Sláinte Leanaí Éireann
Children's Health Ireland

GUIDELINES ON THE NURSING MANAGEMENT OF ATOPIC DERMATITIS (ECZEMA)	
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1.0 Introduction

Atopic Dermatitis (eczema) is a common, chronic non-contagious inflammatory skin condition. It often occurs in families with one or more atopic diseases such as asthma, food allergy and allergic rhinitis (Wollenberg 2018). It is a complex condition linked with multiple genetic and environmental causes.

- It affects 1 in 5 children. (20% UK /Ireland, 10% US)
- It causes red, itchy skin which can be localised or generalised.
- There is no cure, some children do grow out of it (approx. 2/3), however it can be carried into adulthood.
- A family history may be present
  (McAleer et.al 2012)

Appropriate education is necessary to identify the condition and treat the symptoms. It is important to recognise the impact on children and their families. (Watkins 2013)

2.0 Background

The filaggrin gene (FLG) plays a key role in the epidermal barrier function. This helps to understand the genetics of this common disorder. (Lawton 2014). Changes in filaggrin (a protein in the epidermal cells) have been linked to the possible cause of severe eczema due to a potential increase in trans epidermal water loss, pH alterations and dehydration (Kim et al 2019).

There are many factors involved in the development of atopic eczema including skin barrier abnormalities, defects in the immune response, and altered skin microbial flora. (Kuo et al 2013, Boguniewicz et al 2011)). The defect in the natural immune epidermal barrier repair process causes alteration in skin microbe and leads to severe inflammation (Kim et al 2019).

3.0 Factors that may trigger eczema include *(NICE 2021)*

- Animal hair
- Perfumed products
- Biological washing powder
- Woollen clothing
- House dust mite
- Grass/tree pollen
- Teething (infant)
- Systemic infection
- Infection on the skin
- Eczema Herpeticum (cold sore virus)

4.0 Complications

- Can be mild, moderate or severe.
- Eczema is prone to flares
- Chronic eczema can impact on normal growth
- Loss of sleep.
- Financial burden of cost of treatment
- Poor self-esteem.

- Chronic itch.
- Impact on quality of life for family and child
- Psychological impact.
- Negative impact on schooling resulting in missed days
- Secondary infection with herpes simplex virus / staphylococcus
- Financial burden of cost of treatment

5.0 Management

- Emollient baths
- Topical emollients
- Topical steroids
- Calcineurin inhibitors (tacrolimus)
- Antihistamines
- Occlusive therapy
- Ultraviolet light
- Systemic drugs in severe cases
- Biologic Drugs

6.0 Aims of the Treatment

- To improve skin integrity
- Replace moisture loss in skin
- To provide a waterproof barrier preventing further moisture loss
- To reduce inflammation and relieve the itch/scratch cycle
- To treat infection
- To improve the quality of life for the child and family

7.0 Bathing

Daily emollient baths are essential and effective in the management of eczema (McAleer et al. 2012, NICE 2021). They help to cleanse the skin, prevent infection by removing scale and crusts. Baths also hydrate skin by re-introducing moisture.

