

ACUPUNCTURE, ECZEMA AND PSORIASIS

About eczema and psoriasis

Atopic eczema (also known as atopic dermatitis) is a very common inflammatory skin condition.(Guidelines 2006) It is characterised by an itchy red rash that typically tends to involve the skin creases (e.g. behind the knees, folds of elbows, around the neck), and is usually relatively mild.(Emerson 1998) In the acute stage, eczematous lesions are poorly defined and red with oedema, vesicles, and weeping. In the chronic stage, lesions are marked by skin thickening.

The condition is most commonly seen during childhood: in the UK, it affects around 15. 20% of school-age children at some stage, but also affects some 2. 10% of adults.(Kay 1994; Williams 2000; Poyner 2001) Most of those affected have relapses and remissions over months or years.(Williams 2000) Although childhood atopic eczema is usually mild, itching, pain and discomfort, loss of sleep, and limitation of activities can disrupt everyday life, including schooling, and can cause considerable distress for children and their families.(Barnetson 2002) The causes of eczema are not well understood and are probably due to a combination of genetic and environmental factors(Cookson 2002), such as house dust mites,(Van Bever 2002) pollution,(Polosa 2001) and prenatal or early exposure to infections.(Kalliomaake 2002)

Conventional treatments include emollients (as creams, ointments or bath oils), topical corticosteroid creams, and calcineurin inhibitors (tacrolimus and pimecrolimus). Also, patients should be advised to avoid contact with soaps and detergents, and limit exposure to possible exacerbating factors such as house dust mite, furry animals, extremes of temperature and, in hypersensitive individuals, certain foodstuffs.(McHenry 1995; Poyner 2001)

Psoriasis (chronic plaque psoriasis, or psoriasis vulgaris) is a chronic inflammatory skin disease. It is characterised by well-defined red, scaly plaques on the extensor surfaces of the body (e.g. knees, elbows, hands sacrum) and scalp.

The condition affects about 2% of people in the UK. In some patients, symptoms are mild, while in others they can cause physical, social and psychological disability. The course of the condition varies widely, with flare-ups and remissions. The cause of psoriasis is not known, but there is a genetic component, with around 30% of people having a family history of the disease. Also, emotional stress, physical trauma, acute infection, and some drugs can provoke or exacerbate the condition. (RCGP 1991; Naldi 2005) Excessive alcohol consumption and smoking may also be risk factors. (Poikolainen 19990; Monk 1986; Williams 1994)

Conventional treatments include topical treatments such as vitamin D and vitamin A derivatives, dithranol cream, coal tar preparations, topical corticosteroids, psoralen and

ultraviolet light therapy (PUVA), and systemic treatments such as methotrexate, ciclosporin, acitretin and biologics (e.g. infliximab, etanercept).

References

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How acupuncture can help

There are few published randomised controlled trials (RCTs) of the effects of acupuncture in the treatment of chronic inflammatory skin conditions such as atopic eczema and psoriasis. Two small RCTs found that acupuncture reduced itch in patients with atopic eczema (Pfab 2011; Pfab 2010). On the other hand, a small RCT of acupuncture for psoriasis concluded that classical acupuncture is not superior to sham acupuncture (Jerner 1997). Acupuncture was not been found to be clearly superior to sham acupuncture in psoriasis. Sham interventions are not inactive placebos, but effectively different versions of acupuncture, so their value in evaluating treatment efficacy is highly questionable. (see Table below)

In general, acupuncture is believed to stimulate the nervous system and cause the release of neurochemical messenger molecules. The resulting biochemical changes influence the body's homeostatic mechanisms, thus promoting physical and emotional well-being. Stimulation of certain acupuncture points has been shown to affect areas of the brain that are known to reduce sensitivity to pain and stress (Hui 2010)

Acupuncture may help to relieve symptoms in people with atopic eczema and psoriasis by:

- reducing inflammation, by promoting release of vascular and immunomodulatory factors (Zijlstra 2003; Kavoussi 2007);
- regulating mediators of the allergic reaction to extrinsic allergens, for example Ig-E (Rao 2006), serum cytokines (IL-2, IL-4, IL-10, IFN-, Ig-E) (Okumura 2002), and basophils (Pfab 2011);
- enhancing natural killer cell activities and modulating the number and ratio of immune cell types (Kawakita 2008);
- increasing local microcirculation (Komori 2009), which aids dispersal of swelling;

About traditional acupuncture

Acupuncture is a tried and tested system of traditional medicine, which has been used in China and other eastern cultures for thousands of years to restore, promote and maintain good health. Its benefits are now widely acknowledged all over the world and in the past decade traditional acupuncture has begun to feature more prominently in mainstream healthcare in the UK. In conjunction with needling, the practitioner may use techniques such as moxibustion, cupping, massage or electro-acupuncture. They may also suggest dietary or lifestyle changes.

