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Psychodermatology: Paediatric Atopic Dermatitis

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About the Reviewer



Diana Purvis
MBChB (Otago),
MRCPCH (London), FRACP
Paediatrics and Dermatology.

Diana studied at Otago Medical School and firstly completed training as a paediatrician. She then worked in the Dermatology Departments at Great Ormond Street Hospital for Sick Children and University College Hospital in London and in the Dermatology Department of Auckland Hospital to obtain qualifications as a dermatologist for both adults and children. She is one of only a handful of doctors internationally to hold dual fellowships in paediatrics and dermatology.

She is a member of the NZ Dermatology Society, NZ Paediatric Society, Society for Pediatric Dermatology and medical lead of the National Network for the Treatment of Childhood Eczema. Diana divides her time between the Starship Children's Hospital and private practice.

Her areas of special interest include eczema, acne, birthmarks and genetic disorders of the skin.

This article briefly reviews psychodermatological considerations in childhood atopic dermatitis and its management, including quality of life, physical touch, and adherence to treatment.

Introduction

Atopic dermatitis (AD), or atopic eczema, is one of the most common chronic inflammatory skin disorders in childhood, affecting up to 20% of children in developed countries.¹ The prevalence of AD is lower in developing countries but is increasing.

AD is a chronic relapsing condition that is characterised by intense itching and recurrent eczematous lesions.¹ AD often begins in early childhood, with approximately 60% of cases appearing during the first year of life. Infancy and childhood are important stages in a child's social and emotional development. Indeed, the first two or three years of life are critical to brain development, including the need for tactile and psychosocial stimulation.^{2,3}

Psychodermatology

Psychodermatology addresses the link between the skin and the nervous system, which share the same embryogenic origin.^{4,5} The skin and nervous system interact via neuroendocrine and immune system mechanisms and individual behaviours, which can lead to the initiation or exacerbation of skin disorders.⁶ In this context, AD can be considered to be a psychophysiological disorder.^{4,5}

Psychodermatological problems during childhood AD are largely attributable to distress and exhaustion of both child and family, impaired social interactions, and, potentially, deterioration of the carer-child relationship.^{7,8} Indeed, severe childhood AD can manifest as a vicious cycle in which the AD causes parental distress and exhaustion and impaired parental management of the AD that in turn leads to disease exacerbation and behavioural problems in affected children.

There is evidence that AD may contribute to the difficulties of parenting leading potentially to dysfunctional child-parent relationships.⁹ The development of child behavioural problems and parenting difficulties due to childhood AD also has the potential to undermine treatment outcomes in affected children.¹⁰ Additionally, the psychosocial development of children with AD during the latter years of their childhood may be influenced by teasing, bullying, and social avoidance.^{7,11}

In summary, the psychological dimensions of AD (in both children and parents) should be considered as part of the routine management of childhood AD.⁹

Quality of life

The health-related quality of life (QOL) of children with AD and their parents is negatively affected by the condition (Figure 1), including psychological wellbeing and social functioning, in addition to physical health.¹¹⁻¹³

Sleep deprivation caused by the intense itching in children with AD leads to tiredness, mood swings, and impaired psychosocial functioning of both the child and family members, especially at school and work.¹¹⁻¹³ Distracting a child to keep them from scratching their AD lesions requires considerable effort and attention from parents.

