



**National Institute for  
Health and Clinical Excellence**

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# **Atopic eczema in children**

**Management of atopic eczema in  
children from birth up to the age of  
12 years**

**NICE clinical guideline 57**

Developed by the National Collaborating Centre for Women's and Children's Health

**NICE clinical guideline 57**  
**Management of atopic eczema in children from birth up to the age of 12 years**

**Ordering information**

You can download the following documents from [www.nice.org.uk/CG057](http://www.nice.org.uk/CG057)

- The NICE guideline (this document) – all the recommendations.
- A quick reference guide – a summary of the recommendations for healthcare professionals.
- ‘Understanding NICE guidance’ – information for patients and carers.
- The full guideline – all the recommendations, details of how they were developed, and reviews of the evidence they were based on.

For printed copies of the quick reference guide or ‘Understanding NICE guidance’, phone the NHS Response Line on 0870 1555 455 and quote:

- N1427 (quick reference guide)
- N1428 (‘Understanding NICE guidance’).

NICE clinical guidelines are recommendations about the treatment and care of people with specific diseases and conditions in the NHS in England and Wales

This guidance represents the view of the Institute, which was arrived at after careful consideration of the evidence available. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer and informed by the summary of product characteristics of any drugs they are considering.

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## Introduction

Atopic eczema (atopic dermatitis) is a chronic inflammatory itchy skin condition that develops in early childhood in the majority of cases. It is typically an episodic disease of exacerbation (flares, which may occur as frequently as two or three per month) and remissions. In some cases it may be continuous. Atopic eczema often has a genetic component that leads to the breakdown of the skin barrier. This makes the skin susceptible to trigger factors, including irritants and allergens, which can make the eczema worse.

Many cases of atopic eczema clear or improve during childhood, whereas others persist into adulthood. Some children who have atopic eczema will go on to develop asthma and/or allergic rhinitis; this sequence of events is sometimes referred to as the 'atopic march'. Although atopic eczema is not always recognised by healthcare professionals as being a serious medical condition, it can have a significant negative impact on quality of life for children and their parents and carers.

This clinical guideline concerns the management of atopic eczema in children from birth up to the age of 12 years. It has been developed with the aim of providing guidance on:

- diagnosis and assessment of the impact of the condition
- management during and between flares
- information and education for children and their parents or carers about the condition.

## Child-centred care

This guideline offers best practice advice on the care of children up to the age of 12 years with atopic eczema.

Treatment and care should take into account children's needs and preferences, as well as those of their parents or carers. Children with atopic eczema should have the opportunity to be involved in decisions about their care and treatment in partnership with their healthcare professionals. It is good practice for healthcare professionals to involve children and their parents or carers in the decision-making process. Where a child is not old enough or does not have the capacity to give consent to treatment, healthcare professionals should follow the Department of Health guidelines – 'Reference guide to consent for examination or treatment' (2001) (available from [www.dh.gov.uk](http://www.dh.gov.uk)). Since April 2007, healthcare professionals need to follow a code of practice accompanying the Mental Capacity Act (summary available from [www.dca.gov.uk/menincap/bill-summary.htm](http://www.dca.gov.uk/menincap/bill-summary.htm)).

Good communication between healthcare professionals and children and their parents or carers is essential. It should be supported by evidence-based written information tailored to their needs. Treatment and care, and the information given about this, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

Parents or carers should have the opportunity to be involved in decisions about their child's care. Parents or other people with parental responsibility also need to give consent to their child's care and treatment. More information is available from the Department of Health – 'Consent: a guide for children and young people' and 'Consent – what you have the right to expect: a guide for parents' (2001) (available from [www.dh.gov.uk](http://www.dh.gov.uk)).

Parents or carers should also be given the information and support they need.

## Key priorities for implementation

### Assessment of severity, psychological and psychosocial wellbeing and quality of life

- Healthcare professionals should adopt a holistic approach when assessing a child's atopic eczema at each consultation, taking into account the severity of the atopic eczema and the child's quality of life, including everyday activities and sleep, and psychosocial wellbeing (see table below). There is not necessarily a direct relationship between the severity of the atopic eczema and the impact of the atopic eczema on quality of life.

### Holistic assessment

Skin/physical severity		Impact on quality of life and psychosocial wellbeing	
Clear	Normal skin, no evidence of active atopic eczema	None	No impact on quality of life
Mild	Areas of dry skin, infrequent itching (with or without small areas of redness)	Mild	Little impact on everyday activities, sleep and psychosocial wellbeing
Moderate	Areas of dry skin, frequent itching, redness (with or without excoriation and localised skin thickening)	Moderate	Moderate impact on everyday activities and psychosocial wellbeing, frequently disturbed sleep
Severe	Widespread areas of dry skin, incessant itching, redness (with or without excoriation, extensive skin thickening, bleeding, oozing, cracking and alteration of pigmentation)	Severe	Severe limitation of everyday activities and psychosocial functioning, nightly loss of sleep

## Identification and management of trigger factors

- When clinically assessing children with atopic eczema, healthcare professionals should seek to identify potential trigger factors including:
  - irritants, for example soaps and detergents (including shampoos, bubble baths, shower gels and washing-up liquids)
  - skin infections
  - contact allergens
  - food allergens
  - inhalant allergens.
- Healthcare professionals should consider a diagnosis of food allergy in children with atopic eczema who have reacted previously to a food with immediate symptoms, or in infants and young children with moderate or severe atopic eczema that has not been controlled by optimum management, particularly if associated with gut dysmotility (colic, vomiting, altered bowel habit) or failure to thrive.

