

Atopic eczema in children: management of atopic eczema in children from birth up to the age of 12 years

NICE guideline

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If you wish to comment on this version of the guideline, please be aware that all the supporting information and evidence is contained in the full version. Recommendations 1.5.3.2, 1.5.3.4, 1.5.4.1, 1.5.4.2, 1.5.4.3, 1.5.4.4 and 1.5.4.5 are taken from existing NICE guidance and are therefore **not** being consulted on.

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Introduction

Atopic eczema (atopic dermatitis) is a chronic inflammatory pruritic (itchy) skin condition that develops in early childhood (80% before the age of 2 years) in the majority of cases and follows a remitting and relapsing course. It appears to be exacerbated by a large number of trigger factors, including irritants and allergens. Although the majority of cases will clear during childhood a minority persist into adulthood and a great proportion will go on to develop asthma and/or perennial rhinitis (hay fever), the so-called 'atopic march'. Although atopic eczema is often not thought of as a serious medical condition it does have a significant impact on quality of life.

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 to children and their families/caregivers about the condition.

Patient-centred care

This guideline offers best practice advice on the care of children with atopic eczema.

Treatment and care should take into account the child's individual needs and preferences. Children with atopic eczema should have the opportunity to make informed decisions about their care and treatment, but this does depend on their age and capacity to make decisions. Where a child is not old enough or does not have the capacity to make decisions, healthcare professionals should follow the Department of Health guidelines – 'Reference guide to consent for examination or treatment' (2001) (available from www.dh.gov.uk). From April 2007 healthcare professionals will need to follow a code of practice accompanying the Mental Capacity Act (summary available from www.dca.gov.uk/menincap/bill-summary.htm).

Good communication between healthcare professionals and children with atopic eczema and their parents and/or carers is essential. It should be supported by the provision of evidence-based written information offered in a form that is tailored to the needs of the individual. The treatment, care and information provided 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, carers and relatives should have the opportunity to be involved in decisions about the child's care and treatment, unless the child specifically excludes them.

Parents, carers and relatives 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

- A global assessment of a child's atopic eczema should be undertaken at each consultation giving consideration to both the severity of the atopic eczema and child's quality of life. A global assessment of severity should categorise a child's atopic eczema into one of the following four categories:
 - clear — no evidence of atopic eczema,
 - mild — areas of dry skin, infrequent itching, little impact on everyday activities, no impact on sleep,
 - moderate — areas of dry skin, frequent itching, redness, excoriation, localised thickening, moderate impact on everyday activities, and disturbed sleep,
 - severe — widespread areas of dry skin, incessant itching, redness, excoriation, extensive thickening, bleeding, oozing, cracking, weeping, flaking, hyperpigmentation (darkening), preventing sleep and everyday activities. Localised severe atopic eczema can also impact on quality of life. **1.2.1**

Identification and management of trigger factors

- A clinical assessment of a child with atopic eczema should seek to identify potential trigger factors including irritants:
 - Food allergy should be considered in children who have reacted previously to a food with immediate symptoms or in infants and young children with moderate to severe atopic eczema that has not been controlled by optimum management, particularly if associated with gut dysmotility or failure to thrive.
 - Airborne allergens should be considered in children older than 3 years with facial and periorbital atopic eczema, with seasonal flares of their atopic eczema or with associated asthma and rhinitis. **1.4.1**

Treatment

Stepped approach to management

- A stepped approach to management should be used for children with atopic eczema taking into account the severity of and degree of control of the atopic eczema, possible trigger factors and the effect on quality of life of the child and their family/caregivers. Emollients should be used alone or in combination with one or more of the following: topical corticosteroids, topical calcineurin inhibitors, bandages or medicated dressings, antihistamines, appropriate treatment for infected atopic eczema, and in some severe cases, phototherapy and systemic treatments. Treatment can be stepped up or down according to severity and clinical response. **1.5.1.1**
- Children and their caregivers should be given advice on how to recognise flares of atopic eczema (increased dryness, itching, redness, swelling and general irritability) and be empowered to treat them. If signs or symptoms of a flare appear, treatment with topical corticosteroids should be stepped up until the atopic eczema clears and continued for approximately 2 days after symptoms subside. Treatment should then be stepped down to previous maintenance therapy. **1.5.1.2**

