

Use of emollients in the management of atopic eczema

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The terms 'eczema' and 'dermatitis' are often used interchangeably and refer to an inflammatory condition of the skin. The term eczema comes from the Greek word *ekzein*, which means 'to boil', and relates to the vesicles sometimes seen during an acute phase of the condition (National Eczema Society, 2015a).

There are a number of forms of eczema, but these can be broadly categorised into exogenous or endogenous. Exogenous eczema is caused by a natural or synthetic substance that comes into contact with the skin, for example, contact dermatitis. Endogenous eczema is caused by internal factors within the body; the specific cause is usually unknown. The most common form of endogenous eczema is atopic eczema.

There is no known cause for atopic eczema, but it occurs in genetically susceptible individuals when exposed to environmental irritants or allergens (Akdis et al, 2006), commonly called 'triggers'. Triggers are not the same for every individual, and can include pet hair; house-dust mites; pollen; and certain foods, such as cow's milk and eggs (National Institute for Health and Care Excellence (NICE), 2011).

Atopic eczema is a chronic, relapsing, itchy skin condition (Peate, 2011) that is often scaly, pigmented, and thickened, sometimes with signs of lichenification (dry and leathery) due to persistent trauma, such as scratching. This differs from the acute phase or 'flare up', when the skin presents with vesicles, redness, weeping, crusting, and scaling.

Prevalence

Atopic eczema affects people of all ages, but children in particular. The prevalence rate for atopic eczema is approximately 15–20% in children and 2–10% in adults (Scottish Intercollegiate Guidelines Network (SIGN), 2012), and accounts for 30% of all dermatological consultations in primary care (Shamssain, 2007; Sehra et al, 2008).

Pathophysiology

One of the many functions of the skin is to act as a barrier, protecting the body from invading organisms or irritation. The skin is made up of a thin epidermal layer on the outside,

a fairly elastic dermal layer in the middle, and a fatty layer at the deepest level. Each layer contains skin cells, water, and fats that help to maintain and protect the condition of the skin.

The horny layer or stratum corneum of the epidermis acts as a brick wall. The skin cells within this layer (corneocytes) are the bricks, while the lipids act as the mortar that cements everything together to create a seal. Healthy corneocytes need to remain hydrated in order to maintain the brick wall—the protective barrier against allergens, pathogens, and damage. The lipids help to retain moisture and assist in preventing harmful substances or bacteria from entering the body.

In people with atopic eczema, the protective barrier function changes because of genetic factors, causing a reduction in natural moisturisers. Destruction of the lipid barrier around the corneocytes also occurs, causing an increase in water loss from the corneocytes that leads to dehydration (NICE, 2007). The corneocytes change shape owing to shrinkage and cracking, and gaps open between the skin cells allowing bacteria or irritants to pass through more easily, which causes the skin to become inflamed and itchy.

The pathophysiology of atopic eczema is a complex interaction of susceptible genes, environmental triggers, defects in the skin barrier, and immunologic responses (Peate, 2011).

Presentation

Atopic eczema is a dry skin condition that may become red and sore, called a 'flare-up'. The skin may then calm down, but tends to be dry and itchy. The chief characteristic of atopic eczema is the 'itch', which can be unbearable leading to insomnia, stress, and depression (Peate, 2011).

Atopic eczema can be present in large or small patches in any body area, usually starting on the face in babies and often affecting the flexural areas: back of the knees, inside of the elbows, and the wrists. Darker skin types tend to present differently from white skin types, with eczema appearing around the front of the knees and the back of the elbows (called the 'reverse flexural pattern') as well as in skin creases (NICE, 2007). A papular pattern (red spots) can also appear over the chest and abdomen.



Figure 1. Atopic eczema is a chronic condition that typically starts in childhood but may also occur in adulthood

Management

The key goals in the management of atopic eczema are symptom relief by reducing skin inflammation and dryness and the prevention of infection (NICE, 2011). Treatment for mild-to-moderate eczema includes topical therapies, emollients, corticosteroids, immunomodulators, antibiotics, and antihistamines. In severe eczema, referral to secondary care may be required for phototherapy and systemic therapies. Self-management is also important and includes trigger avoidance, where possible, and adherence to medication and treatment regimens.

Emollients

When managing atopic eczema, it is most important to keep the skin soft and supple by frequent and generous use of emollients. The terms 'emollients' and 'moisturisers' are often used interchangeably, but can be defined as different substances. Voegeli and Smith & Nephew Foundation (2007) suggest that emollients are lipids that occlude the skin surface and prevent water loss from the stratum corneum. Moisturisers are lipid emulsions that hydrate the skin by the application of humectant to the skin, which is water-loving and draws water from the dermis to the epidermis (Voegeli and Smith & Nephew Foundation, 2007). Some products have emollient properties, while others have both emollient and moisturising properties (Penzer, 2010).