## Treatment

### *Stepped approach to management*

- Healthcare professionals should use a stepped approach for managing atopic eczema in children. This means tailoring the treatment step to the severity of the atopic eczema. Emollients should form the basis of atopic eczema management and should always be used, even when the atopic eczema is clear. Management can then be stepped up or down, according to the severity of symptoms, with the addition of the other treatments listed in the table below.

<b>Mild atopic eczema</b>	<b>Moderate atopic eczema</b>	<b>Severe atopic eczema</b>
Emollients	Emollients	Emollients
Mild potency topical corticosteroids	Moderate potency topical corticosteroids	Potent topical corticosteroids
	Topical calcineurin inhibitors	Topical calcineurin inhibitors
	Bandages	Bandages
		Phototherapy
		Systemic therapy

- Healthcare professionals should offer children with atopic eczema and their parents or carers information on how to recognise flares of atopic eczema (increased dryness, itching, redness, swelling and general irritability). They should give clear instructions on how to manage flares according to the stepped-care plan, and prescribe treatments that allow children and their parents or carers to follow this plan.

#### *Emollients*

- Healthcare professionals should offer children with atopic eczema a choice of unperfumed emollients to use every day for moisturising, washing and bathing. This should be suited to the child's needs and preferences, and may include a combination of products or one product for all purposes. Leave-on emollients should be prescribed in large quantities (250–500 g weekly) and easily available to use at nursery, pre-school or school.

#### *Topical corticosteroids*

- The potency of topical corticosteroids should be tailored to the severity of the child's atopic eczema, which may vary according to body site. They should be used as follows:
  - use mild potency for mild atopic eczema
  - use moderate potency for moderate atopic eczema
  - use potent for severe atopic eczema
  - use mild potency for the face and neck, except for short-term (3–5 days) use of moderate potency for severe flares
  - use moderate or potent preparations for short periods only (7–14 days) for flares in vulnerable sites such as axillae and groin
  - do not use very potent preparations in children without specialist dermatological advice.

#### *Treatment for infections*

- Children with atopic eczema and their parents or carers should be offered information on how to recognise the symptoms and signs of bacterial infection with staphylococcus and/or streptococcus (weeping, pustules, crusts, atopic eczema failing to respond to therapy, rapidly worsening)

atopic eczema, fever and malaise). Healthcare professionals should provide clear information on how to access appropriate treatment when a child's atopic eczema becomes infected.

- Children with atopic eczema and their parents or carers should be offered information on how to recognise eczema herpeticum. Signs of eczema herpeticum are:
  - areas of rapidly worsening, painful eczema
  - clustered blisters consistent with early-stage cold sores
  - punched-out erosions (circular, depressed, ulcerated lesions) usually 1–3 mm that are uniform in appearance (these may coalesce to form larger areas of erosion with crusting)
  - possible fever, lethargy or distress.

### **Education and adherence to therapy**

- Healthcare professionals should spend time educating children with atopic eczema and their parents or carers about atopic eczema and its treatment. They should provide information in verbal and written forms, with practical demonstrations, and should cover:
  - how much of the treatments to use
  - how often to apply treatments
  - when and how to step treatment up or down
  - how to treat infected atopic eczema.

This should be reinforced at every consultation, addressing factors that affect adherence.

### **Indications for referral**

- Referral for specialist dermatological advice is recommended for children with atopic eczema if:
  - the diagnosis is, or has become, uncertain
  - management has not controlled the atopic eczema satisfactorily based on a subjective assessment by the child, parent or carer (for example,

the child is having 1–2 weeks of flares per month or is reacting adversely to many emollients)

- atopic eczema on the face has not responded to appropriate treatment
- the child or parent/carer may benefit from specialist advice on treatment application (for example, bandaging techniques)
- contact allergic dermatitis is suspected (for example, persistent atopic eczema or facial, eyelid or hand atopic eczema)
- the atopic eczema is giving rise to significant social or psychological problems for the child or parent/carer (for example, sleep disturbance, poor school attendance)
- atopic eczema is associated with severe and recurrent infections, especially deep abscesses or pneumonia.

# 1 Guidance

The following guidance is based on the best available evidence. The full guideline ([www.nice.org.uk/CG057fullguideline](http://www.nice.org.uk/CG057fullguideline)) gives details of the methods and the evidence used to develop the guidance (see section 5 for details).

## 1.1 *Diagnosis*

1.1.1.1 To aid management of atopic eczema in children, healthcare professionals should take detailed clinical and drug histories that include questions about:

- time of onset, pattern and severity of the atopic eczema
- response to previous and current treatments
- possible trigger factors (irritant and allergic)
- the impact of the atopic eczema on children and their parents or carers
- dietary history including any dietary manipulation
- growth and development
- personal and family history of atopic diseases.

1.1.1.2 Atopic eczema should be diagnosed when a child has an itchy skin condition plus three or more of the following:

- visible flexural dermatitis involving the skin creases, such as the bends of the elbows or behind the knees (or visible dermatitis on the cheeks and/or extensor areas in children aged 18 months or under)
- personal history of flexural dermatitis (or dermatitis on the cheeks and/or extensor areas in children aged 18 months or under)
- personal history of dry skin in the last 12 months
- personal history of asthma or allergic rhinitis (or history of atopic disease in a first-degree relative of children aged under 4 years)
- onset of signs and symptoms under the age of 2 years (this criterion should not be used in children aged under 4 years).