Emollients

- Children with atopic eczema should be offered a choice of unperfumed emollients to use on a daily basis, suited to their needs and preferences, for moisturising, washing and bathing. This may include a combination of products or one product for all purposes. Emollients should be:
 - prescribed in large quantities (250 g to 500 g weekly)
 - applied as liberally and frequently as possible to affected and unaffected skin, even when the atopic eczema is clear
 - increased at the first sign of dry skin
 - continued with other topical therapies and alone when atopic eczema clears
 - easily available to use at nursery, pre-school or school. **1.5.2.1**

Topical corticosteroids

- Healthcare professionals should discuss the benefits and harms of treatment with topical corticosteroids emphasising that benefits outweigh possible harms when they are applied correctly. 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 in the following manner:
 - mild potency for mild eczema
 - moderate potency for moderate eczema
 - potent for severe eczema
 - do not use very potent preparations in children without specialist advice
 - restrict treatment for the face to mild potency
 - short-term use of moderate or potent preparations in vulnerable sites such as axillae and groin. **1.5.3.1**

Dry bandages and medicated dressings including wet wrap therapy

- Whole-body (limbs and trunk) medicated dressings (including wet wrap therapy) and dry bandages 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. **1.5.5.3**

Treatment of infections

- Children with atopic eczema and their caregivers should be given advice on how to recognise the symptoms and signs of secondary bacterial infection with staphylococcus and/or streptococcus (weeping, pustules, crusts, rapidly worsening atopic eczema, fever, malaise and atopic eczema failing to respond to therapy). They should have a written care plan of how to access appropriate treatment when a child's atopic eczema becomes infected. **1.5.7.1**
- Children with atopic eczema and their caregivers should be given advice on how to recognise eczema herpeticum which may be associated with pyrexia, misery or lethargy. Signs of eczema herpeticum are:
 - clustered blisters consistent with cold sore (early stage) which may be painful

- umbilicated (depressed centres) blisters
- punched-out erosions that are uniform in appearance, usually of 1-3 mm and may coalesce in areas of erosion.

Treatment with systemic aciclovir should be started immediately and the child should be referred immediately (same day) for specialist advice.

1.5.7.11

Education and adherence to therapy

- Education about childhood atopic eczema should include information, both verbal and written, with practical demonstration of the correct use of treatments, medicated dressings and bandages including:
 - the quantities to be used
 - the frequency of application
 - how to step treatment up or down
 - how to treat infected atopic eczema.

This should be reinforced at every consultation, checking on factors that affect adherence. **1.6.1**

1 Guidance

The following guidance is based on the best available evidence. The full guideline (access information will be provided in the published NICE guideline) gives details of the methods and the evidence used to develop the guidance (see section 5 for details).

The term 'caregiver' has been used in the recommendations to represent parents, guardians, siblings and any other person with a caring responsibility for a child with atopic eczema.

1.1 Diagnosis

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

- visible flexural dermatitis (involvement of 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 infants,
- history of flexural dermatitis, or involvement of cheeks and/or extensor areas in infants,
- history of dry skin in the last 12 months,
- personal history of asthma or hay fever (or history of atopic disease in a first degree relative in children aged under 4 years),
- onset under the age of 2 years (this criterion should not be used in children aged under 4 years).

Healthcare professionals should be aware that these criteria have not been fully validated in all ethnic groups.

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

1.2.1 A global assessment of a child's atopic eczema should be undertaken at each consultation giving consideration to both the severity of the atopic eczema and child's quality of life. A global assessment of severity should categorise a child's atopic eczema into one of the following four categories:

- clear — no evidence of atopic eczema,
- mild — areas of dry skin, infrequent itching, little impact on everyday activities, no impact on sleep,
- moderate — areas of dry skin, frequent itching, redness, excoriation, localised thickening, moderate impact on everyday activities, and disturbed sleep,
- severe — widespread areas of dry skin, incessant itching, redness, excoriation, extensive thickening, bleeding, oozing, cracking, weeping, flaking, hyperpigmentation (darkening), preventing sleep and everyday activities. Localised severe atopic eczema can also impact on quality of life.