Emollients contain active ingredients that provide a therapeutic effect—in this case, they rehydrate the skin—and excipients, such as preservatives and emulsifiers, allow the active ingredient to exert its effect. Emollients contain lipids that are mixed with water. Different amounts of water are used in order to provide different consistencies—the less water used, the greasier the mixture and the more effective the product. Emollients are commonly recommended to be used as soap substitutes to clean the skin (NICE, 2007;

SIGN, 2011), and leave-on topical emollients are available in different formulations.

Formulations

Soap substitutes

Soap tends to dry the skin as it removes natural oils (NICE, 2007; SIGN, 2011); hence, it is best avoided in those with eczema. Emollient soap substitutes do not foam but are just as effective at cleaning the skin, and have the added benefit of trapping moisture into the skin. Soap substitutes can be applied before bathing, showering or washing, or while in the water.

Bath oils

Again, bubble bath products are extremely drying and potentially irritating to people with eczema and best avoided (NICE, 2007; SIGN, 2011). There are a range of liquid emollient bath oils available that leave a thin layer of oil over the skin, helping it to rehydrate. These products can leave the person and the bath slippery. Hot and/or prolonged baths are not advised to people with atopic eczema as this will cause moisture loss (National Eczema Society, 2015b). The skin should be dabbed dry rather than rubbing it, as this may lead to further skin damage and irritation.

Topical leave-on emollients

Ointments, creams, and lotions are available, any or all of which might be suitable to use at different times, depending on whether a person's eczema reacts to a specific ingredient or ingredients. Ointments do not contain water or preservatives. They can be quite greasy, and some people find this unacceptable. However, because they are very effective at

retaining water in the skin, they are useful for very dry and thickened skin (National Eczema Society, 2015b). There is also less chance of skin sensitivity as they contain no preservatives.

Creams contain a mixture of lipids and water, feel light and cool on the skin, and are absorbed quickly by the skin, but they tend to be thicker and greasier than lotions. Many people with eczema prefer creams for day-time use (NICE, 2007; Penzer, 2010). All creams contain preservatives to prevent bacterial colonisation, and some people can become sensitive to these preservatives, although this is not common.

Lotions contain more water and less lipids than creams. They are easily absorbed and leave the skin feeling less greasy, but are not very effective at moisturising the skin. However, they can be useful for very hairy parts of the body (National Eczema Society, 2015b).

Application

There is limited literature on how emollients should be applied. However, consensus from research in the field provides key suggestions (Ersser, 2007; Penzer, 2012), as follows:

- ♦ Apply gently in the direction of hair growth. Never rub up and down vigorously as this could trigger itching, block hair follicles, or create more heat in the skin
- ♦ Apply all over the skin but particularly to dry areas whenever the skin becomes dry
- ♦ Continue to use the emollient even when the eczema has improved, as this will help to prevent 'flare ups'. **BJCN**

Akdis CA, Akdis M, Bieber T et al (2006) Diagnosis and treatment of atopic dermatitis in children and adults: European Academy of Allergy and Clinical Immunology/American Academy of Allergy, Asthma and Immunology/PRACTALL Consensus Report. *Allergy* **61**(8): 969–87

Ersser S, Maguire S, Nicol N, Penzer R, Peters J (2007) *Best Practice in Emollient Therapy: A Statement for Healthcare Professionals*. Dermatology UK Ltd, Aberdeen

National Eczema Society (2015a) What is eczema? www.eczema.org/what-is-eczema (accessed 26 January 2016)

National Eczema Society (2015b) Treatments. www.eczema.org/basic-treatment (accessed 26 January 2016)

National Institute for Health and Care Excellence (2007) NICE guidelines [CG57]. Atopic eczema in under 12s: diagnosis and management. www.nice.org.uk/guidance/cg57 (accessed 18 January 2016)

National Institute for Health and Care Excellence (2011) NICE guidelines [CG116]. Food allergy in under 19s: assessment and diagnosis. www.nice.org.uk/guidance/cg116 (accessed 18 January 2016)

Peate I (2011) Eczema: causes, symptoms and treatment in the community. *Br J Community Nurs* **16**(7): 324–31

Penzer R, Ersser J (2010) *Principles of Skin Care: A Guide for Nurses and Other Health Professionals*. Wiley-Blackwell, Chichester

Penzer R (2012) Best practice in emollient therapy. A statement for healthcare professionals. 3rd edn. *Dermatological Nursing* **11**(4): S1–19

Scottish Intercollegiate Guidelines Network (2011) National clinical guideline 125. Management of atopic eczema in primary care. <http://sign.ac.uk/pdf/sign125.pdf> (accessed 26 January 2016)

Sehra S, Tuana FM, Holbreich M et al (2008) Scratching the surface: towards understanding the pathogenesis of atopic dermatitis. *Crit Rev Immunol* **28**(1): 5–43

Shamssain M (2007) Trends in the prevalence and severity of asthma, rhinitis and atopic eczema in 6- to 7- and 13- to 14-year-old children from the north-east of England. *Pediatr Allergy Immunol* **18**(2): 149–53

Voegeli D, Smith & Nephew Foundation (2007) Factors that exacerbate skin breakdown and ulceration. In: *Skin Breakdown: The Silent Epidemic*. Smith & Nephew Foundation, London, UK: 17–21

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