Healthcare professionals should be aware that in Asian, black Caribbean and black African children, atopic eczema can affect the extensor surfaces rather than the flexures, and discoid (circular) or follicular (around hair follicles) patterns may be more common.

## 1.2 **Assessment of severity, psychological and psychosocial wellbeing and quality of life**

1.2.1.1 Healthcare professionals should adopt a holistic approach when assessing a child's atopic eczema at each consultation, taking into account the severity of the atopic eczema and the child's quality of life, including everyday activities and sleep, and psychosocial wellbeing (see table 1). There is not necessarily a direct relationship between the severity of the atopic eczema and the impact of the atopic eczema on quality of life.

**Table 1. Holistic assessment**

<b>Skin/physical severity</b>		<b>Impact on quality of life and psychosocial wellbeing</b>	
Clear	Normal skin, no evidence of active atopic eczema	None	No impact on quality of life
Mild	Areas of dry skin, infrequent itching (with or without small areas of redness)	Mild	Little impact on everyday activities, sleep and psychosocial wellbeing
Moderate	Areas of dry skin, frequent itching, redness (with or without excoriation and localised skin thickening)	Moderate	Moderate impact on everyday activities and psychosocial wellbeing, frequently disturbed sleep
Severe	Widespread areas of dry skin, incessant itching, redness (with or without excoriation, extensive skin thickening, bleeding, oozing, cracking and alteration of pigmentation)	Severe	Severe limitation of everyday activities and psychosocial functioning, nightly loss of sleep

1.2.1.2 Healthcare professionals should explain the overall physical severity of a child's atopic eczema to the child and their parents or carers.

- 1.2.1.3 Healthcare professionals should be aware that areas of atopic eczema of differing severity can coexist in the same child. If this is the case, each area should be treated independently.
- 1.2.1.4 During an assessment of psychological and psychosocial wellbeing and quality of life, healthcare professionals should take into account the impact of atopic eczema on parents or carers as well as the child and provide appropriate advice and support.
- 1.2.1.5 Healthcare professionals should be aware that all categories of severity of atopic eczema, even mild, can have a negative impact on psychological and psychosocial wellbeing and quality of life. This should be taken into account when deciding on treatment strategies.
- 1.2.1.6 Healthcare professionals should consider using the following additional tools to provide objective measures of the severity of atopic eczema, quality of life and response to treatment:
- visual analogue scales (0–10) capturing the child’s and/or parents’ or carers’ assessment of severity, itch and sleep loss over the previous 3 days and nights
  - validated tools:
    - Patient-Oriented Eczema Measure (POEM) for severity
    - Children’s Dermatology Life Quality Index (CDLQI), Infants’ Dermatitis Quality of Life Index (IDQoL) or Dermatitis Family Impact (DFI) questionnaire for quality of life.

### **1.3 *Epidemiology***

- 1.3.1.1 Healthcare professionals should inform children with atopic eczema and their parents or carers that the condition often improves with time, but that not all children will grow out of atopic eczema and it may get worse in teenage or adult life.

1.3.1.2 Healthcare professionals should inform children with atopic eczema and their parents or carers that children with atopic eczema can often develop asthma and/or allergic rhinitis and that sometimes food allergy is associated with atopic eczema, particularly in very young children.

#### **1.4 Identification and management of trigger factors**

1.4.1.1 When clinically assessing children with atopic eczema, healthcare professionals should seek to identify potential trigger factors including:

- irritants, for example soaps and detergents (including shampoos, bubble baths, shower gels and washing-up liquids)
- skin infections
- contact allergens
- food allergens
- inhalant allergens.

1.4.1.2 Healthcare professionals should consider a diagnosis of food allergy in children with atopic eczema who have reacted previously to a food with immediate symptoms, or in infants and young children with moderate or severe atopic eczema that has not been controlled by optimum management, particularly if associated with gut dysmotility (colic, vomiting, altered bowel habit) or failure to thrive.

1.4.1.3 Healthcare professionals should consider a diagnosis of inhalant allergy in children with seasonal flares of atopic eczema, children with atopic eczema associated with asthma or allergic rhinitis, and children aged 3 years or over with atopic eczema on the face, particularly around the eyes.

1.4.1.4 Healthcare professionals should consider a diagnosis of allergic contact dermatitis in children with an exacerbation of previously controlled atopic eczema or with reactions to topical treatments.

- 1.4.1.5 Healthcare professionals should reassure children with mild atopic eczema and their parents or carers that most children with mild atopic eczema do not need to have tests for allergies.
- 1.4.1.6 Healthcare professionals should advise children with atopic eczema and their parents or carers not to undergo high street or internet allergy tests because there is no evidence of their value in the management of atopic eczema.
- 1.4.1.7 Healthcare professionals should offer a 6–8 week trial of an extensively hydrolysed protein formula or amino acid formula in place of cow's milk formula for bottle-fed infants aged under 6 months with moderate or severe atopic eczema that has not been controlled by optimal treatment with emollients and mild topical corticosteroids.
- 1.4.1.8 Healthcare professionals should refer children with atopic eczema who follow a cow's milk-free diet for longer than 8 weeks for specialist dietary advice.
- 1.4.1.9 Diets based on unmodified proteins of other species' milk (for example, goat's milk, sheep's milk) or partially hydrolysed formulas should not be used in children with atopic eczema for the management of suspected cow's milk allergy. Diets including soya protein can be offered to children aged 6 months or over with specialist dietary advice.
- 1.4.1.10 Healthcare professionals should inform women who are breastfeeding children with atopic eczema that it is not known whether altering the mother's diet is effective in reducing the severity of the condition. A trial of an allergen-specific exclusion diet should be considered under dietary supervision if food allergy is strongly suspected.
- 1.4.1.11 Healthcare professionals should inform children with atopic eczema and their parents or carers that it is unclear what role factors such

as stress, humidity or extremes of temperature have in causing flares of atopic eczema. These factors should be avoided where possible.