1.2.2 A global assessment of psychological and psychosocial wellbeing and quality of life should take into account the impact of atopic eczema on the caregivers as well as the child.

1.2.3 Healthcare professionals may consider using additional measures to assess severity and quality of life:

- Visual analogue scales (0-10) capturing the child's and or caregiver's assessment of severity, itch and sleep loss over the previous 3 days and nights
- A validated tool:
 - Patient-Oriented Eczema Measure (POEM) for severity
(available at <http://www.nottingham.ac.uk/dermatology/POEM.htm>),

- Children's Dermatology Quality of Life Index (CDLQI), Infant's Dermatitis Quality of Life Index (IDQOL) or Dermatitis Family Impact Questionnaire (DFI) for quality of life (available at <http://www.dermatology.org.uk>).

1.3 *Epidemiology*

- 1.3.1 Children with atopic eczema and their families/caregivers should be informed that the condition frequently improves with time, but that not all children will grow out of atopic eczema and some may experience exacerbations later in teenage or adult life.
- 1.3.2 Children with atopic eczema and their families/caregivers should be informed that there are epidemiological associations between atopic eczema, asthma, hay fever and food allergies.

1.4 *Identification and management of trigger factors*

- 1.4.1 A clinical assessment of a child with atopic eczema should seek to identify potential trigger factors including irritants:
- Food allergy should be considered in children who have reacted previously to a food with immediate symptoms or in infants and young children with moderate to severe atopic eczema that has not been controlled by optimum management, particularly if associated with gut dysmotility or failure to thrive.
 - Airborne allergens should be considered in children older than 3 years with facial and periorbital atopic eczema, with seasonal flares of their atopic eczema or with associated asthma and rhinitis.

- 1.4.2 Children with mild atopic eczema and their caregivers should be informed that the majority of mild cases of atopic eczema do not require clinical testing for allergies.
- 1.4.3 In bottle-fed infants less than 6 months with widespread atopic eczema, a 6-8 week trial of an extensively hydrolysed formula or amino acid formula should be offered in place of cow's milk formula.
- 1.4.4 Diets based on soya protein or unmodified proteins of other species' milk (e.g. goat's milk, sheep's milk) or so called partially hydrolysed formulas should not be used in infants with atopic eczema for the treatment of suspected cow's milk allergy.
- 1.4.5 Specialist dietary advice should be sought for children with atopic eczema who are placed on a cow's milk free diet for more than 8 weeks.
- 1.4.6 Women who are breastfeeding children with atopic eczema should be informed that it is not known whether altering the mother's diet is effective in reducing the severity of the condition.
- 1.4.7 Children with atopic eczema and their caregivers should be informed that there is no evidence that evaluates the effectiveness of avoidance of the following in the management of established atopic eczema: hard water, extremes of temperature or humidity, or stress.
- 1.4.8 Children with atopic eczema and their caregivers should be advised not to undergo high street and internet allergy testing because there is no evidence of its value in the management of atopic eczema.

1.5 Treatment

1.5.1 Stepped approach to management

1.5.1.1 A stepped approach to management should be used for children with atopic eczema taking into account the severity of and degree of control of the atopic eczema, possible trigger factors and the effect on quality of life of the child and their family/caregivers. Emollients should be used alone or in combination with one or more of the following: topical corticosteroids, topical calcineurin inhibitors, bandages or medicated dressings, antihistamines, appropriate treatment for infected atopic eczema, and in some severe cases, phototherapy and systemic treatments. Treatment can be stepped up or down according to severity and clinical response.

