

# ACUPUNCTURE AND MENOPAUSAL SYMPTOMS

## About menopausal symptoms

The menopause, defined as the end of the last menstrual period, occurs at a median age of 53 years (Hardy 2005). The change in hormone levels during the perimenopause and menopause, particularly the decline in levels of oestrogen, can cause acute menopausal symptoms; for example, about 30–70% of women in Western countries will experience vasomotor symptoms, such as hot flushes and night sweats (Freeman 2007; Melby 2005). Some women also report vaginal dryness and psychological symptoms, including tiredness, sleep disturbances, mood swings, forgetfulness and loss of libido (Melby 2005; Bachmann 1999). The median duration of menopausal vasomotor symptoms is about 4 years but, in around 10% of women, they last longer than 12 years (Polity 2008).

The most commonly used conventional medical treatment for such symptoms is hormone replacement therapy (HRT), comprising an oestrogen alone (in women who have had a hysterectomy) or in combination with a progestogen. HRT is now only indicated for short-term treatment of menopausal symptoms in the UK (MHRA 2007).

## References

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## How acupuncture can help

Systematic reviews (Lee 2009; Cho 2009) and randomised controlled trials published since these reviews were done (Kim 2010; Venzke 2010; Boroud 2010; Boroud 2009; Parks 2009; Avis 2008) have found: a) no difference between real and sham acupuncture for the treatment of menopausal symptoms, b) acupuncture is at least as effective, and sometimes superior to, hormonal drug treatment, c) additional acupuncture improves on usual, or self, care, and d) moxibustion is better than no intervention. These results suggest that sham acupuncture has therapeutic effects in itself, thus reducing its utility as a "placebo" control for true acupuncture. However,

both reviews suggested that more high quality studies are needed to confirm this. (see Table overleaf)

Acupuncture may help reduce symptoms of the menopause and perimenopause by:

- regulating serum estradiol, follicle stimulating hormone and luteotrophic hormone (Xia 2008);
- increasing relaxation and reducing tension (Samuels 2008). Acupuncture can alter the brain's mood chemistry, reducing serotonin levels (Zhou 2008) and increasing endorphins (Han, 2004) and neuropeptide Y levels (Lee 2009), which can help to combat negative affective states.
- stimulating nerves located in muscles and other tissues, which leads to release of endorphins and other neurohumoral factors, and changes the processing of pain in the brain and spinal cord (Pomeranz, 1987, Zijlstra 2003, Cheng 2009).

## 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 wellbeing.

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 wellbeing.

## 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](http://www.acupuncture.org.uk)

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## The evidence

Research	Conclusion
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### Systematic reviews

Lee MS et al. Acupuncture for treating menopausal hot flushes: a systematic review. <i>Climacteric</i> . 2009; 12: 16-25.	A systematic review, including 6 randomised controlled trials, which assessed the effectiveness of acupuncture as a treatment option for menopausal hot flushes. Four trials compared the effects of acupuncture with sham acupuncture on non-acupuncture points. All of these trials failed to show specific effects on menopausal hot flush frequency, severity or index. One trial found no effect of acupuncture on hot flush frequency and severity compared with sham acupuncture on acupuncture points that are not relevant for the treatment of hot flushes. The remaining trial tested acupuncture against non-penetrating acupuncture on non-acupuncture points. Its results suggested favorable effects of acupuncture on menopausal hot flush severity. However, this study was too small to generate reliable findings. <u>The reviewers concluded that sham-controlled randomised controlled trials have failed to show specific effects of acupuncture for the control of menopausal hot flushes.</u>
Cho SH, Whang WW. Acupuncture for vasomotor menopausal symptoms: A systematic review. <i>Menopause</i> 2009; 16: 1065-73.	A systematic review, including 11 randomised controlled trials with a total of 764 patients, which assessed whether acupuncture therapy reduces vasomotor menopausal symptoms and evaluated the adverse effects of acupuncture therapy. Six trials compared acupuncture treatment to sham or placebo acupuncture. Only one study using a non-penetrating placebo needle found a significant difference in the severity outcomes of hot flashes between groups (mean difference, 0.48, 95% CI, 0.05 to 0.91). Five studies reported a reduced frequency of hot flushes within groups; however, none found a significant difference between groups. An analysis of the outcomes of the trials that compared acupuncture with hormone therapy or oryzanol for reducing vasomotor symptoms showed that acupuncture was superior. Three trials reported minimal acupuncture-related adverse events. <u>The reviewers concluded that there was no evidence from trials that acupuncture is an effective treatment in comparison to sham acupuncture for reducing menopausal hot flushes, but that some studies have shown that acupuncture therapies are better than hormone therapy.</u>

### Review

Borud E, White A. A review of acupuncture for menopausal problems. <i>Maturitas</i> 2010; 66: 131-4.	A review paper that looked at clinical trials of acupuncture for menopausal symptoms. The reviewers found that, for natural menopause, one large study has shown acupuncture to be superior to self-care alone in reducing the number of hot flushes and improving the quality of life; five small studies have been unable to demonstrate that the effect of acupuncture is limited to any particular points, as traditional theory would suggest; and one study showed acupuncture was superior to blunt needle for flush frequency but not intensity. For flushes associated with induced menopause, clearly acupuncture is useful for reducing flushes in
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clinical practice, but there is mixed evidence on the nature of the effect: one trial found genuine acupuncture superior to control needling, but another showed no significant difference between acupuncture and blunt needle. The possible mechanisms of acupuncture for hot flashes are discussed.