8.0 Topical Steroids

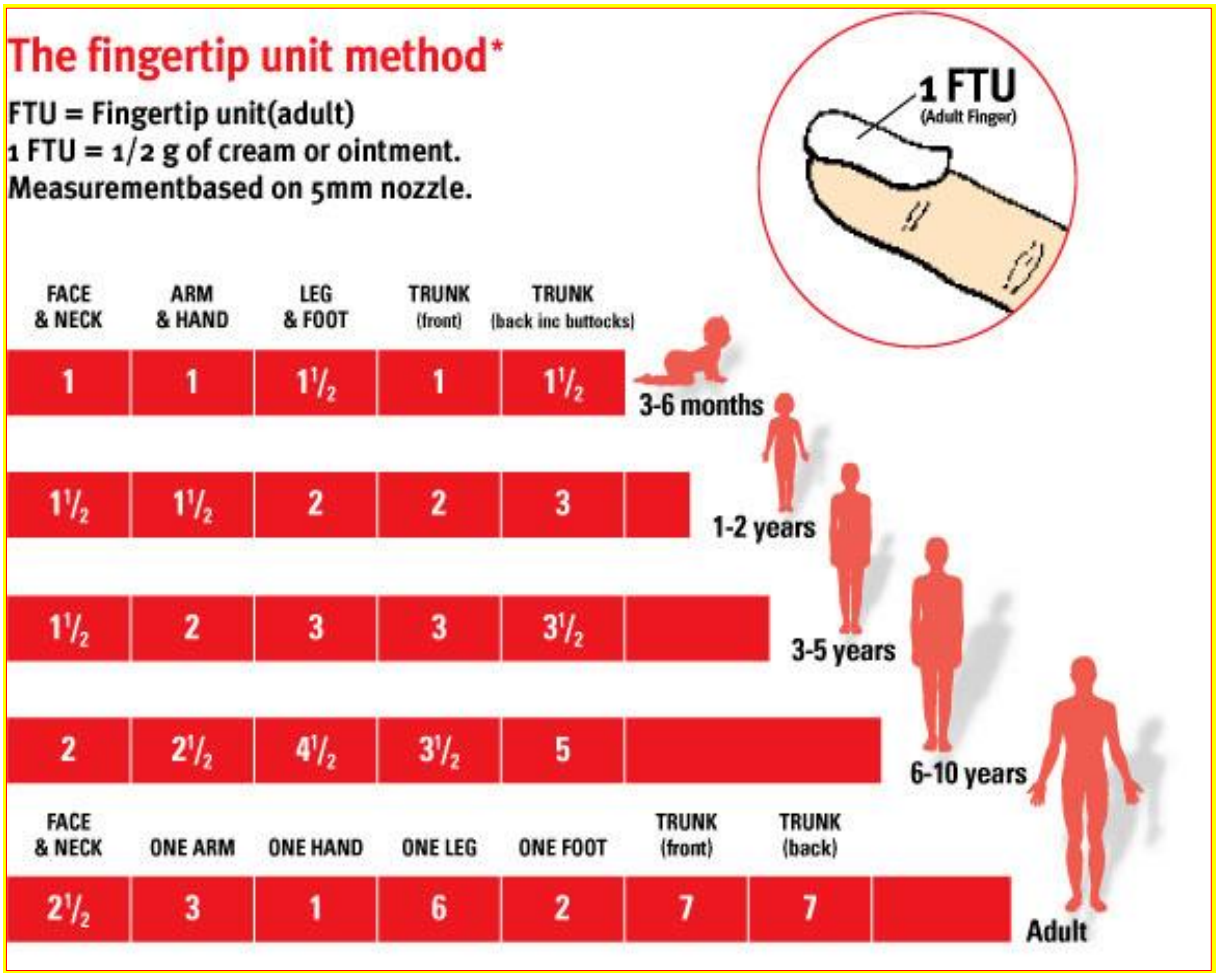
Topical steroids reduce skin inflammation and pruritus, by constricting the blood vessels and restricting fluid loss into the tissues (Harper et al 2011). Effective topical therapy depends on three functional principles: sufficient strength, sufficient dosage and correct application (Wollenberg et al 2018).

There are four strengths of topical steroid:

Potency	Topical Steroid	Topical Antibiotic+ Fungal
Mild	Hydrocortisone 1%®	FucidinH® (antibiotic/steroid) Daktacort® (antifungal/steroid)
Moderate	Eumovate® Modrasone® Betnovate RD®	
Potent	Betnovate® Elocon® Locoid®	Fucibet® (antibiotic/steroid) Travocort® (antifungal/steroid)
Very Potent	Dermovate®	

Steroids should be applied as prescribed to appropriate body part. Ensure they are applied in a glossy/shiny layer on the skin**.**

A rough Guide of how to apply steroids is the fingertip unit guide (Finlay 2012)



9.0 Emollients / Moisturisers

The terms 'emollient and 'moisturiser' are interchangeable. (Penzer 2012). Emollients are the cornerstone of eczema care to promote the repair of the skin barrier (Eichenfield et al 2014). Their main function is to moisturise skin but some products can also function as a bath additive and soap substitute. Patients with eczema need to avoid soap or fragranced bath products as they may trigger already compromised skin (Eichenfield et al 2014). With eczema the skin is dry therefore increasing the risk of infection, water loss from the skin and can also allow allergens to cross the skin barrier.

Emollient products come in many forms including creams, ointments, lotions or gels. Ointments are recommended for very dry/scaly skin. These products are very greasy and will stay on the skin for longer periods. Creams and lotions are less greasy and can be more cosmetically acceptable and are suited to milder eczema,

The recommended amount of emollient that should be used is 250-500 grams per week. (NICE 2021)

10.0 Calcineurin Inhibitors: Tacrolimus (Protopic®)

Can be used as an alternative to topical steroids for the treatment of mild to moderate atopic dermatitis involving the face including the eyelids, neck and skin folds. This treatment blocks the production and release of inflammatory cytokines (McAleer et.al 2012). They are not used if the skin is infected. Emollients are recommended to be applied 2 hours either side of its application. It can cause some stinging initially and it is recommended that it is applied at night because there is an increased risk of sunburn if exposed to sunlight. It comes in two strengths, Protopic® 0.03% and 0.1%.

11.0 Occlusion / Bandaging Therapy

Occlusive therapy can be achieved by using paste bandages which are impregnated with zinc oxide and ichthammol which softens excoriated and lichenified (thickened) skin and help reduce itch therefore helping skin healing. (Flavell 2015).

Potent steroids should only be used under occlusion when prescribed by a Dermatologist. Occlusion can increase the permeability of steroid absorption (Harper *et al* 2011).

Wet wraps are also a form of occlusive therapy found to be effective in the management of chronic eczema. (See wet wrap guideline)

12.0 Systemic Treatment

Systemic immunosuppressive agents are recommended for patients with moderate to severe eczema in whom disease activity cannot be controlled with topical treatments (Mc Aleer et al. 2012).