1.5.1.2 Children and their caregivers should be given advice on how to recognise flares of atopic eczema (increased dryness, itching, redness, swelling and general irritability) and be empowered to treat them. If signs or symptoms of a flare appear, treatment with topical corticosteroids should be stepped up until the atopic eczema clears and continued for approximately 2 days after symptoms subside. Treatment should then be stepped down to previous maintenance therapy.

1.5.2 Emollients

1.5.2.1 Children with atopic eczema should be offered a choice of unperfumed emollients to use on a daily basis, suited to their needs and preferences, for moisturising, washing and bathing. This may include a combination of products or one product for all purposes. Emollients should be:

- prescribed in large quantities (250 g to 500 g weekly)
- applied as liberally and frequently as possible to affected and unaffected skin, even when the atopic eczema is clear

- increased at the first sign of dry skin
 - continued with other topical therapies and alone when atopic eczema clears
 - easily available to use at nursery, pre-school or school.
- 1.5.2.2 Bath emollients should be prescribed for atopic eczema in children when there is concern that too little emollient is being applied topically.
- 1.5.2.3 Children with atopic eczema and their caregivers should be informed that the quantity and frequency of use of emollients should far exceed that of other treatments.
- 1.5.2.4 Children with atopic eczema and their caregivers should be offered practical demonstrations of how to apply emollients, including methods for smoothing emollients onto the skin, rather than rubbing them in.
- 1.5.2.5 If a particular emollient causes irritation or is not acceptable to the child, an alternative emollient should be offered.
- 1.5.2.6 Repeat prescribing of individual products and combinations of products should be reviewed at least once a year to ensure that therapy remains optimal.
- 1.5.2.7 Emollients and/or emollient wash products should be used instead of soaps and detergent-based products such as bubble baths and shower gels.
- 1.5.2.8 Emollients should be used instead of shampoos for infants with atopic eczema. Where shampoo is used for older children, washing the hair in the bath should be avoided.
- 1.5.2.9 Where 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 a short interval

between applications. Personal preference 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 emphasising that benefits outweigh possible harms when they are applied correctly. 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 in the following manner:

- mild potency for mild atopic eczema
- moderate potency for moderate atopic eczema
- potent for severe atopic eczema
- do not use very potent preparations in children without specialist advice
- restrict treatment for the face to mild potency
- short-term use of moderate or potent preparations in vulnerable sites such as axillae and groin.

1.5.3.2 Topical corticosteroids for atopic eczema should be prescribed for application only once or twice daily.¹

1.5.3.3 Children with atopic eczema and their caregivers should be informed that topical corticosteroids and topical calcineurin inhibitors should be applied only to areas of active atopic eczema, which may include areas of broken skin.

1.5.3.4 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 These recommendations are taken 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.

- 1.5.3.5 Where adherence to a course of a mild or moderately potent topical corticosteroid has not controlled atopic eczema in a child aged 12 months or older within 7 to 14 days, secondary bacterial or viral infection should be excluded and a potent topical corticosteroid should be tried (excluding the face and neck) for a maximum of 7 to 14 days. If this treatment does not control the atopic eczema, review the diagnosis and refer for specialist advice.
- 1.5.3.6 Only topical corticosteroids of mild potency should be used on the face and neck unless directed otherwise by a specialist.
- 1.5.3.7 Potent topical corticosteroids should not be used in children aged under 12 months without specialist supervision.
- 1.5.3.8 Very potent topical corticosteroids should not be used in children under 12 years of age without specialist supervision.
- 1.5.3.9 When labelling a topical corticosteroid preparation, the label should specify the potency class and it should be applied to the container (e.g. the tube), not the outer packaging.
- 1.5.3.10 In children with frequent flares of atopic eczema, maintenance treatment with topical corticosteroids for 2 days per week should be considered as a strategy for flare prevention instead of treatment of flares as they arise.
- 1.5.3.11 If tachyphylaxis to a topical corticosteroid is suspected in children with atopic eczema, an alternative topical corticosteroid of the same potency should be considered as a possible alternative to stepping up treatment.