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### Clinical studies

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Kim KH et al. Effects of acupuncture on hot flashes in perimenopausal and postmenopausal women—a multicenter randomized clinical trial. *Menopause* 2010; 17: 269-80.

A randomised controlled trial that evaluated the effectiveness of acupuncture plus usual care for relief of hot flashes and menopause-related symptoms compared with usual care alone in perimenopausal or postmenopausal women. The primary outcome was the mean change in the average 24-hour hot flash score (combining frequency and severity of flushes) at week 4 from baseline. The secondary outcome was the mean change in menopause-related symptoms as estimated by the Menopause Rating Scale questionnaire. Follow-up assessment at week 8 was conducted in the treatment group only. The mean change in the average 24-hour hot flash score was -16.57 in the treatment group and -6.93 in the control group ( $p < 0.0001$ ). The total Menopause Rating Scale score, as well as the subscale scores for the psychological, somatic, and urogenital dimensions of menopause, showed significant improvement in the acupuncture group compared with the control group ( $p < 0.001$ ). The researchers concluded that their results suggest that acupuncture in addition to usual care is associated with marked clinical improvement in hot flashes and menopause-related symptoms in perimenopausal or postmenopausal women.

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Venzke L et al. A randomized trial of acupuncture for vasomotor symptoms in post-menopausal women. *Complementary Therapies in Medicine* 2010; 18: 59-66.

A randomised controlled trial that aimed to determine whether acupuncture would relieve the vasomotor symptoms of post-menopausal women. Fifty one women were randomly assigned to receive 12 weeks of treatment with either Traditional Chinese Medicine (TCM) acupuncture or shallow needle (sham) acupuncture. They all kept a diary recording their hot flashes each day. At baseline, study participants filled out Greene Climacteric Scales and the Beck Depression and Anxiety Inventories. These same outcomes were also measured at week 4 of treatment and at 1 week and 12 weeks after treatment. Both groups of women showed statistically significant improvement on all study parameters, but there was no difference between them. The researchers concluded that the results showed that both TCM and sham acupuncture were effective treatments of post-menopausal vasomotor symptoms, and that shallow needling may have therapeutic effects in itself, thus reducing its utility as a "placebo" control for true acupuncture.

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Borud EK et al. The Acupuncture on hot flashes among menopausal women (ACUFLASH) study, a randomized controlled trial. *Menopause* 2009; 16: 484-93.  
Borud EK et al. The acupuncture on hot flashes among menopausal women study: Observational follow-up results at 6 and 12 months. *Menopause* 2010; 17: 262-8.

A randomised controlled trial that compared the effectiveness of individualized acupuncture plus self-care versus self-care alone on hot flashes and health-related quality of life in 267 postmenopausal women. Hot flush frequency (the primary endpoint) decreased by 5.8 per 24 hours in the acupuncture group and 3.7 per 24 hours in the control group ( $p < 0.001$ ). Hot flush intensity decreased by 3.2 units in the acupuncture group and 1.8 units in the control group ( $p < 0.001$ ). The acupuncture group experienced statistically significant improvements in the vasomotor, sleep, and somatic symptoms dimensions of the Women's Health Questionnaire compared with the control group. Follow-up at 6 and 12 months found no significant difference between the groups. The researchers concluded that acupuncture can contribute to a more rapid reduction in hot flashes and increase in health-related quality of life in postmenopausal women, but probably has no long-term effects.

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Park JE et al. Moxibustion for treating menopausal hot flashes: a

A randomised controlled trial that evaluated the effect of moxibustion on hot flashes in 51 perimenopausal and