ACTION	RATIONALE & REFERENCE
Assess the child, the extent of the eczema and affected areas. Document care given and evaluate effectiveness of treatment provided. Explain what treatment involves to the child and parents/guardian.	To facilitate communication, to provide evidence of delivery of quality care, and to ensure evaluation of the effectiveness of care provided (CHI 2020b, NMBI 2015). To help reduce anxiety of child and parents, by appropriately informing them of treatment (NICE 2021)
Ensure privacy for the child throughout the treatment.	To maintain dignity of patient when care is being attended to (CHI 2020a)
Infection Infection may be bacterial, fungal or viral. If infection is suspected both viral and bacterial swabs should be taken.	
Signs of infection may include increased exudate with yellow crust, inflammation and pain or raised temperature (NICE 2021)	To identify and treat infection on the skin (Eichenfield et al 2014, NICE 2021)
Antibiotics may be required if the skin is infected. Administer antibiotics, topically, orally or intravenously as prescribed.	
Baths	
A daily emollient bath for 5-7 minutes in tepid water is recommended.	Avoid prolonged baths to prevent skin dehydration (Wollenberg 2018)
The emollient product for the bath can be an ointment or an oil as recommended by the dermatology team	An emollient bath removes dead skin cells, moisturises and relieves the itch and prepares the skin for topical therapy A tepid bath is recommended to prevent skin dehydration (Eichenfield et al 2014)
• Preparing Emulsifying Ointment® / Silcock's Base® Bath: Place 2 tablespoons of Emulsifying Ointment® / Silcocks Base® into a jug. Add hot water and whisk to a creamy froth. Add to bath under running tap water and mix well.	Normal soap is too drying and can irritate the skin (Harper et al. 2011).
• Emollient oils are also an effective bath additive	Products used should be fragrance free to avoid skin irritation. (NICE 2021)

• Emulsifying Ointment® or Silcock's Base® can be used in the bath as a soap substitute and applied to cloth. • Non-perfumed products are recommended for hair and body wash. Ensure bath mat is used and hold/infant child carefully for duration of bath	Bathing with an emollient can cause the bath to be slippy, so care is taken to prevent child from slipping (BDNG 2012) To prevent and treat infection on the skin (Eichenfield et al 2014, Flavell 2015)
Milton® Baths Administer sodium hypochlorite (bleach) baths twice weekly if prescribed for infected eczema 1 capful of capful of Milton® is 30mls - Adjust accordingly on type of bath used. Only 5 minutes is recommended • 125mls Milton® 2% in 100 litres of water (1/2 bath) • 62mls Milton® 2% in 50 litres (1/4 bath) • 17mls Milton® 2% in 14 litres (1/2 baby bath) • To make up Milton® soaks 1ml of H2O to 1,000mls of water. Wet gauze and soak area for up to 5 minutes	Dilute sodium hypochlorite baths are helpful in decreasing infection rates and disease severity. (Chong et al. 2016)
Topical Corticosteroids: Apply as prescribed by the Dermatology team. The topical corticosteroid should be applied immediately after a bath where possible. Apply steroids as prescribed. Apply enough ointment so that skin is glossy/shiny. Refer to FTU in introduction as a guide. Allow steroids to dry 20-30 minutes pre emollient application	Skin pores are open and receptive to treatment. (Mc Aleer et al 2012) To allow treatments be effective on the skin. (NICE 2021)
Health Care Professionals should wear gloves when applying steroids as per local standard precautions Wash hands pre and post skin care.	Universal standard precautions should be used on broken skin (CHI 2019a)
Emollients Apply as prescribed by the Dermatology Team.	Emollients are the cornerstone of eczema care. They prevent water loss from the skin, increase hydration, reduce itch and redness, and help to repair the skin barrier. (Eichenfield et al 2014)

Ointments rather than cream moisturisers are generally more effective.	The heavier the emollients, the more water is trapped which improves the rate of skin repair (Penzer 2012) Ointments contain higher concentrations of lipids. (McAleer et al. 2012).
Use a clean spoon or spatula to decant the moisturiser from the tub.	To avoid emollient contamination from the skin (BDNG 2012)
Apply in smooth downward strokes in the direction of hair growth.	This avoids potential plugging of the follicles that could lead to infection called folliculitis (BDNG 2012)
Other Medications	
Other medications that may be required include antihistamines and analgesia.	Sedating antihistamines may be used for short term use to support sleep patterns (NICE 2021)
Analgesia may be required if the skin is infected or prior to a bath when skin is excoriated. Pain may be assessed using a validated age appropriate pain assessment scale, and appropriate analgesia administered.	To keep the child as comfortable as possible and allow skin care to be carried out. (CHI 2019b)
Medications are administered as prescribed.	To ensure safe administration of medications NMBI (2020), OLCHC (2017)
Document care given and evaluate effectiveness of treatment provided.	To facilitate communication, to provide evidence of delivery of quality care, and to ensure evaluation of the effectiveness of care provided (CHI 2020b, NMBI 2020)

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