

## INTRODUCTION

Eczema (also called 'dermatitis') is a common skin condition that can affect up to 10% of the population at some time of their lives. In certain cases the condition may be severe and incapacitating. The word 'eczema' is derived from an ancient Greek word meaning 'to boil over'. Although many patients who have eczema have dry, sometimes flaky skin, when the condition flares up vesicles and blisters that may weep and crusts appear. Although eczema may become infected, in itself it is not contagious. There are several different types and causes of eczema. The commonest type is called 'atopic eczema'. The word 'atopy' was introduced by Coca<sup>1</sup> in 1923 as a convenient collective term for a group of diseases, chief among which are asthma, hay fever and eczema, which occur spontaneously in individuals who have a family history of susceptibility. In fact some 75% of patients with atopic eczema have a personal or family history of asthma or hay fever or both. Atopic eczema usually appears before the age of one year however it may develop later in childhood or even in adulthood.

## Causation<sup>2</sup>

The underlying cause of atopic eczema is still unknown. There is no convincing evidence that food intolerance, including food allergy, is more than occasionally present or relevant. Raised serum IgE concentrations appear to be a secondary phenomenon due to imbalance of immunoregulatory T-cells, defined by a preponderance of the CD4+ TH2 helper T-cell subset. The skin of patients with eczema appears to be intrinsically hyper-reactive, resulting in a lower than normal itch threshold to chemical, mechanical and other stimuli, analogous to individuals with asthma who develop bronchospasm at much lower concentrations of inhaled histamine or metacholine than do normal individuals.

## Clinical features

The diagnosis of eczema is usually clinical and straightforward. Diagnostic guidelines that are useful in epidemiological studies are available (Table 1).<sup>3</sup> In very young children, the first symptom is often slightly red or dry skin on the forehead and cheeks (Fig 1a). The dry skin then becomes itchy, red and inflamed. Sometimes the skin in only a few

places is affected but in more severe cases the eczema may cover the whole body. Most commonly affected are the neck, cheeks, hands, wrists, ankles, feet and the skin in the creases of the elbows and the back of the knees (Figs 1b, c).

The main symptom of eczema is itching. This can be severe and distressing both for the patient and, particularly in the case of children, for their parents who may feel unable to help. The itch can be so irritating that children are naturally driven to scratch - even babies, too young to scratch, will rub their faces against anything close enough in a desperate attempt to relieve the itching. Unfortunately this breaks the skin and leaves it open to infection. The affected skin may also blister, weep and crust. If the eczema is repeatedly scratched or rubbed the skin may become thickened and rough (lichenification).

## General Management

Although the tendency to eczema cannot be cured, correct management can make a big difference to keep the patient comfortable and prevent complications. Aggravating factors should be identified and avoided where possible. Various emollients are available to reduce the dryness of the skin. Other useful treatments include steroid creams and ointments, antibiotics to treat infection and antihistamines to reduce itching.

### *Factors that may aggravate eczema*

There are many external factors that may influence eczema on a day-to-day basis. Aggravating factors should be identified and avoided where possible. Contact eczema may be caused by both irritant and allergic factors. Irritant factors include soaps and detergents (especially 'bubble-baths'), solvents, alkalis, abrasive dusts, heat, woollen clothing and even chlorine in swimming pool water. Occupations where there is a greater risk of developing irritant contact eczema include any form of wet or persistently dry work such as food handling, hairdressing, nursing, housework and building work.

Allergic contact eczema results from a delayed hypersensitivity (type IV) reaction. This requires prior exposure to the allergen, leading to formation

of 'memory' T-cells that recognize the antigen on re-exposure and then become activated to produce cytokines that recruit more inflammatory cells. The inflammatory reaction thus arises after a latent period, often taking up to 48 hours and occasionally longer to appear. Contact eczema may be investigated using patch testing. Suitably prepared dilutions of potential allergens in a bland vehicle are applied to the patient's back in small aluminium chambers, kept in place with hypoallergenic adhesive tape. These are normally removed after 48 hours and the skin examined for eczematous reactions at the test sites. A further reading is made at 96 hours to help differentiate irritant from allergic reactions. Some common skin allergens and their sources are listed in Table 2. It is worth noting that patch testing is of no value in the investigation of urticaria.

Eczema may also be aggravated by stress, furry animals such as cats and dogs, and pollen and tends to be worse in spring. Sunshine in moderation usually helps. Children who have eczema may attend a normal school but may need to take certain precautions to avoid flaring up their condition. The role of diet in atopic eczema has long been controversial. Although some patients, especially young children, undoubtedly appear to react to certain foods, food allergy is not as relevant as generally thought. Furthermore no reliable screening tests exist so far. Response to diet is not more common in patients with high IgE, nor in those with positive prick or RAST tests to suspect foods. The advice of a qualified dietician should be sought before embarking on exclusion diets in young children.

### *Emollients*

Eczematous skin is usually dry and has a reduced barrier function. Various excellent emollients are available which if used regularly help reduce the dryness, restore the barrier function and protect the skin from further damage. In general, moisturizing ointments (which are greasy) are more effective than creams or lotions; however the latter rub into the skin more easily and are less messy so most patients find them more convenient. A reasonable compromise is to use a cream or lotion during the day and an ointment in the evening. Emollients can in fact be used as often as necessary. It is particularly important to apply emollients after bathing and hand washing because washing the skin tends to cause further dryness. Bath oils are also helpful leaving a light film of oil on the skin surface that supplements natural oils and reduces moisture loss. Some bath oils also have a cleansing effect on the skin reducing the need to use soap. Patients should be warned that bath oils might make the bath slippery. Ordinary soap and 'bubble

- baths' dry the skin and should be avoided. After bathing the skin should be dried by gently patting with a soft towel rather than towelling vigorously.