Traditional acupuncture takes a holistic approach to health and regards illness as a sign that the body is out of balance. The exact pattern and degree of imbalance is unique to each individual. The traditional acupuncturist's skill lies in identifying the precise nature of the underlying disharmony and selecting the most effective treatment. The choice of acupuncture points will be specific to each patient's needs. Traditional acupuncture can also be used as a preventive measure to strengthen the constitution and promote general well-being.

An increasing weight of evidence from Western scientific research (see overleaf) is demonstrating the effectiveness of acupuncture for treating a wide variety of conditions. From a biomedical viewpoint, acupuncture is believed to stimulate the nervous system, influencing the production of the body's communication substances - hormones and neurotransmitters. The resulting biochemical changes activate the body's self-regulating homeostatic systems, stimulating its natural healing abilities and promoting physical and emotional well-being.

About the British Acupuncture Council

With over 3000 members, the British Acupuncture Council (BAcC) is the UK's largest professional body for traditional acupuncturists. Membership of the BAcC guarantees excellence in training, safe practice and professional conduct. To find a qualified traditional acupuncturist, contact the BAcC on 020 8735 0400 or visit www.acupuncture.org.uk

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The evidence

Research	Conclusion
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Randomised controlled trials

Atopic eczema

Pfab F et al. Effect of acupuncture on allergen-induced basophil activation in patients with atopic eczema: A pilot trial. *Journal of Alternative and Complementary Medicine* 2011; 17: 309-14.

A single-blind randomised controlled pilot study that compared the effect of acupuncture with no treatment on itch intensity and in vitro basophil CD63 expression after allergen stimulation (house dust mite and timothy grass pollen) in 10 patients with atopic eczema. Mean itch intensity on a visual analogue scale (VAS) was rated significantly lower in the acupuncture group (-25% on day 15 and -24% on day 33) than in the control group (+15% on day 15 and +29% on day 33). From day 0 (before treatment) to day 15 (after 5 acupuncture treatments) as well as day 33 (after 10 acupuncture treatments), the acupuncture group showed less CD63 positive basophils than the control group after stimulation with house dust mite and grass pollen allergen. The researchers concluded that the results suggested a reduction in itch intensity and in vitro allergen-induced basophil activation in patients with atopic eczema after acupuncture treatment.

Pfab F et al. Influence of acupuncture on type I hypersensitivity itch and the wheal and flare response in adults with atopic eczema - A blinded, randomized, placebo-controlled, crossover trial. *Allergy: European Journal of Allergy and Clinical Immunology* 2010; 65: 903-10.

A randomised controlled trial that investigated the effect of acupuncture on type I hypersensitivity itch and skin reaction in a double-blind, randomised, placebo-controlled, trial in 30 patients with atopic eczema. An allergen stimulus (house dust mite or grass pollen skin prick) was applied before (direct effect) and after (preventive effect) acupuncture, 'placebo-point' acupuncture or no acupuncture. Itch intensity was recorded on a visual analogue scale (VAS). After 10 min, wheal and flare size and skin perfusion were measured at the stimulus site, and a validated questionnaire about itch was completed. Mean itch intensity was significantly lower with acupuncture (35.7) compared to placebo acupuncture (40.4) and no acupuncture (45.9) regarding the direct effect; and also significantly lower with acupuncture (34.3) and placebo acupuncture (37.8) compared to no acupuncture (44.6) regarding the preventive effect. With the preventive approach, mean wheal and flare size were significantly smaller with acupuncture (0.38cm) compared to placebo acupuncture (0.54cm) and no acupuncture (0.73cm), as was mean perfusion (72.4) compared to no acupuncture (84.1). Mean itch ratings were significantly lower with acupuncture compared to the other approaches. The researchers concluded that acupuncture showed a significant reduction in type I hypersensitivity itch in patients with atopic eczema.

Psoriasis

Jerner B et al. A controlled trial of acupuncture in psoriasis: No convincing effect. *Acta Dermato-Venereologica* 1997; 77: 154-6.