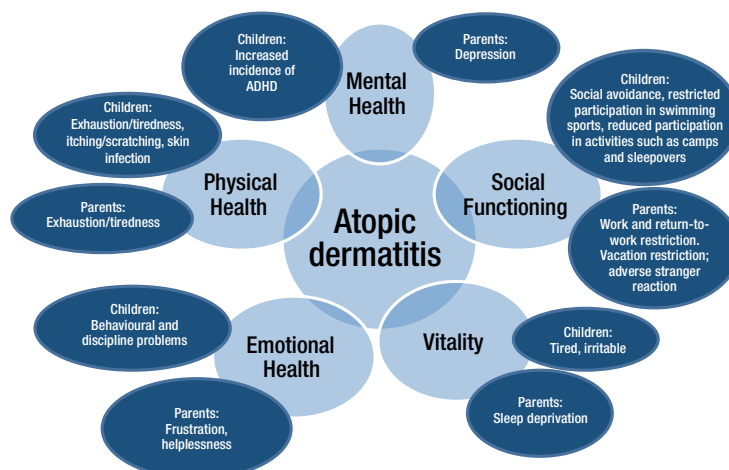


Figure 1. Summary of the negative effects of AD on the QOL of paediatric patients and their parents.^{12,13}

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Additionally, there may be changes in appearance caused by the AD, including acute lesions (appearing as diffuse erythematous patches and oozing papulovesicles) and chronic lesions (appearing as scaly patches and plaques with excoriation and lichenification).¹ Embarrassment due to visible lesions, teasing, and bullying and avoidance by their peer group can cause social isolation in children with AD and may lead to depression and/or school non-attendance and low self-esteem during their teenage years.^{11,13}

Moreover, increasing disease severity may be associated with increasing impairment of child and parent QOL (via reductions in measures of physical, social, and/or mental functioning).¹⁴⁻¹⁷

Management of paediatric AD should therefore always include family support. Restrictions imposed on normal life, dealing with complex treatment regimens, and increased work in caring for a child with AD can lead to parental exhaustion, feelings of guilt, and depression.¹¹

Management

The management of psychodermatological disorders should emphasise the following:⁴

- Optimising treatment of the dermatological disease.
- Detection and improvement of sleep disorders.
- Reduction of stress.
- Detection and treatment of psychiatric symptoms such as depression and anxiety.
- Reduction of social isolation.
- Improvement of self-esteem.

Psychophysiological skin disorders, including AD, may respond well to pharmacological and non-pharmacological therapies that counteract stress.^{6,18}

It is important to identify children with AD and their parents who need psychological support and provide them with needs-based consultation and care.⁷ Appropriate treatment, medical consultations, and educational programmes may help to address psychosocial problems in children with AD and their parents. Psychologic interventions, such as brief dynamic psychotherapy, biofeedback, cognitive-behavioural therapy, and stress-reduction techniques, such as hypnosis and massage therapy, can be effective adjuncts to conventional treatment for AD.^{18,19}

There is evidence from published paediatric studies that educational interventions, including nurse-led clinics, can result in improvements in disease severity and QOL. Nurse-led AD clinics allow for longer consultations resulting in improved patient education and similar health outcomes when compared with physician-led clinics.²⁰ Nurse-led AD clinics aim to improve patients and parents' knowledge and understanding of the condition and cover the principles of selecting and using emollients as well as the use of topical corticosteroids.^{21,22} However, educational and psychological interventions require additional development and more comparative evaluation is needed to fully evaluate their psychodermatological effects.²³

Furthermore, because each patient's situation is unique, individualisation of AD treatment plans (including psychological management support) is critical. Implementation of the plan can only occur after open communication and consent given by the child and their parents.²⁴

Benefits of touch

A link between touch and brain development exists, with the maturing cerebral cortex being influenced by tactile stimulation.² Touch influences developing physiological, biochemical, and psychological functions.²⁵ The importance of tactile stimulation during infancy is highlighted by developmental deficits in children raised in environments in which they were deprived of sensory (and psychosocial) stimulation.^{25,26}

At a physiological level, a system of afferent nerve fibres, C-Tactile afferents (CTs), that exists solely to respond to gentle stroking touch has been identified,²⁷ and which has been demonstrated to carry a positive affective value.²⁸ This finding alludes to the mechanism by which massage therapy, as a form of CT-mediated touch, can benefit the physical and psychological aspects of a chronic skin condition such as AD.

