Managing eczema

In this article...

- An outline of the different types of eczema
- The main treatment options
- How nurses can support patients in self-care

5 key points

1. One in five children under one year old are diagnosed with atopic eczema
2. Infantile eczema can resolve spontaneously but may progress to a chronic pattern of episodic exacerbations
3. Eczema can have physical and emotional consequences
4. The entire skin should be examined to ensure enough topical medication is prescribed
5. Agents that moisturise and lubricate the skin are the mainstay of dermatological treatment

Eczema accounts for up to a fifth of all GP dermatology consultations and in 2001-2002 generated more than 60,000 GP referrals to acute care (NHS Modernisation Agency, 2003). Demographic changes in the UK also mean an increasing proportion of people will suffer the consequences of skin problems in older age. Although the condition in its varying forms can occur at any age, it is generally associated with children. Atopic eczema affects at least 10% of infants at some stage (British Association of Dermatologists, 2009).

The word “eczema” comes from the ancient Greek “to boil out of” and is associated with a range of inflammatory skin disorders. The full aetiology of eczema is unknown but recent research indicates there is reduced protein, called filaggrin, within the natural moisturising factor, which leads to a breakdown of the epidermal barrier. The classifications of eczematous skin disorders use the term “eczema” synonymously with “dermatitis”, as both terms apply to the inflammatory skin changes provoked by either internal (endogenous) or external (exogenous) factors.

The Dermatology Workforce Group (2007) acknowledged the burden of carrying out skin care falls on patients, carers and families. Nurses have a vital role in supporting patients and families by providing information about the condition, and explaining the correct technique for applying topical medication as well as potential triggers that might cause flare-ups. It is also crucial to remember patients have to “wear” their treatment creams so smell, feel and any potential staining are all important to them. Box 1 outlines factors that affect patient concordance.

Examining patients

Eczema can have both physical and emotional consequences. Nurses should observe patients’ overall appearance, including their bearing, posture and dress, as these may indicate unhappiness, loss of self-esteem, anger or embarrassment (Peters and Turnbull, 2003).

Explaining to children/patients or family carers the need to examine the skin during the consultation will help to overcome anxiety, embarrassment or religious or cultural differences. Practitioners should note the distribution and clinical presentation of the rash, comparing

Box 1. Factors that influence patient concordance

- Does the topical medication smell?
- Texture and consistency – how easy is it to apply?
- Does it make the skin too shiny?
- Does it make clothes greasy?
- Consider packaging – tubes and pumps are popular
- Can it be used as a soap substitute?
- Is it so greasy that it spoils school work?
- Does it sting?
- How easily can more be obtained?
- How much should be prescribed?
unaffected skin with that which is affected. Describing what you see on each visit will enable you to record progress, such as erythema, excoriations, scaling/dryness of skin and the areas of the skin involved.

To ensure enough topical medication is prescribed, the entire skin should be examined, otherwise the condition could be undertreated – it is not enough to roll up a trouser leg or sleeve. Prescribers need to estimate how much per application patients will use, and consider for how long. The British National Formulary provides guidance (British Medical Association and the Royal Pharmaceutical Society, 2011).

**Pathophysiology**

The skin generally becomes drier to the touch as eczema develops, and redness and swelling occurs; this is caused by increased vasodilation and generalised oedema of the skin. The erythema may be generalised over the body or limited to localised areas. It can be exacerbated by scratching and extend to an exudative, scaling and crusting phase. Blistering can occur as part of the inflammatory process.

In chronic eczema involving recurrent exacerbations, the skin is scaly, excoriated, thickened and pigmented. The eczematous areas will be localised to more defined parts of the body and lichenification is apparent. Lichenification (Fig 1) is a skin response to mechanical damage (rubbing/scratching) in which the affected areas become thickened, toughened and show a significant exaggeration of normal skin markings. Fissuring of the skin occurs as the skin loses its elasticity; these are painful, like paper cuts.

**Endogenous eczema/atopic eczema**

Atopic eczema (Fig 2) is a common inflammatory skin disorder affecting at least 10% of infants at some stage; there are associated genetic and environmental factors (BAD, 2009). The word “atopy” covers the classification of related disorders, for example, asthma, eczema and hay fever.