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.²
- 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, where there is a serious risk of important adverse effects from further topical corticosteroid use, particularly irreversible skin atrophy.
- 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 to 16 years that has not been controlled by topical corticosteroids, 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 Topical calcineurin inhibitors should not be used under occlusion for treating atopic eczema in children without specialist advice.

² These recommendations 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.

1.5.4.7 For repeated facial atopic eczema in children requiring long-term or frequent use of 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 in the treatment of infected atopic eczema in children.

1.5.5.2 Localised medicated dressings or dry bandages used with emollients and with or without topical corticosteroids should be offered to children as treatment for areas of chronic lichenified atopic eczema and for short-term use to treat flares.

1.5.5.3 Whole-body (limbs and trunk) medicated dressings (including wet wrap therapy) and dry bandages 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.

1.5.5.4 Whole-body occlusive dressings, including wet wrap therapy, with or without topical corticosteroids should only be used for up to 7 days but can be continued with emollients alone if required until the atopic eczema is controlled.

1.5.6 Antihistamines and other antipruritics

1.5.6.1 Oral antihistamines are not routinely recommended in the management of atopic eczema in children. However, a trial of a non-sedating antihistamine should be offered to children with severe atopic eczema or where there is an element of urticaria or severe pruritus, and a trial of an age-appropriate sedating antihistamine should be offered in children over the age of 6 months where sleep disturbance has a significant impact on the child and family/caregivers.

1.5.7 Treatments for infections

- 1.5.7.1 Children with atopic eczema and their caregivers should be given advice on how to recognise the symptoms and signs of secondary bacterial infection with staphylococcus and/or streptococcus (weeping, pustules, crusts, rapidly worsening atopic eczema, fever, malaise and atopic eczema failing to respond to therapy). They should have a written care plan of how to access appropriate treatment when a child's atopic eczema becomes infected.
- 1.5.7.2 Swabs from infected lesions of atopic eczema in children should be taken only if microorganisms other than *Staphylococcus aureus* are suspected or if antibiotic resistance is thought to be important.
- 1.5.7.3 Systemic antibacterial agents that are active against *S. aureus* and streptococcus should be used to treat widespread bacterial infections of atopic eczema in children for 1-2 weeks.
- 1.5.7.4 Topical antibiotics, including those combined with topical corticosteroids, should be used only in cases of overt clinical infection for a maximum of 2 weeks to limit the emergence of resistant strains of microorganisms.
- 1.5.7.5 Children with atopic eczema and their caregivers should be informed that products in open containers can be contaminated with microorganisms and act as a source of infection. New supplies should be obtained at the end of treatment for infected atopic eczema.
- 1.5.7.6 In cases of recurrent infected atopic eczema antiseptics such as triclosan or chlorhexidine can be used as an adjunct therapy for decreasing bacterial load.
- 1.5.7.7 Flucloxacillin should be used as first-line treatment for bacterial infections in children with atopic eczema for both *S. aureus* and streptococcal infections. In the case of allergy to flucloxacillin or

flucloxacillin resistance, erythromycin should be used. If erythromycin is not well tolerated, clarithromycin can be used.

- 1.5.7.8 If a child with atopic eczema has a lesion infected with herpes simplex (cold sore), treatment with oral aciclovir should be commenced even if the infection is localised.
- 1.5.7.9 If eczema herpeticum (widespread herpes simplex virus) involves the skin around the eyes, the child should be treated with oral aciclovir and should be immediately (same day) referred for ophthalmological and dermatological advice.
- 1.5.7.10 Infection with herpes simplex virus should be considered if children with infected atopic eczema fail to respond to treatment antibiotic treatment.
- 1.5.7.11 Children with atopic eczema and their caregivers should be given advice on how to recognise eczema herpeticum which may be associated with pyrexia, misery or lethargy. Signs of eczema herpeticum are:
- clustered blisters consistent with cold sore (early stage) which may be painful
 - umbilicated (depressed centres) blisters
 - punched-out erosions that are uniform in appearance, usually of 1-3 mm and may coalesce in areas of erosion.