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<p>randomized clinical trial. <i>Menopause</i> 2009; 16: 660-5.</p>	<p>postmenopausal women compared to a waiting list (control). The primary outcome measures were frequency and severity of hot flashes. By week 4, the difference in severity and frequency of hot flashes had become statistically significant between the treatment groups and the control participants. <u>The researchers concluded that their results suggest that moxibustion reduces both the frequency and severity of menopausal hot flashes as compared with those in control participants.</u></p>
<p>Avis NE et al. A randomized, controlled pilot study of acupuncture treatment for menopausal hot flashes. <i>Menopause</i> 2008; 15: 1070-8.</p>	<p>A study that investigated the feasibility of conducting a randomised trial of the effect of acupuncture in decreasing hot flashes in peri- and postmenopausal women. Fifty-six women who had at least four hot flashes per day were given one of three treatment: usual care, sham acupuncture, or TCM acupuncture. Daily diaries were used to track frequency and severity of hot flashes. There was a significant decrease in mean frequency of hot flashes between weeks 1 and 8 across all groups (<math>p=0.01</math>), although the differences between the three study groups were not significant. However, the two acupuncture groups showed a significantly greater decrease than the usual care group (<math>p&lt;0.05</math>), but did not differ from each other. Results followed a similar pattern for the hot flash index score. There were no significant effects for changes in hot flash interference, sleep, mood, health-related quality of life, or psychological well-being. <u>The researchers concluded that their results suggest either that there is a strong placebo effect or that both traditional and sham acupuncture significantly reduce hot flash frequency</u></p>
<p>Xia XH et al. Multicentral randomized controlled clinical trials about treatment of perimenopausal syndrome with electroacupuncture of sanyinjiao (SP 6) [Article in Chinese]. <i>Zhen Ci Yan Jiu</i>. 2008 Aug;33(4):262-6.</p>	<p>A randomised controlled trial including 157 women with perimenopausal symptoms that compared electroacupuncture with nylestriol and medroxyprogesterone The therapeutic effect was evaluated by using a "symptoms-signs score scale", and changes in serum estradiol (E2), follicle stimulating hormone (FSH) and luteotrophic hormone (LH). The Kupperman index was determined before and after the treatment and decreased significantly and similarly in both groups (<math>p&lt;0.01</math>). Serum FSH and LH decreased and serum E2 increased significantly in the acupuncture group (<math>p&lt;0.01</math>). Serum LH and E2 levels were significantly lower with acupuncture than with medication (<math>p&lt;0.05</math>). <u>The researchers concluded that electroacupuncture is able to regulate serum E2, FSH and LH levels and effectively improve perimenopausal syndrome.</u></p>
<p><b>Research on mechanisms for acupuncture in general</b></p>	
<p>Cheng KJ. Neuroanatomical basis of acupuncture treatment for some common illnesses. <i>Acupunct Med</i> 2009;27: 61-4.</p>	<p>A review that looked at acupuncture treatment for some common conditions. It is found that, in many cases, the acupuncture points traditionally used have a neuroanatomical significance from the viewpoint of biomedicine. From this, the reviewers hypothesize that plausible mechanisms of action include intramuscular stimulation for treating muscular pain and nerve stimulation for treating neuropathies.</p>
<p>Lee B et al. Effects of acupuncture on chronic corticosterone-induced depression-like behavior and expression of neuropeptide Y in the rats. <i>Neuroscience Letters</i> 2009; 453: 151-6.</p>	<p><b>In animal studies, acupuncture has been found to significantly reduce anxiety-like behaviour, and increase brain levels of neuropeptide Y, the brain levels of which appear to correlate with reported anxiety.</b></p>
<p>Samuels N et al. Acupuncture for psychiatric illness: a literature review. <i>Behav Med</i> 2008; 34: 55-64</p>	<p>A literature review of acupuncture for psychiatric illness, which presents research that found acupuncture to increase central nervous system hormones, including ACTH, beta-endorphins, serotonin, and noradrenaline. <u>It concludes that acupuncture can have positive effects on depression and anxiety.</u></p>

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Zhou Q et al. The effect of electro-acupuncture on the imbalance between monoamine neurotransmitters and GABA in the CNS of rats with chronic emotional stress-induced anxiety. *Int J Clin Acupunct* 2008 ;17: 79-84.

A study of the regulatory effect of electro-acupuncture on the imbalance between monoamine neurotransmitters and GABA in the central nervous system of rats with chronic emotional stress-induced anxiety. The levels of serotonin, noradrenaline and dopamine fell significantly, while GABA levels were significantly higher in the rats given acupuncture ( $P < 0.05$ , or  $P < 0.01$ ). The researchers concluded that the anti-anxiety effect of electro-acupuncture may relate to its regulation of the imbalance of neurotransmitters.

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Zijlstra FJ et al. Anti-inflammatory actions of acupuncture. *Mediators Inflamm* 2003;12: 59-69.

A review that suggests a hypothesis for the anti-inflammatory action of acupuncture. Insertion of acupuncture needle initially stimulates production of beta-endorphins, calcitonin gene-related peptide (CGRP) and substance P, leading to further stimulation of cytokines and nitric oxide (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.

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Pomeranz B. Scientific basis of acupuncture. In: Stux G, Pomeranz B, eds. *Acupuncture Textbook and Atlas*. Heidelberg: Springer-Verlag; 1987:1-18.

Needle activation of A delta and C afferent nerve fibres in muscle sends signals to the spinal cord, where dynorphin and enkephalins are released. Afferent pathways continue to the midbrain, triggering excitatory and inhibitory mediators in spinal cord. Ensuing release of serotonin and norepinephrine onto the spinal cord leads to pain transmission being inhibited both pre- and postsynaptically in the spinothalamic tract. Finally, these signals reach the hypothalamus and pituitary, triggering release of adrenocorticotrophic hormones and beta-endorphin.

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