Atopic eczema – the diagnostic criteria for which are outlined in Box 2 – can be a chronic, itchy and distressing disorder, having a major impact on children’s behaviour and quality of life, as well as causing severe disruption to family life.

Infantile eczema can resolve spontaneously but sometimes progresses to a chronic pattern of episodic exacerbations. Some 20% of children under one year old are diagnosed with infantile eczema (Schofield et al, 2011). Commonly affected sites are the flexural aspects of knees and elbows, with face and wrists also involved. The pattern of distribution can alter into adulthood and late onset (aged over 4 years) can be extremely distressing.

The prevalence of atopic eczema continues to rise and, although this has been linked to increasing affluence in the UK population, it remains unclear how the two factors are related (Hay and Rustin, 2004).

The following five conditions are other forms of eczema:

- **Pompholyx eczema** or “blistering” eczema is localised to palms and soles. It develops rapidly, causes acute discomfort and can become secondarily infected. The cause is unknown and outbreaks can be linked to heat/humidity or reaction of contact dermatitis or fungal infections.

- **Discoid eczema** is characterised by symmetrical coin-shaped lesions that affect the limbs and can be intensely itchy. There are two types – wet and dry. It is more common in older people and those who are middle aged, and may only last for a few weeks.

- **Asteatotic eczema** mainly affects older people, commonly on the lower legs. It appears to be associated with a deficiency of sebaceous secreting glands, resulting in excessive dryness and scaling of the skin. Central heating, diuretic therapy and over-frequent washing are also possible causes. The stratum corneum develops a “crazy paving” appearance due to a network of fine red superficial fissures.

- **Varicose eczema** is chronic patchy eczema of the legs, with or without the presence of a varicose ulcer. It arises due to associated chronic venous stasis; this commonly consists of the presence of varicose veins, oedema and pigmentation of the skin. Pigmentation occurs due to haemosiderin from the blood leaking through capillary vessels under elevated venous pressure (Gawkrodger, 2008). The area involved may become itchy and hot to touch; a secondary response to this initial area of eczema may produce associated eczematous areas on other parts of the body.

- **Seborrhoeic dermatitis** is a chronic condition that can also occur in childhood as “cradle cap”. An inflammatory response to the yeast Malassezia, this condition causes ill-defined dry pink or skin-colour patches with a yellowish scale on the surface. It can affect the scalp or eyebrows with patches on the face (butterfly appearance), body and skin folds.

**Exogenous eczema**

**Irritant contact dermatitis**

This type of eczema is extremely common, especially in industrial/work settings. It usually erupts at the maximum point of contact, but presentation varies according to the nature of the irritant contact. The

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**FIGS 1, 2 AND 3**

*Fig 1. Lichenification results from rubbing or scratching (left); Fig 2. Atopic eczema affects at least 10% of infants (middle); Fig 3. Treatments should be applied in the direction of hair growth*
epidermis may be damaged by water or abrasion, and the effect of the irritant, such as coal dust or cement, is exacerbated by rubbing against clothing. Epidermal necrosis may occur within hours of contact with strong chemicals, while eczema triggered by milder substances, such as detergents, may take longer to develop.

Many patients with atopic eczema appear prone to irritant contact dermatitis and should be advised to avoid work where exposure to irritants could cause problems.

Allergic contact dermatitis
This is a condition in which the skin develops a specific immunological hypersensitivity.

The most common allergic response is to nickel, found in inexpensive jewellery/body piercing. Continued exposure to the allergen results in an eczematous response, ranging from mild to severe. Allergy patch testing may identify the allergen; in many cases a change of job or avoiding the allergen may be necessary (Hunter et al, 2002). The most difficult cases to treat are those in which allergic contact dermatitis is suspected but no definitive triggering factor can be proven.

Common presenting symptoms

Itch
Pruritus (itching), which accompanies most eczematous conditions, can be acute and distressing. The itch–scratch–itch cycle quickly becomes established. The skin is well supplied with sensory nerves that respond quickly to the mechanical stimulation of scratching or any external stimulation.