## **1.5 Treatment**

### **1.5.1 Stepped approach to management**

1.5.1.1 Healthcare professionals should use a stepped approach for managing atopic eczema in children. This means tailoring the treatment step to the severity of the atopic eczema. Emollients should form the basis of atopic eczema management and should always be used, even when the atopic eczema is clear. Management can then be stepped up or down, according to the severity of symptoms, with the addition of the other treatments listed in table 2.

**Table 2. Treatment options**

<b>Mild atopic eczema</b>	<b>Moderate atopic eczema</b>	<b>Severe atopic eczema</b>
Emollients	Emollients	Emollients
Mild potency topical corticosteroids	Moderate potency topical corticosteroids	Potent topical corticosteroids
	Topical calcineurin inhibitors	Topical calcineurin inhibitors
	Bandages	Bandages
		Phototherapy
		Systemic therapy

1.5.1.2 Healthcare professionals should offer children with atopic eczema and their parents or carers information on how to recognise flares of atopic eczema (increased dryness, itching, redness, swelling and general irritability). They should give clear instructions on how to manage flares according to the stepped-care plan, and prescribe treatments that allow children and their parents or carers to follow this plan.

1.5.1.3 Treatment for flares of atopic eczema in children should be started as soon as signs and symptoms appear and continued for approximately 48 hours after symptoms subside.

## **1.5.2 Emollients**

1.5.2.1 Healthcare professionals should offer children with atopic eczema a choice of unperfumed emollients to use every day for moisturising, washing and bathing. This should be suited to the child's needs and preferences, and may include a combination of products or one product for all purposes. Leave-on emollients should be prescribed in large quantities (250–500 g weekly) and easily available to use at nursery, pre-school or school.

1.5.2.2 Healthcare professionals should inform children with atopic eczema and their parents or carers that they should use emollients in larger amounts and more often than other treatments. Emollients should be used on the whole body both when the atopic eczema is clear and while using all other treatments.

1.5.2.3 Healthcare professionals should inform children with atopic eczema and their parents or carers that they should use emollients and/or emollient wash products instead of soaps and detergent-based wash products.

1.5.2.4 Healthcare professionals should advise parents or carers of children aged under 12 months with atopic eczema to use emollients and/or emollient wash products instead of shampoos for the child. If shampoo is used for older children with atopic eczema it should be unperfumed and ideally labelled as being suitable for eczema; washing the hair in bath water should be avoided.

1.5.2.5 Healthcare professionals should show children with atopic eczema and their parents or carers how to apply emollients, including how to smooth emollients onto the skin rather than rubbing them in.

- 1.5.2.6 Healthcare professionals should offer an alternative emollient if a particular emollient causes irritation or is not acceptable to a child with atopic eczema.
- 1.5.2.7 Healthcare professionals should review repeat prescriptions of individual products and combinations of products with children with atopic eczema and their parents or carers at least once a year to ensure that therapy remains optimal.
- 1.5.2.8 Where emollients (excluding bath emollients) and other topical products are used at the same time of day to treat atopic eczema in children, the different products should ideally be applied one at a time with several minutes between applications where practical. The preferences of the child and parents or carers should determine which product should be applied first.

### **1.5.3 Topical corticosteroids**

- 1.5.3.1 Healthcare professionals should discuss the benefits and harms of treatment with topical corticosteroids with children with atopic eczema and their parents or carers, emphasising that the benefits outweigh possible harms when they are applied correctly.

- 1.5.3.2 The potency of topical corticosteroids should be tailored to the severity of the child's atopic eczema, which may vary according to body site. They should be used as follows:
- use mild potency for mild atopic eczema
  - use moderate potency for moderate atopic eczema
  - use potent for severe atopic eczema
  - use mild potency for the face and neck, except for short-term (3–5 days) use of moderate potency for severe flares
  - use moderate or potent preparations for short periods only (7–14 days) for flares in vulnerable sites such as axillae and groin
  - do not use very potent preparations in children without specialist dermatological advice.
- 1.5.3.3 It is recommended that topical corticosteroids for atopic eczema should be prescribed for application only once or twice daily.<sup>1</sup>
- 1.5.3.4 It is recommended that where more than one alternative topical corticosteroid is considered clinically appropriate within a potency class, the drug with the lowest acquisition cost should be prescribed, taking into account pack size and frequency of application.
- 1.5.3.5 Healthcare professionals should inform children with atopic eczema and their parents or carers that they should only apply topical corticosteroids to areas of active atopic eczema (or eczema that has been active within the past 48 hours – see 1.5.1.3), which may include areas of broken skin.
- 1.5.3.6 Healthcare professionals should exclude secondary bacterial or viral infection if a mild or moderately potent topical corticosteroid

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<sup>1</sup> Recommendations 1.5.3.3 and 1.5.3.4 are from 'Frequency of application of topical corticosteroids for atopic eczema' (NICE technology appraisal guidance 81). They have been incorporated into this guideline in line with NICE procedures for developing clinical guidelines.

has not controlled the atopic eczema within 7–14 days. In children aged 12 months or over, potent topical corticosteroids should then be used for as short a time as possible and in any case for no longer than 14 days. They should not be used on the face or neck. If this treatment does not control the atopic eczema, the diagnosis should be reviewed and the child referred for specialist dermatological advice.