Massage (with or without moisturiser) does lead to reduced anxiety in infants and children with AD and with health conditions and in general.²⁹⁻³² Anxiety is a risk factor for exacerbation of AD.^{33,34} Indeed, a link between psychological stress and skin barrier dysfunction in humans was demonstrated nearly two decades ago.³⁵

A comprehensive systematic review of complementary medicine for AD concluded that there is at least some high-quality evidence supporting the use of massage.¹⁸ Indeed, tactile contact between parent and child, in the form of daily massage as an

adjunct to standard topical therapy, has been demonstrated in two small randomised controlled studies to improve disease symptoms in children with AD compared with topical therapy alone.^{32,36}

In one of the studies,³² children with AD (n=20) who were receiving standard therapy (mainly emollients and topical corticosteroids) were randomly assigned to a standard care control group or a massage group that continued to receive standard care for 1 month. The massage therapy group patients received daily 20-minute massages by their parents using an emollient before bedtime. The massaged children had statistically significant improvement in the focal areas for all AD measures (**Figure 2**); in contrast, the control group significantly improved only on the scaling measure. Anxiety levels also decreased in the massaged children and the parents reported that their own anxiety levels decreased and their feeling about their children improved. The researchers suggested that the observed clinical improvements in the children's AD may have been mediated by the decreasing anxiety levels in both the parents and children.

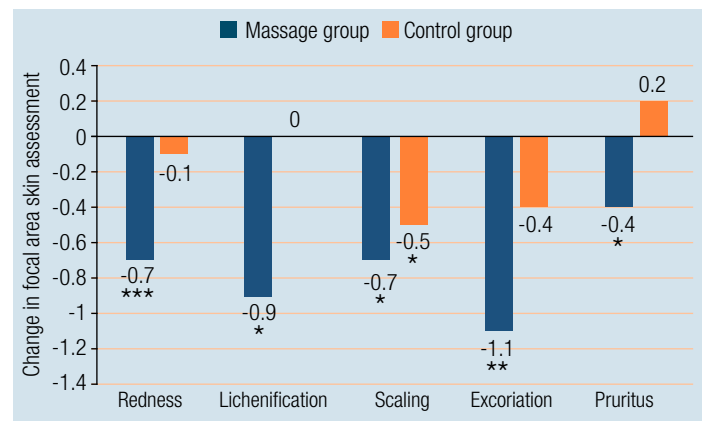


Figure 2. Mean change from baseline in focal area skin assessment in children with AD who received massage plus standard atopic therapy compared with children who received standard atopic therapy only.³² Significant difference versus baseline: *p=0.05; **p=0.01; ***p=0.001.

Treatment adherence

Childhood AD can be controlled in most patients if adherence to a therapeutic plan is maintained.^{37,38} However, with AD being a chronic disease often requiring long-term treatment, poor adherence is common and can lead to treatment failure with its attendant negative QOL outcomes for the patient and their family.

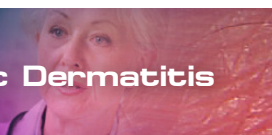
Treatment adherence in chronic diseases is multifactorial: a patient's illness beliefs, cognitive abilities, psychological profile, conscientiousness, and perceptions of stigma can all have a negative effect on adherence.³⁹⁻⁴¹ Factors contributing to poor treatment adherence in AD include:^{37,38}

- Complexity and inconvenience of treatment regimen.
- Lack of disease and treatment knowledge and information.
- Frustration or dissatisfaction with treatment.
- Dislike of a treatment.
- Infrequent follow-up.
- Fear of side effects, including corticosteroid phobia.
- Some types of complementary and alternative medicine.

Strategies that can increase adherence to treatment in AD include:^{37,38}

- Creating treatment plans that incorporate patient preferences.
- Increasing patient and parent education.
- Optimisation of the child-parent and parent-physician relationship.
- Discussion with children or parents about their treatment fears.
- Early and frequent follow-up.
- Improvement of child and parent QOL.