Because of the manner in which sensory impulses are transported, itch has two components: a quick, localised prickly sensation, followed by a slow and diffuse burning itch.

While itch is a sensation, scratching is a learned behaviour; nurses should encourage non-traumatising behaviour such as tapping the skin surface.

Redness
Blood supply to the skin is prolific and normally only required in low volume. Inflammatory skin diseases alter this balance by causing dilation of blood vessels feeding the skin, leading to generalised total body redness (erythroderma).

In atopic eczema, white dermatoglyphism can be evoked due to the abnormal response of the skin’s vascular change. Firm strokes of the skin normally produce a “weal and flare” response, a pink raised weal lasting about 30 minutes, but in those with atopic eczema a simple white line arises, leaving the pressure site with no erythema.

BOX 2: DIAGNOSTIC CRITERIA FOR ATOPIC ECZEMA

Must have an itchy skin condition, plus three of the following:

- Personal history of itchy skin – on cheek (infants), skin flexures or whole body or face (others)
- Personal history of asthma or hay fever – if aged <4 years, family history in first-degree relatives
- Generalised dry skin in the past 12 months
- Visible eczema – over convexities, that is cheeks, forehead, outer arms (<18 months), in skin flexures (>4 years)
- Onset of signs and symptoms <2 years (do not use this criteria in children <2–4 years)
- In children of Asian, black Caribbean and black African ethnic groups, atopic eczema can affect the extensor surfaces rather than the flexures, and discoid or follicular pattern may be more common

Source: NICE (2007)

Infections
Primary or secondary infections can cause exacerbations of eczema. Infections resulting from bacteria such as Staphylococcus or Streptococcus are characterised by weeping, pustules, yellowish crusting and rapid deterioration or failure to respond to treatment.

Patients with atopic eczema tend to be more susceptible to viral infections, for example, molluscum contagiosum and eczema herpeticum (those affected with the latter should avoid contact with anyone who has a cold sore).

Emollients
Agents that moisturise and lubricate the skin are the mainstay of dermatological treatment. They are used in different forms such as soap substitute/bath oils or “leave on” preparations. They can be used in skin maintenance programmes and are vital in preparing the skin for specific therapies, such as corticosteroids. The choice of emollient depends on the disorder:

- Dry, hyperkeratotic skin – use oily, occlusive ointments
- Flaky, rough, excoriated skin – use grease-based preparations
- Erythematous, inflamed skin – benefits from the cooling effect of water-soluble creams

Patients may use a combination of emollients for different areas, for example cream for the face and ointment for the body. Taking time to demonstrate the technique for applying emollients and trying different ones so patients are involved in the choice is key to concordance (Peters et al, 2008).

Recent research by skin scientists and dermatologists have demonstrated that aqueous cream, which contains sodium lauryl sulphate, causes a decrease in stratum corneum thickness, a concomitant increase in transepidermal water loss and elevates the skin ph (Tsang and Guy, 2010). As a result, aqueous cream is not recommended as a soap substitute or a leave-on moisturiser for atopic eczema or seborrhoeic dermatitis. Other products are available such as QV Gentle Wash.

Applying topical moisturiser
Ask children, patients or their family carers (as appropriate) to show how they apply the moisturiser, and then show them the recommended technique (Fig 3). Apply the moisturiser with smooth downward strokes in the direction of the hair – this reduces friction/irritation on the skin surface and avoids an increase in skin temperature that triggers itching. Rubbing in the moisturiser can block hair follicles, leading to localised infection (folliculitis).

Humidity and temperature in the home affects the skin (Cork et al, 2003). If the bath water or bathroom is hot, the child/patient will lose water through evaporation, causing the skin to become drier. If moisturiser is applied too thickly, it can trap in body heat, leading to itching. To be effective it needs to be reapplied several times throughout the day.

