTEROIDS APPROPRIATELY

Most parents worry about steroid-related adverse effects. Reassure them that when used appropriately, with potency of the topical steroids tailored to the skin thickness, that the benefit will outweigh the harm. Topical corticosteroids reduce inflammation and pruritus during acute exacerbations.[14] The absorption of topical steroids is increased through hydrated skin and the benefits are optimal if applied soon after bathing. It is recommended to apply them first for maximum absorption, then an emollient 30 minutes later, if practical.[7] The most occlusive preparations are ointments which are best for very dry skins, followed by gels, creams and lotions.[5] Systemic steroids are not recommended for the treatment of eczema.

Facial and flexural eczema should be treated with a low-potency topical steroid in all age groups. Moderate-potency topical steroids can be used as a second line treatment for short periods of less than 2 weeks.

For eczema on the body (trunk, arms and legs), infants under 1 year can usually be managed with a low or occasionally moderate-potency topical steroid. Pre-schoolers may require a moderate or potent topical steroid and school age children usually require a potent topical steroid. An effective topical steroid will typically result in improvement within 1-2 weeks, allowing the steroid to be used less frequently or stopped.[14]

In general, short bursts of more potent topical steroids are more effective and have fewer adverse effects than long-term continuous use of lower potency agents.[7] Once daily dosing of topical corticosteroids may be as effective as twice daily and is often more convenient.[15] Advise to apply to all areas with active eczema; it is best to apply early rather than waiting for the eczema to get worse. When the eczema is no longer red and itchy, the steroid cream may be stopped, but continue with emollients. Restart steroids whenever the eczema returns.[8]

If there is no benefit within 1-2 weeks, investigate the possibility of poor adherence, the need for a more potent topical steroid or that eczema is not the correct diagnosis. Bacterial infection or contact allergy could be the cause. Consider referral to a dermatologist if there is recurrent treatment failure.

Table 2 - Topical corticosteroids

POTENCY	SUBSIDISED EXAMPLES
Mild	
Hydrocortisone 1%	Hydrocortisone BP cream (Pharmacy Health)
Moderate (25x hydrocortisone 1%)	
Triamcinolone acetonide (0.02%)	Aristocort cream®/ointment
Potent (50-100x hydrocortisone 1%)	
Betamethasone valerate (0.1%)	Beta cream®/ointment/application Betnovate lotion® Diprosone cream®/ointment
Hydrocortisone 17-butyrate (0.1%)	Locoid lipocream®/ointment/ lotion/Crelo® (milky emulsion)
Mometasone furoate (0.1%)	Elocon cream®/lotion/ointment m-Mometasone cream®/ointment
Methylprednisolone aceponate (0.1%)	Advantan cream®/ointment

Table adapted from Oakley A. BPJ 2009;23:9-13

Note: Very potent steroids such as Dermol® (clobetasol propionate 0.05%) should not be used for childhood eczema.

Make sure adequate amounts of topical steroid are used; suboptimal use early on can lead to poor control of symptoms and potentially discontinuation or non-compliance.[16] Use the fingertip unit (FTU) to measure the amount of medication. One FTU is the amount of cream that will cover an adult index finger from the tip to the metacarpophalangeal joint; it is approximately 0.5g.[14]

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Table 3 - Approximate number of adult FTUs needed for children

	6 months old	12 months old	5 years old	10 years old
Arm & Hand	1	1.5	2	2.5
Leg & Foot	1.5	2	3	4.5
Trunk	1.5	2	3	3.5

*Table adapted from Long CC et al. Br J Dermatol 1998; 138:293-63

Table 4 provides approximate weights of steroid cream required for a once daily application to cover the entire body.[17] More detailed information about this and FTU requirements are available on The New Zealand Formulary for Children website: www.nzfchildren.org.nz/nzf_6228

Table 4 - Approximate weight required of topical corticosteroids

Topical Steroid	6 months old	12 months old	5 years old	10 years old
Daily (g)	5	6	10	15
Weekly (g)	35	40	70	100

*Table adapted from Long CC et al. Br J Dermatol 1998; 138:293-63

Always give instruction on which areas to avoid (eg the face). Encourage the continued use of emollients during acute flares.[14]

Note: A useful patient guide developed by the Paediatric Society of New Zealand is available **here** or via www.starship.org.nz

IDENTIFY UNDERLYING TRIGGERS IF POSSIBLE

To reduce the frequency and severity of irritant-induced flares, avoid any likely irritants that may trigger the itch-scratch-itch cycle (eg soaps, detergents, chemicals, abrasive clothing and extremes of temperature).[5] The following advice may help:

- Wash new clothes before use to remove formaldehyde and other chemicals
- Use mild liquid detergents (rather than powders) and a second rinse cycle to remove residual detergent
- Shower after swimming in chlorinated pools and apply emollients
- Dress children in loose cotton clothing, avoiding wool and synthetics next to the skin if possible
- Always choose fragrance-free hypoallergenic products for "sensitive skin"
- Avoid topical products containing alcohol or other astringents

Frequent follow-up is needed early in the course to assess response to therapy and compliance. Be mindful that infection or contact dermatitis to a medication, such as preservatives in steroid preparations, could be a contributing factor.[5]

REFER IF NECESSARY

If the condition is severe, involves eyelids/hands or is refractory to first-line treatments, consider further assessment by either a nurse specialist or paediatrician, or consultation with a dermatologist.[6] The following conditions should be referred:

- Erythroderma or extensive exfoliation
- Serious infectious complications eg eczema herpeticum, and recurrent infective exacerbations
- Ocular complications
- Eczema requiring hospitalization or systemic immunosuppressants
- Eczema causing persistent loss of sleep, school absenteeism or inability to enjoy activities
- Eczema causing significant psychosocial impact
- Eczema requiring persistent topical steroids with risk of localised cutaneous effects eg striae
- Uncertain diagnosis

Eczema has multiple triggers and it is not usually possible to identify and exclude them all. Anaphylactic (immediate hypersensitivity) reactions to food proteins can occur in children with eczema - especially in children with early-onset (before 6 months) generalised eczema. These should be managed in the same way as for children without eczema. Be aware skin-prick testing and RAST (radioallergosorbent) testing can have high rates of false positives for eczema; results need to be interpreted with caution. Although parents often report food triggers for eczema, current evidence doesn't support food exclusion for eczema management. Excluding food carries a risk of nutritional deficiency and loss of immune tolerance. Referral for assessment by a paediatrician, paediatric immunologist or dermatologist should be considered if food is thought to be a significant trigger. Keep in mind that many children 'outgrow' eczema, but for 20-40% of them it can continue into adulthood.[1,2]

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