Related to dissatisfaction with a treatment strategy, patient acceptance of a moisturising product is a factor in maintaining treatment adherence. Moisturisers are fundamental to the long-term treatment of AD, primarily due to their ability to improve skin hydration and restore barrier function and because they are well tolerated.⁴²⁻⁴⁴



A moisturiser that children with AD and/or the parents of infants with AD like using may be relevant in terms of facilitating ongoing moisturiser use. A survey that investigated attitudes to and expectations of moisturisers among children with AD and their parents found that, although physician recommendation was the most important factor, personal preference for a moisturising product was also a factor in improving adherence to treatment.⁴⁵ Similarly, in another survey, which assessed moisturiser use in children with AD, product formulation consistency was identified as an important issue in the acceptance and continuous use of moisturiser.⁴⁶ This finding is consistent with the results of an online survey of adult patients with AD in which ‘consistency’, ‘absorbs fast’, and ‘nice to wear’ were important reasons for choosing and continuing to use a moisturiser (but secondary to recommendation by a GP or specialist).⁴⁷ High parental acceptance of a moisturiser was associated with symptom severity reduction and QOL improvement in children with AD in a 3-month study that specifically evaluated the acceptability and efficacy of leave-on moisturisers in childhood AD.^{48,49}

Providing parents with a rationale for long-term emollient use and choice of emollients for childhood AD has also been shown to help improve adherence.⁵⁰

Education

Given its long-term disease course, patient and parent education is an important component of AD management and treatment adherence.^{38,44,51} AD in infants has been reported to improve when parental education was added to conventional treatment.^{8,52}

Educational interventions may be delivered in many forms; from the provision of printed education pamphlets to web- and video-based modules.¹³ Web-based interventions, for example, are convenient for both patients and parents because they can be accessed at home. In an experimental randomised study, a 2-week web-based education programme for Korean children with AD involving 40 mother-child dyads produced statistically significant improvements in disease severity, QOL, and mothers’ self-efficacy compared with a control group.⁵³ Education interventions might also involve the development of a checklist that a patient or parent can use as a guide for facilitating adherence to ongoing treatment and maintaining awareness of their condition (**Exhibit 1**).¹³

The most effective method of managing childhood AD is to provide adequate time for education of patients and parents, including a demonstration of treatments, which can be achieved through nurse-led clinics.^{20,42} Nurse-led educational interventions seek to provide comprehensive information on the disease itself, including symptoms, treatments, and disease management,⁵¹ and there is evidence from randomised controlled paediatric studies indicating that nurse-led education can lead to improvements in AD and patient QOL.²³

Furthermore, longer-term data is available from a longitudinal clinical study that evaluated the effect of parental education and instruction by dermatology nurses on outcomes in children with AD (n=51) who were followed-up for one year.⁵⁴ Ongoing education and demonstration of topical therapies resulted in a nearly 90% reduction in severity of AD and an 800% increase in use of moisturiser compared with baseline.

The researchers concluded that: “the most important intervention in the management of AD is to spend time to listen and explain its causes and demonstrate how to apply topical therapies”.

Instruction	Done
Skin cleansed with a fragrance-free non-soap cleanser prior to applying moisturiser?	
Skin moisturised morning and evening, and in between times if appropriate?	
Lukewarm water using for bathing or showering?	
Skin dried with a soft towel by dabbing rather than rubbing?	
Moisturiser applied immediately after bathing (while the skin is still warm and damp)?	
Moisturiser applied to the entire body irrespective of whether dermatitis is present?	
Attention given to areas prone to dermatitis (lower limbs, heels, and feet)?	
Greasier moisturiser used in dry (low-humidity) environments or climates?	
Lighter moisturiser used for heat-rash-prone areas (e.g., torso) in warm environments or climates?	

Exhibit 1. Example of an educational initiative for patients with AD: Development of a skin care checklist to facilitate adherence to treatment for AD and maintain disease awareness.¹³

The benefit of increased patient knowledge of moisturisers on clinical outcomes has also been demonstrated in a large randomised controlled trial that evaluated therapeutic education of Chinese children who had moderate-to-severe AD (n=580).⁵⁵ Compared with controls who did not receive therapeutic education, disease severity was reduced and QOL improved by statistically significant margins in the intervention group. Patient and family knowledge of emollient use was also significantly increased.