A blinded randomised controlled study that assessed the effects of acupuncture for psoriasis in 56 patients suffering from long-standing plaque psoriasis. Patients were allocated to active treatment (electrostimulation by needles plus ear-acupuncture) or placebo (sham, 'minimal acupuncture'). The severity of the skin lesions was scored (PASI) before, during, and 3 months after therapy. After 10 weeks of treatment, the PASI mean value had decreased from 9.6 to 8.3 in the acupuncture group and from 9.2 to 6.9 in the placebo group ($p < 0.05$ for both groups). There were no statistically significant differences between the outcomes in the two groups during or 3 months after therapy. The patient's own opinion about the results showed no preference for acupuncture. It was also clear from the

	answers that the blinded nature of the study had not been discovered by the patients. <u>The researcher concluded that, classical acupuncture is not superior to sham (placebo) 'minimal acupuncture' in the treatment of psoriasis.</u>
Research on mechanisms for acupuncture	
Hui KK et al. Acupuncture, the limbic system, and the anticorrelated networks of the brain. <i>Auton Neurosci</i> 2010; 157: 81-90.	A paper that discusses research showing that acupuncture mobilises the functionally anti-correlated networks of the brain to mediate its actions, and that the effect is dependent on the psychophysical response. The research used functional magnetic resonance imaging studies of healthy subjects to show that acupuncture stimulation evokes deactivation of a limbic-paralimbic-neocortical network, which encompasses the limbic system, as well as activation of somatosensory brain regions. It has also been shown that the effect of acupuncture on the brain is integrated at multiple levels, down to the brainstem and cerebellum.
Komori M et al. Microcirculatory responses to acupuncture stimulation and phototherapy. <i>Anesth Analg</i> 2009; 108: 635-40.	Experimental study on rabbits in which acupuncture stimulation was directly observed to increase diameter and blood flow velocity of peripheral arterioles, enhancing local microcirculation.
Kawakita K et al. Do Japanese style acupuncture and moxibustion reduce symptoms of the common cold? <i>eCAM</i> 2008; 5: 481. 9.	A review of research into the effects of Japanese style acupuncture and moxibustion on the symptoms of the common cold. It reports that research has shown acupuncture to reduce common cold symptoms, and that acupuncture stimulation enhances natural killer cell activities and modulates the number and ratio of immune cell types.
Kavoussi B, Ross BE. The neuroimmune basis of anti-inflammatory acupuncture. <i>Integr Cancer Ther</i> 2007; 6: 251-7.	Review article that suggests the anti-inflammatory actions of traditional and electro-acupuncture are mediated by efferent vagus nerve activation and inflammatory macrophage deactivation.
Rao YQ, Han NY. <u>[Therapeutic effect of acupuncture on allergic rhinitis and its effects on immunologic function].</u> <i>Zhongguo Zhen Jiu.</i> 2006;26(8):557-60.	A randomised controlled trial of acupuncture in patients with allergic rhinitis that acupuncture results in a decrease in serum IgE and IL-4 levels. The researchers concluded that the therapeutic effect of acupuncture involves regulating the imbalance of Th1/Th2 cells and reducing IgE synthesis.
Zijlstra FJ et al. Anti-inflammatory actions of acupuncture. <i>Mediators Inflamm</i> 2003; 12: 59-69.	An article that suggests a hypothesis for anti-inflammatory action of acupuncture: Insertion of acupuncture needles initially stimulates production of beta-endorphins, CGRP and substance P, leading to further stimulation of cytokines and NO. While high levels of CGRP have been shown to be pro-inflammatory, CGRP in low concentrations exerts potent anti-inflammatory actions. Therefore, a frequently applied 'low-dose' treatment of acupuncture could provoke a sustained release of CGRP with anti-inflammatory activity, without stimulation of pro-inflammatory cells.
Okumura M et al. Effects of acupuncture on an oxazolone induced skin allergic dermatitis animal model using male ICR mice. <i>Journal of the Showa Medical Association</i> 2002; 62: 229-36.	A study that investigated the effects of acupuncture on an oxazolone-induced skin allergic dermatitis mouse model. First, the mice were sensitised with oxazolone and then, at the challenge phase, acupuncture treatment was started. The experimental results showed that acupuncture treatment inhibited swelling of the ears and ear weight compared to non-acupuncture treatment. It inhibited the expression of serum cytokines (IL-2, IL-10, IFN-) compared to non-acupuncture treatment, and also inhibited the expression of ear tissue cytokines (IL-4, IFN-, Ig-E).

Terms and conditions

The use of this fact sheet is for the use of British Acupuncture Council members and is subject to the strict conditions imposed by the British Acupuncture Council details of which can be found in the members area of its website www.acupuncture.org.uk