Treatment with systemic aciclovir should be started immediately and the child should be referred immediately (same day) for specialist advice.

1.5.8 Phototherapy and systemic treatments

- 1.5.8.1 Phototherapy or systemic treatments should be considered for the treatment of severe atopic eczema in children when all other management options have been exhausted. Treatment should be undertaken only under specialist supervision.

1.5.8.2 Phototherapy or systemic treatments should only be initiated in children with atopic eczema following formal assessment and documentation of severity and quality of life.

1.5.9 Complementary therapies

1.5.9.1 Children with atopic eczema and their caregivers should be informed that:

- caution should be taken about the use of herbal medicines in children and that they should be wary of any herbal product that is not labelled in English or does not have information about safe usage.³
- topical corticosteroids are deliberately added to some herbal products intended for use in children with atopic eczema³
- liver toxicity has been associated with the use of some Chinese herbal medicines intended to treat atopic eczema.

1.5.9.2 Children with atopic eczema and their caregivers should be asked to inform their healthcare professionals if they intend to use complementary therapies.

1.5.9.3 Children with atopic eczema and their caregivers 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.

1.5.9.4 Children with atopic eczema and their caregivers should be informed that if they intend to use complementary therapies, they should continue to use emollients in addition.

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

³ See 'Using herbal medicines: advice to consumers'. July 2006, MHRA, http://www.mhra.gov.uk/home/idcplg?IdcService=SS_GET_PAGE&nodeId=661

1.6 *Education and adherence to therapy*

1.6.1 Education about childhood atopic eczema should include information, both verbal and written, with practical demonstration of the correct use of treatments, medicated dressings and bandages including:

- the quantities to be used
- the frequency of application
- how to step treatment up or down
- how to treat infected atopic eczema.

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

1.6.2 When advising on therapy for atopic eczema, healthcare professionals should consider:

- the current bathing practices of the child
- providing extensive education about using emollients in instances where taking baths is not standard practice
- that some people from some ethnic groups have particularly dry skin
- that oiling the skin is common practice in some ethnic groups and that the oils used can be irritant.

1.6.3 Children and their caregivers should be informed that atopic eczema may temporarily cause both increased and decreased pigmentary skin changes.

1.7 *Indications for referral*

1.7.1 Urgent (within 2 weeks) referral for specialist dermatological advice is recommended if:

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

1.7.2 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 upon a subjective assessment by the child or parent, for example the child is experiencing 1-2 weeks of flares per month or is reacting adversely to multiple emollients
- chronic atopic eczema affecting the face has not responded to mild topical corticosteroids
- treatment of bacterially infected atopic eczema has failed
- the child or family might benefit from specialist advice on application of treatments (e.g. bandaging techniques)
- contact allergic dermatitis is suspected (e.g. persistent facial, eyelid or hand atopic eczema)
- the atopic eczema is giving rise to significant social or psychological problems (e.g. sleep disturbance, poor school attendance)
- atopic eczema is associated with severe and recurrent infections, especially deep abscesses or pneumonia.

1.7.3 Children with moderate to severe atopic eczema and suspected food allergy should be referred for specialist investigation and management of the atopic eczema and allergy.

1.7.4 Children with atopic eczema who fail to grow at the expected growth trajectory, as reflected by the UK growth charts, should be

referred for specialist advice relating to growth. Taking parental heights into consideration, children usually grow along their projected growth centile and reach puberty within a demarcated age range; deviation from this (falling across 10 centiles over a 1-2 year period, or delay in the onset of puberty – 13.5 years for girls and 14 years for boys) is an indication for referral.

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' (second edition, published April 2006), which is available from www.nice.org.uk/guidelinesprocess or by telephoning 0870 1555 455 (quote reference N****).

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.

DRAFT FOR CONSULTATION

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

[NICE to amend list as needed at time of publication]

- 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*

In infants with established eczema, what is the optimal feeding regimen in the first year of life?