Educational interventions have also been shown to reduce parental stress and anxiety associated with paediatric AD. A lack of information about the disease and its treatment can increase anxiety in the parents of children with AD.¹¹ In a randomised controlled trial of a short-term educational programme for the parents of children with AD, disease severity and parental stress and anxiety were statistically significantly reduced, while family QOL was significantly improved, compared with a non-intervention control group.⁵⁶ Similarly, an education programme (consisting of a one-on-one session followed by eight online sessions) for Korean mothers of children with AD resulted in statistically significant improvements in the mothers’ anxiety and caregiver behaviour.⁵⁷

EXPERT’S CONCLUDING COMMENTS – DIANA PURVIS

This article summarises what those working with patients with AD are well aware of: AD can have a tremendous effect on the quality of life of our patients and their families. A study of children with AD compared with other chronic childhood conditions found that the impact of generalised AD on quality of life was second only to the impact of cerebral palsy, and worse than the impact of asthma, cystic fibrosis, epilepsy, diabetes, and enuresis.¹ This means it is important that clinicians address the management of AD actively and refer on when children have severe disease that fails to respond to treatment. In my experience, the effective treatment of AD has the most significant impact benefit in reducing the psychological impact of the disease.

The Eczema Clinical Network of the New Zealand Paediatric Society provides guidance for professionals on the management of eczema and handouts and videos for families on their [website](#). The Eczema Network has also been involved with the development of HealthPathways in most regions of New Zealand with the aim that children from all areas have access to appropriate care.

Any child who is persistently waking at night due to AD, has recurrent infections, incessant scratching, is missing school, or has significant psychosocial impact should be considered for referral to secondary/tertiary services.

Many DHBs have eczema nurse specialist services that can be accessed by referral from primary care. The nurses can provide education and support for families with AD

to improve knowledge and use of treatments and this is often effective at improving AD. However, even with optimal adherence to topical therapies there are some children who still have recalcitrant AD. These children should be referred to paediatric dermatology services where treatments such as phototherapy and systemic therapies can be considered. These systemic treatments are generally well tolerated when used appropriately and can be very effective in children who have failed topical therapies.

Involvement of psychological support is important, but it is essential that this occurs alongside optimal medical therapy. Acknowledging the impact of AD on family well-being can let families know you understand the difficulties of living with AD and improve clinician-family engagement. Arranging early follow up can make arduous treatment packages seem less intimidating, allow families to open up about their problems, and let them know you are taking their AD seriously. Setting treatment goals (such as good sleep, attending school) is important to identify when treatment is or isn’t working and when to involve other services.

Although AD is common and is not a life-threatening condition, it can have a huge impact on the physical and psychological quality of life of your patients and their families, and they deserve to be offered the best effective care.

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TAKE-HOME MESSAGES

- Psychodermatology considers the psychiatric and psychological aspects of dermatological conditions and early childhood is a critical stage in social and emotional development.
- AD is the most common dermatologic condition in childhood and inflicts a substantial emotional and psychosocial burden on children and their parents.
- Itch, sleep deprivation, and social embarrassment due to visible lesions undermine the psychosocial wellbeing and QOL of children with AD and their parents.
- Gentle massage of children with AD by their parents, as an adjunct to conventional treatment, can reduce disease severity and anxiety in children as well as reduce parental anxiety.
- Simple measures that improve adherence to a treatment plan may improve patients' clinical outcomes as well as patient and parent QOL.
- Child or parent preference for a moisturiser is a key factor in maintaining treatment adherence and patient clinical outcomes.
- Nurse-led education for children with AD and their parents has been demonstrated to facilitate treatment adherence and contribute to favourable clinical and QOL outcomes.
- Children whose AD remains moderate to severe despite having effective topical treatment prescribed should be referred to an eczema nurse to optimise adherence or paediatric dermatology services to consider other forms of treatment.

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