### *Topical steroids*

Topical steroids are very useful and many times essential in the management of atopic eczema. Nevertheless they can cause several problems and should be treated with respect. Patients should use the weakest strength necessary to control their eczema and apply the steroid only when required. Make sure patients do not use a topical steroid where a simple emollient will do. Potential local complications of topical steroids include skin atrophy (striae (Fig 2), purpura, telangiectases and poor wound healing), hypertrichosis, folliculitis, pigmentary changes, spread of fungal infections and worsening of acne and rosacea. Inhibition of the pituitary-adrenal axis and other side-effects from systemic absorption of topically applied steroids are documented but uncommon. Potent steroids applied around the eyes may cause cataracts and glaucoma and should be strictly avoided. In general, the adverse effects of topical steroids are related to their potencies although some new steroids are claimed to produce less skin atrophy and other side-effects than older products of similar strengths. Allergic contact dermatitis to the steroid molecule may also occur and is easily overlooked.<sup>4</sup> Promising non-steroid immunomodulatory topical drugs are being developed at present and these may well revolutionise the treatment of eczema and other dermatoses in future.

### *Infections, superantigens and antibiotics.*<sup>5</sup>

The skin in atopic eczema is frequently colonized by bacteria particularly staphylococcus aureus. These bacteria can produce exotoxins with superantigenic properties. This results in stimulation of the immune system with T-cells being activated to release cytokines. The cytokine interleukin-4 (IL-4) is found in high levels in patients with atopic eczema. IL-4 stimulates B-cells to produce IgE, which binds to mast cells. These release pro-inflammatory mediators, which lead to inflammation and then eczema. Combinations of topical antibiotics and steroids are useful in the management of mildly infected eczema especially in children; severe infections should be treated with systemic antibiotics. Eczema sufferers are also prone to infection with the poxvirus (causing molluscum contagiosum) and the herpes simplex virus (causing 'eczema herpeticum'). Eczema herpeticum may be a severe illness and should be treated with systemic antivirals.



2a



**Previous Page:**

Figure 1 a, b & c: Eczema on the face and in the creases of the elbows and knees (Leo pharmaceuticals, Denmark)

**Left & Bottom:**

Figure 2a & b: Topical steroid-induced striae, folliculitis and acne.

2b



## Antihistamines

Both sedating and nonsedating antihistamines are useful in the management of atopic eczema, especially if there is an urticarial element.

## Other treatments

Phototherapy, systemic steroids and drugs such as cyclosporin and azothioprine have a place in the management of severe eczema.

## Prognosis

Atopic eczema tends to improve with age however it is impossible to prophesy the prognosis in a particular child: 50% of children are clear by the age of 6 years, and 90% are clear by the age of 15 years.<sup>6</sup> In many cases, however, individuals who had eczema in childhood continue to have skin that is more dry and 'sensitive' than normal. In some the eczema will reappear later on in life and this emphasizes the importance of long-term follow up when one talks of prognosis in atopic eczema. Older children who still have eczema should be given career advice early and encouraged to avoid occupations such as food handling and catering, hairdressing, nursing, building work and others likely to make their condition worse.

### Malta Eczema Society

Unfortunately keeping eczema under control can sometimes be difficult (and expensive). Eczema is often chronic and may have a profound effect on the quality of life of affected individuals and their families. Although eczema is of course not contagious, those affected may feel isolated and even embarrassed by their condition. To help those affected cope with their condition, a voluntary support group for persons with eczema and their families has recently been set up in Malta and named the Malta Eczema Society. The need for such a group in Malta, as found in other countries, has been felt for some time. An inaugural meeting of the new society was held on Monday 30th April 2001 at the Catholic Institute, Floriana and was well attended. It is hoped that the society will be able to help by providing support, information and practical advice. Another aim is to increase awareness throughout society about eczema and the problems it may cause. There is a lot that can be done to improve the quality of life for persons with eczema and hopefully the group will be successful. The members of the organizing committee are all volunteers. If you have

any patients who you feel would benefit from joining the Malta Eczema Society or who would like to be informed about future activities please encourage them to contact one of the following members of the organizing committee for further information: Mrs Anna Baldacchino (tel 386850), Mrs Marlene Bongalais (tel 435649) or Mr Herbert Debono (tel 335140).

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## REFERENCES

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**Table 1 Diagnostic guidelines for atopic eczema**

*Must have:*

An itchy skin condition (or parental report of scratching or rubbing in a child)

*Plus three or more of the following:*

- \* History of involvement of the skin creases, such as folds of elbows, behind the knees, fronts of ankles or around the neck (including cheeks in children under ten)
- \* A personal history of asthma or hay fever (or history of atopic disease in a first degree relative in children under four)
- \* A history of a generalised dry skin in the last year
- \* Visible flexural eczema (or eczema involving the cheeks/forehead and outer limbs in children under four)
- \* Onset under the age of two (not used if child is under four)

**Table 2 Common contact allergens and their sources**

<u>Allergen</u>	<u>Source</u>
Nickel	Costume jewellery, watch straps
Chromate	Cement, leather
Rubber chemicals	Gloves, shoes, tyres
Colophony	Sticking plaster
Wool alcohols	Lanolin, moisturizing creams, cosmetics
Balsam of Peru	Perfumes
Paraphenylenediamine	Hair dyes, clothing dyes
Parabens	Preservative in creams, cosmetics
Epoxy resins	Adhesives
Neomycin	Topical antibiotic
Benzocaine	Topical local anaesthetic