If skin feels immediately dry after applying a moisturiser, change to one that has a high oil-to-water ratio. Scratching is a sign of dry skin, and the product needs to be applied often enough to prevent drying. Consider patients’ daily routine, and discuss when the moisturiser should be applied. As the epidermal barrier recovers, application frequency can be reduced. Writing instructions about the application on the prescription will
reinforce the message and also act as a reminder (Peters, 2005).

**Topical corticosteroids**

The risk of significant skin atrophy from brief treatment with a mild or moderately potent topical steroid appears to be extremely low. Epidermal thinning does occur within 1-3 weeks of treatment with potent or very potent topical steroids on normal skin but this reverses within four weeks of stopping (O'Donoghue, 2005). Fear of using topical steroids can lead to failure to optimise treatment and can turn the condition from acute to chronic. Box 3 details the side-effects of using corticosteroids.

The topical corticosteroid should be applied to the affected areas only around 30 minutes after the topical emollient or bathing with a bath oil or soap substitute (Flohr and Williams, 2004). The topical emollient can then be reapplied a minimum of 60 minutes later (Flohr and Williams, 2004). Only one area of immunosuppressant interaction with emollients has been studied, and this is with the newer topical immunomodulating agents, tacrolimus and pimecrolimus. NICE (2004) recommended that emollients are not used two hours after or before applying tacrolimus, but there is no restriction with pimecrolimus (Voegeli, 2007).

Ointment is preferred as it is more viscous and occlusive but not always cosmetically acceptable. Cream is used if the skin is moist and sore. Creams are used if the skin is moist and sore, but contain more potential sensitisers to keep them bacteria-free and chemically stable. Lotions are easy to apply with less friction and, if the skin is particularly hairy, they avoid irritating the hair follicles. Sprays enable a minimal touch technique, which is useful when the skin is sore; if there are dexterity problems it enables coverage of backs and lower legs. However, sprays are also a fire hazard and make surfaces slippery as they are paraffin based.

**Topical immunomodulating agents**

Tacrolimus and pimecrolimus are non-steroidal preparations that are applied topically. They are immunomodulators and reduce inflammation by suppressing the T-lymphocyte response in active atopic eczema. Long-term side-effects are not yet known (less than 10 years of data are available) but they are not thought to cause skin atrophy, making them an option for treatment in people at risk of irreversible skin atrophy (NICE, 2004). Both cause a range of side-effects; the most common are burning/tingling sensation, pruritus, erythema, folliculitis, herpes simplex, acne, increased sensitivity to hot or cold, and alcohol intolerance. There is also concern about exposure to ultraviolet light and the potential for skin cancer and lymphoma.

**Bandaging or covering garments**

Different bandages or garments are also useful in managing eczemas. As they prevent direct access to skin, maintain surface temperature and help to keep skin moist, they can help reduce the need to scratch and allow the skin to heal and improve sleep patterns. However, not only can they be time-consuming to apply and expensive, but also the evidence to support their use is limited.

**Referral**

The majority of patients with eczema can be managed successfully in primary care with provision made for immediate access to medication with a step-up/step-down approach. Those with severe hand dermatitis or those with a possible contact dermatitis will need referral for allergy patch testing. Those whose eczema is not well controlled or who have a poor quality of life will need to be referred for specialist help – either to a dermatology nurse specialist or dermatologist.

**Conclusion**

Nurses have a key role in educating and supporting patients to carry out self-care, and in initiating treatment. They need to know how to organise skin care regimens so patients, carers and families remain confident in controlling the condition and accessing medications. NT

**References**


**Box 3. SIDE-EFFECTS OF TOPICAL CORTICOSTEROIDS**

- Vasoconstriction
- Decreased permeability of dermal vessels
- Decreased phagocytic migration and activity
- Decreased fibrin formation
- Decreased kinin formation
- Immunosuppression
- Decreased epidermal proliferation
- Atrophic changes
- Thinning of epidermis
- Thinning of dermis
- Telangiectasia and striae
- Bruising/purpura

**Miscellaneous**

- Hirsutism
- Folliculitis and acneform
- Disguised infections – fungal
- Rare systemic absorption
- Tachyphylaxis
- Rebound – this is when the skin condition relapses when the suppression has been removed

Source: Peters (2011)