- 1.5.3.7 Potent topical corticosteroids should not be used in children aged under 12 months without specialist dermatological supervision.
- 1.5.3.8 Healthcare professionals who dispense topical corticosteroids should apply labels stating the potency class of the preparations to the container (for example, the tube), not the outer packaging.
- 1.5.3.9 Healthcare professionals should consider treating problem areas of atopic eczema with topical corticosteroids for two consecutive days per week to prevent flares, instead of treating flares as they arise, in children with frequent flares (two or three per month), once the eczema has been controlled. This strategy should be reviewed within 3 to 6 months to assess effectiveness.
- 1.5.3.10 A different topical corticosteroid of the same potency should be considered as an alternative to stepping up treatment if tachyphylaxis to a topical corticosteroid is suspected in children with atopic eczema.

#### **1.5.4 Topical calcineurin inhibitors**

- 1.5.4.1 Topical tacrolimus and pimecrolimus are not recommended for the treatment of mild atopic eczema or as first-line treatments for atopic eczema of any severity.<sup>2</sup>

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<sup>2</sup> Recommendation 1.5.4.1 is from 'Tacrolimus and pimecrolimus for atopic eczema' (NICE technology appraisal guidance 82). It has been incorporated into this guideline in line with NICE procedures for developing clinical guidelines.

- 1.5.4.2 Topical tacrolimus is recommended, within its licensed indications, as an option for the second-line treatment of moderate to severe atopic eczema in adults and children aged 2 years and older that has not been controlled by topical corticosteroids (see 1.5.4.4), where there is a serious risk of important adverse effects from further topical corticosteroid use, particularly irreversible skin atrophy.<sup>3</sup>
- 1.5.4.3 Pimecrolimus is recommended, within its licensed indications, as an option for the second-line treatment of moderate atopic eczema on the face and neck in children aged 2–16 years that has not been controlled by topical corticosteroids (see 1.5.4.4), where there is a serious risk of important adverse effects from further topical corticosteroid use, particularly irreversible skin atrophy.
- 1.5.4.4 For the purposes of this guidance, atopic eczema that has not been controlled by topical corticosteroids refers to disease that has not shown a satisfactory clinical response to adequate use of the maximum strength and potency that is appropriate for the patient's age and the area being treated.
- 1.5.4.5 It is recommended that treatment with tacrolimus or pimecrolimus be initiated only by physicians (including general practitioners) with a special interest and experience in dermatology, and only after careful discussion with the patient about the potential risks and benefits of all appropriate second-line treatment options.
- 1.5.4.6 Healthcare professionals should explain to children with atopic eczema and their parents or carers that they should only apply topical calcineurin inhibitors to areas of active atopic eczema, which may include areas of broken skin.

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<sup>3</sup> Recommendations 1.5.4.2–1.5.4.5 are from 'Tacrolimus and pimecrolimus for atopic eczema' (NICE technology appraisal guidance 82). They have been incorporated into this guideline in line with NICE procedures for developing clinical guidelines.  
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1.5.4.7 Topical calcineurin inhibitors should not be used under occlusion (bandages and dressings) for treating atopic eczema in children without specialist dermatological advice.

1.5.4.8 For facial atopic eczema in children that requires long-term or frequent use of mild topical corticosteroids, consider stepping up treatment to topical calcineurin inhibitors.

### **1.5.5 Dry bandages and medicated dressings including wet wrap therapy**

1.5.5.1 Occlusive medicated dressings and dry bandages should not be used to treat infected atopic eczema in children.

1.5.5.2 Localised medicated dressings or dry bandages can be used with emollients as a treatment for areas of chronic lichenified (localised skin thickening) atopic eczema in children.

1.5.5.3 Localised medicated dressings or dry bandages with emollients and topical corticosteroids can be used for short-term treatment of flares (7–14 days) or areas of chronic lichenified atopic eczema in children.

1.5.5.4 Whole-body (limbs and trunk) occlusive dressings (including wet wrap therapy) and whole-body dry bandages (including tubular bandages and garments) should not be used as first-line treatment for atopic eczema in children and should only be initiated by a healthcare professional trained in their use.

1.5.5.5 Whole-body (limbs and trunk) occlusive dressings (including wet wrap therapy) with topical corticosteroids should only be used to treat atopic eczema in children for 7–14 days (or for longer with specialist dermatological advice), but can be continued with emollients alone until the atopic eczema is controlled.

## **1.5.6 Antihistamines**

- 1.5.6.1 Oral antihistamines should not be used routinely in the management of atopic eczema in children.
- 1.5.6.2 Healthcare professionals should offer a 1-month trial of a non-sedating antihistamine to children with severe atopic eczema or children with mild or moderate atopic eczema where there is severe itching or urticaria. Treatment can be continued, if successful, while symptoms persist, and should be reviewed every 3 months.
- 1.5.6.3 Healthcare professionals should offer a 7–14 day trial of an age-appropriate sedating antihistamine to children aged 6 months or over during an acute flare of atopic eczema if sleep disturbance has a significant impact on the child or parents or carers. This treatment can be repeated during subsequent flares if successful.