Why this is important

30% of infants with atopic eczema have an associated food allergy. Dietary manipulation has the potential to improve disease severity in infants with proven food allergy. This requires allergy testing and assessment at an early stage in order to maximise outcome. A study is needed to explore the potential benefits and harms of delaying the introduction of allergenic foods such as milk, egg and peanut in infants with early signs of atopic eczema to assess the potential impact on eczema severity and the subsequent development of food allergy, asthma and rhinitis. This study will help to address hitherto unanswered questions regarding the optimal choice of formula and weaning regimen in this group of infants.

4.2 *Allergy testing*

When and how should allergy testing (skin prick tests, allergen-specific immunoglobulin E) be undertaken in different age groups of children with atopic eczema and how can the diagnostic accuracy and hence the clinical relevance be improved by using different definitions or thresholds?

Why this is important

Parents of children with atopic eczema often ask for allergy testing. However, there is confusion amongst clinicians about which tests are the most appropriate for different age groups to determine allergic responses to, for example, food or airborne allergens. Interpretation of such tests requires training and may be difficult particularly as the diagnostic accuracy is

uncertain. These tests are expensive and time-consuming and require special training. This information will enable effective and cost-effective use of scarce NHS resources.

4.3 *Prevention of flares*

Which are the best, most cost-effective treatment strategies for managing and preventing flare progression 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 (approximately 6% of cases). Flares may occur as frequently as one to two per month and have a very negative effect on quality of life. They are time consuming and expensive to treat. There are limited data to suggest 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 valuable 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.

4.4 *Early intervention*

What effect does improving the control of atopic eczema in the first year of life using a stepped combination of skin barrier repair with emollients, topical corticosteroids and topical calcineurin inhibitors 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

There is evidence to suggest that uncontrolled eczema in children may progress to chronic disease including the production of auto-immune antibodies to the skin. There is also some evidence to suggest that early control of atopic eczema may improve long-term outcome and possibly halt the atopic march. If this is the case then early effective treatment would be extremely cost effective and have a major impact on service provision and

improving the quality of life of children with atopic eczema and their parents/carers.

4.5 *Adverse effects of topical corticosteroids*

What are the long-term effects (used for between 1 and 3 years) of topical corticosteroids on children with atopic eczema on, for example, skin thickness, growth and suppression of the hypothalamic-pituitary-adrenal (HPA) axis?

Why this is important

Parental anxiety about side-effects from the use of topical corticosteroids is very high (around 70-80%) and often prevents adherence to therapy (at least 25% 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, HPA axis suppression and other side effects. Clinical consensus suggests that long-term usage, within clinically recommended dosage, appears to be safe and research confirming this would greatly improve adherence to therapy and clinical outcomes and reduce parental anxiety.

4.6 *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 UK children. It has a huge negative impact on physical morbidity and quality of life for children and their carers. Effective therapy reverses this and can be provided for over 80% in a primary care setting. It is known that adherence to therapy is poor in skin diseases and leads to failure of therapeutic response and a major factor for this is lack of education.

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 [NCC website details to be added at the time of publication], our website (www.nice.org.uk/CGXXXfullguideline) and the National Library for Health (www.nlh.nhs.uk). **[Note: these details will apply to the published full guideline.]**

5.2 *Quick reference guide*

A quick reference guide for healthcare professionals is also available from our website (www.nice.org/CGXXXquickrefguide).

For printed copies, phone the NHS Response Line on 0870 1555 455 (quote reference number NXXXXX). **[Note: these details will apply when the guideline is published.]**

5.3 *'Understanding NICE guidance'*

Information for children with atopic eczema and their parents and carers is available from www.nice.org.uk/CGXXXpublicinfo

For printed copies, phone the NHS Response Line on 0870 1555 455 (quote reference number NXXXXX). **[Note: these details will apply when the guideline is published.]**

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
- Tacrolimus and pimecrolimus for atopic eczema. NICE technology appraisal 82 (2004). Available from 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

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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.

[NICE to add]

[Name; style = Unnumbered bold heading]

[job title and location; style = NICE normal]

Appendix C: The algorithm

The algorithm (care pathway) is provided in a separate file for the stakeholder consultation.