## **1.5.7 Treatments for infections**

- 1.5.7.1 Children with atopic eczema and their parents or carers should be offered information on how to recognise the symptoms and signs of bacterial infection with staphylococcus and/or streptococcus (weeping, pustules, crusts, atopic eczema failing to respond to therapy, rapidly worsening atopic eczema, fever and malaise). Healthcare professionals should provide clear information on how to access appropriate treatment when a child's atopic eczema becomes infected.
- 1.5.7.2 Children with atopic eczema and their parents or carers should be informed that they should obtain new supplies of topical atopic eczema medications after treatment for infected atopic eczema because products in open containers can become contaminated with microorganisms and act as a source of infection.
- 1.5.7.3 Healthcare professionals should only take swabs from infected lesions of atopic eczema in children if they suspect microorganisms

other than *Staphylococcus aureus* to be present, or if they think antibiotic resistance is relevant.

- 1.5.7.4 Systemic antibiotics that are active against *Staphylococcus aureus* and streptococcus should be used to treat widespread bacterial infections of atopic eczema in children for 1–2 weeks according to clinical response.
- 1.5.7.5 Flucloxacillin should be used as the first-line treatment for bacterial infections in children with atopic eczema for both *Staphylococcus aureus* and streptococcal infections. Erythromycin should be used in children who are allergic to flucloxacillin or in the case of flucloxacillin resistance. Clarithromycin should be used if erythromycin is not well tolerated.
- 1.5.7.6 The use of topical antibiotics in children with atopic eczema, including those combined with topical corticosteroids, should be reserved for cases of clinical infection in localised areas and used for no longer than 2 weeks.
- 1.5.7.7 Antiseptics such as triclosan or chlorhexidine should be used, at appropriate dilutions, as adjunct therapy to decrease bacterial load in children who have recurrent infected atopic eczema. Long-term use should be avoided.
- 1.5.7.8 Healthcare professionals should consider infection with herpes simplex (cold sore) virus if a child's infected atopic eczema fails to respond to treatment with antibiotics and an appropriate topical corticosteroid.
- 1.5.7.9 If a child with atopic eczema has a lesion on the skin suspected to be herpes simplex virus, treatment with oral aciclovir should be started even if the infection is localised.
- 1.5.7.10 If eczema herpeticum (widespread herpes simplex virus) is suspected in a child with atopic eczema, treatment with systemic

aciclovir should be started immediately and the child should be referred for same-day specialist dermatological advice. If secondary bacterial infection is also suspected, treatment with appropriate systemic antibiotics should also be started.

1.5.7.11 If eczema herpeticum involves the skin around the eyes, the child should be treated with systemic aciclovir and should be referred for same-day ophthalmological and dermatological advice.

1.5.7.12 Children with atopic eczema and their parents or carers should be offered information on how to recognise eczema herpeticum. Signs of eczema herpeticum are:

- areas of rapidly worsening, painful eczema
- clustered blisters consistent with early-stage cold sores
- punched-out erosions (circular, depressed, ulcerated lesions) usually 1–3 mm that are uniform in appearance (these may coalesce to form larger areas of erosion with crusting)
- possible fever, lethargy or distress.

## **1.5.8 Phototherapy and systemic treatments**

1.5.8.1 Healthcare professionals should consider phototherapy or systemic treatments for the treatment of severe atopic eczema in children when other management options have failed or are inappropriate and where there is a significant negative impact on quality of life. Treatment should be undertaken only under specialist dermatological supervision by staff who are experienced in dealing with children.

1.5.8.2 Phototherapy or systemic treatments should only be initiated in children with atopic eczema after assessment and documentation of severity of atopic eczema and quality of life (see 1.2.1.1).

## **1.5.9 Complementary therapies**

1.5.9.1 Children with atopic eczema and their parents or carers should be informed that the effectiveness and safety of complementary therapies such as homeopathy, herbal medicine, massage and food supplements for the management of atopic eczema have not yet been adequately assessed in clinical studies.

1.5.9.2 Children with atopic eczema and their parents or carers should be informed that:

- they should be cautious with the use of herbal medicines in children and be wary of any herbal product that is not labelled in English or does not come with information about safe usage<sup>4</sup>
- topical corticosteroids are deliberately added to some herbal products intended for use in children with atopic eczema
- liver toxicity has been associated with the use of some Chinese herbal medicines intended to treat atopic eczema.

1.5.9.3 Children with atopic eczema and their parents or carers should be asked to inform their healthcare professionals if they are using or intend to use complementary therapies.

1.5.9.4 Children with atopic eczema and their parents or carers should be informed that if they plan to use complementary therapies, they should keep using emollients as well.

1.5.9.5 Children with atopic eczema and their parents or carers should be advised that regular massage with emollients may improve the atopic eczema.

## **1.6 Education and adherence to therapy**

1.6.1.1 Healthcare professionals should spend time educating children with atopic eczema and their parents or carers about atopic eczema and

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<sup>4</sup> See 'Using herbal medicines: advice to consumers'. July 2006, MHRA, available at <http://www.mhra.gov.uk/>

its treatment. They should provide information in verbal and written forms, with practical demonstrations, and should cover:

- how much of the treatments to use
- how often to apply treatments
- when and how to step treatment up or down
- how to treat infected atopic eczema.

This should be reinforced at every consultation, addressing factors that affect adherence.

1.6.1.2 When discussing treatment options with children with atopic eczema and their parents and carers, healthcare professionals should tailor the information they provide to suit the child's cultural practices relating to skin care (including oiling the skin) and the way they bathe.

1.6.1.3 Healthcare professionals should inform children with atopic eczema and their parents or carers that atopic eczema may temporarily cause the skin to become lighter or darker.

## **1.7 *Indications for referral***

1.7.1.1 Immediate (same-day) referral for specialist dermatological advice is recommended if eczema herpeticum is suspected (see 1.5.7.10 and 1.5.7.11 for details).

1.7.1.2 Urgent (within 2 weeks) referral for specialist dermatological advice is recommended for children with atopic eczema if:

- the atopic eczema is severe and has not responded to optimum topical therapy after 1 week
- treatment of bacterially infected atopic eczema has failed.

- 1.7.1.3 Referral for specialist dermatological advice is recommended for children with atopic eczema if:
- the diagnosis is, or has become, uncertain
  - management has not controlled the atopic eczema satisfactorily based on a subjective assessment by the child, parent or carer (for example, the child is having 1–2 weeks of flares per month or is reacting adversely to many emollients)
  - atopic eczema on the face has not responded to appropriate treatment
  - the child or parent/carer may benefit from specialist advice on treatment application (for example, bandaging techniques)
  - contact allergic dermatitis is suspected (for example, persistent atopic eczema or facial, eyelid or hand atopic eczema)
  - the atopic eczema is giving rise to significant social or psychological problems for the child or parent/carer (for example, sleep disturbance, poor school attendance)
  - atopic eczema is associated with severe and recurrent infections, especially deep abscesses or pneumonia.
- 1.7.1.4 Children with atopic eczema that has responded to optimum management but for whom the impact of the atopic eczema on quality of life and psychosocial wellbeing has not improved should be referred for psychological advice.
- 1.7.1.5 Children with moderate or severe atopic eczema and suspected food allergy should be referred for specialist investigation and management of the atopic eczema and allergy.
- 1.7.1.6 Children with atopic eczema who fail to grow at the expected growth trajectory, as reflected by UK growth charts, should be referred for specialist advice relating to growth.

## 2 Notes on the scope of the guidance

NICE guidelines are developed in accordance with a scope that defines what the guideline will and will not cover. The scope of this guideline is available from <http://guidance.nice.org.uk/page.aspx?o=289564>

The guideline covers children from birth up to the age of 12 years presenting with atopic eczema. It does not cover children with infantile seborrhoeic eczema, juvenile plantar dermatosis, primary irritant and allergic contact dermatitis, napkin dermatitis, pompholyx, or photosensitive eczemas, except when these conditions occur in association with atopic eczema.

### **How this guideline was developed**

NICE commissioned the National Collaborating Centre for Women's and Children's Health to develop this guideline. The Centre established a Guideline Development Group (see appendix A), which reviewed the evidence and developed the recommendations. An independent Guideline Review Panel oversaw the development of the guideline (see appendix B).

There is more information in the booklet: 'The guideline development process: an overview for stakeholders, the public and the NHS' (third edition, published April 2007), which is available from [www.nice.org.uk/guidelinesprocess](http://www.nice.org.uk/guidelinesprocess) or by telephoning 0870 1555 455 (quote reference N1233).

### **3 Implementation in the NHS**

The Healthcare Commission assesses the performance of NHS organisations in meeting core and developmental standards set by the Department of Health in 'Standards for better health', issued in July 2004. Implementation of clinical guidelines forms part of the developmental standard D2. Core standard C5 says that national agreed guidance should be taken into account when NHS organisations are planning and delivering care.

NICE has developed tools to help organisations implement this guidance (listed below). These are available on our website ([www.nice.org.uk/CG057](http://www.nice.org.uk/CG057)).

- Slides highlighting key messages for local discussion.
- Costing tools:
  - Costing report to estimate the national savings and costs associated with implementation
  - Costing template to estimate the local costs and savings involved.
- Implementation advice on how to put the guidance into practice and national initiatives which support this locally.
- Audit criteria to monitor local practice.

## **4 Research recommendations**

The Guideline Development Group has made the following recommendations for research, based on its review of evidence, to improve NICE guidance and patient care in the future. The Guideline Development Group's full set of research recommendations is detailed in the full guideline (see section 5).

### **4.1 *Infant feeding***

What is the optimal feeding regimen in the first year of life for children with established atopic eczema?

#### **Why this is important**

Dietary manipulation has the potential to decrease disease severity in children with proven food allergy. A study is needed to explore the potential benefits and harms of delaying the introduction of allergenic foods such as milk, egg and peanuts in infants with early signs of atopic eczema to assess the potential impact on atopic eczema severity and the subsequent development of food allergy, asthma and allergic rhinitis.

### **4.2 *Prevention of flares***

Which are the best, most cost-effective treatment strategies for managing and preventing flares in children with atopic eczema?

#### **Why this is important**

Atopic eczema is usually an episodic disease of exacerbation (flares) and remissions, except for severe cases where it may be continuous (2–6% of cases). Flares may occur as frequently as two or three times per month and have a very negative effect on quality of life. They are time consuming and expensive to treat.

There is limited evidence suggesting that strategies to prevent flares can reduce the number, frequency and severity of flares and the amount of treatment required. Identifying good strategies would improve patient care and quality of life, and free up NHS resources.

Strategies that could be considered in this research include continuous versus intermittent topical treatments or combinations of products such as topical corticosteroids and topical calcineurin inhibitors.

### **4.3 *Early intervention***

What effect does improving the control of atopic eczema in the first year of life have on the long-term control and severity of atopic eczema and the subsequent development and severity of food allergy, asthma and allergic rhinitis?

#### **Why this is important**

Uncontrolled atopic eczema in children may progress to chronic disease involving the production of auto-immune antibodies to the skin. Early intervention to restore the defective skin barrier might alter the course of atopic eczema by preventing allergen penetration. A systematic review is needed to evaluate the available evidence on these factors. The results should feed in to the design of a large randomised controlled trial investigating the long-term effect of controlling atopic eczema in the first year of life. Early effective treatment to control atopic eczema and the development of other atopic conditions would be extremely cost effective, have a major impact on service provision and improve the quality of life of children with atopic eczema and their parents and carers.

### **4.4 *Adverse effects of topical corticosteroids***

What are the long-term effects (when used for between 1 and 3 years) of typical use of topical corticosteroids in children with atopic eczema?

#### **Why this is important**

Around 70–80% of parents and carers of children with atopic eczema are concerned about the side effects of topical corticosteroids and this often prevents adherence to therapy (at least 25% of parents and carers report non-usage because of anxiety). Despite the fact that topical corticosteroids have been in clinical use since 1962, there are limited data on their long-term effects (greater than a few weeks) on skin thickness, hypothalamic–pituitary–adrenal (HPA) axis suppression and other side effects.

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Clinical consensus suggests that long-term usage, within clinically recommended dosages, appears to be safe; research confirming this would greatly improve adherence to therapy and clinical outcomes, and reduce parental anxiety. The research could include comparisons between children who use topical corticosteroids for shorter and longer periods, and with those who use other topical preparations such as emollients and topical calcineurin inhibitors.

#### **4.5      *Education and adherence to therapy***

How effective and cost effective are different models of educational programmes in the early management of atopic eczema in children, in terms of improving adherence to therapy and patient outcomes such as disease severity and quality of life?

##### **Why this is important**

Atopic eczema is a common childhood disease affecting one in five children in the UK. Effective therapy improves quality of life for children with atopic eczema and their parents and carers, and can be provided for over 80% of children with atopic eczema in a primary care setting. It is known that a lack of education about therapy leads to poor adherence, and consequently to treatment failure.

## **5            Other versions of this guideline**

### **5.1        *Full guideline***

The full guideline, 'Atopic eczema in children: management of atopic eczema in children from birth up to the age of 12 years' contains details of the methods and evidence used to develop the guideline. It is published by the National Collaborating Centre for Women's and Children's Health, and is available from [www.ncc-wch.org.uk](http://www.ncc-wch.org.uk), our website ([www.nice.org.uk/CG057fullguideline](http://www.nice.org.uk/CG057fullguideline)) and the National Library for Health ([www.nlh.nhs.uk](http://www.nlh.nhs.uk)).

## **5.2 Quick reference guide**

A quick reference guide for healthcare professionals is also available from our website ([www.nice.org/CG057quickrefguide](http://www.nice.org/CG057quickrefguide)).

For printed copies, phone the NHS Response Line on 0870 1555 455 (quote reference number N1427).

## **5.3 'Understanding NICE guidance'**

Information for children with atopic eczema and their parents and carers is available from [www.nice.org.uk/CG057publicinfo](http://www.nice.org.uk/CG057publicinfo)

For printed copies, phone the NHS Response Line on 0870 1555 455 (quote reference number N1428).

## **6 Related NICE guidance**

- Frequency of application of topical corticosteroids for atopic eczema. NICE technology appraisal 81 (2004). Available from [www.nice.org.uk/TA081](http://www.nice.org.uk/TA081)
- Tacrolimus and pimecrolimus for atopic eczema. NICE technology appraisal 82 (2004). Available from [www.nice.org.uk/TA082](http://www.nice.org.uk/TA082)

## **7 Updating the guideline**

NICE clinical guidelines are updated as needed so that recommendations take into account important new information. We check for new evidence 2 and 4 years after publication, to decide whether all or part of the guideline should be updated. If important new evidence is published at other times, we may decide to do a more rapid update of some recommendations.

## **Appendix A: The Guideline Development Group**

### **Denise Carr**

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Medical Writer and Independent Pharmaceutical Consultant

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## **Appendix B: The Guideline Review Panel**

The Guideline Review Panel is an independent panel that oversees the development of the guideline and takes responsibility for monitoring adherence to NICE guideline development processes. In particular, the panel ensures that stakeholder comments have been adequately considered and responded to. The Panel includes members from the following perspectives: primary care, secondary care, lay, public health and industry.

### **Paul Ash**

Deputy Medical Director, Health Commission

### **Ailsa Donnelly**

Patient Representative

### **Jon Hopper**

Medical Director (Northern Europe), ConvaTec Ltd

### **John Hyslop**

Consultant Radiologist, Royal Cornwall Hospital NHS Trust

## **Appendix C: The algorithm**

There is a care pathway for atopic eczema in children on pages 10–11 of the quick reference guide at [www.nice.org.uk/CG057](http://www.nice.org.uk/CG057).