

## About premenstrual syndrome

Most women of reproductive age experience at least mild premenstrual symptoms at some time in their lives (O'Brien 1987). However, around 2–10% of women have premenstrual symptoms that severely disrupt daily living (O'Brien 1987, DTB 1992, Wittchen 2002). These more troublesome symptoms are usually termed 'premenstrual syndrome' (PMS), if they comprise recurrent psychological and/or physical symptoms that occur specifically during the luteal phase of the menstrual cycle and usually resolve by the end of menstruation (O'Brien 1987).

Diagnosis of PMS is based on the presence of at least five symptoms, including one of four core psychological symptoms, from a list of 17 physical and psychological symptoms (Steiner 2001; Freeman 2001). The 17 symptoms are depression, feeling hopeless or guilty, anxiety/tension, mood swings, irritability/persistent anger, decreased interest, poor concentration, fatigue, food craving or increased appetite, sleep disturbance, feeling out of control or overwhelmed, poor coordination, headache, aches, swelling/bloating/weight gain, cramps, and breast tenderness.

The cause of PMS is unknown, but hormonal and other factors (possibly neuroendocrine) probably contribute (Rapkin 19917; O'Brien 1993). The aim of conventional treatment is to improve or eliminate physical and psychological symptoms; to minimise the impact on normal functioning, interpersonal relationships, and quality of life; and to minimise adverse effects of treatment (Kwan 2009).

Drugs such as spironolactone, valprozalam, metolazone, NSAIDs, buspirone and gonadorelin analogues are used to treat the main physical and psychological symptoms of PMS (Kwan 2009). Surgery is indicated only if there are coexisting gynecological problems.

## References

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Wittchen H-U et al. Prevalence, incidence and stability of premenstrual dysphoric disorder in the community. *Psych Med* 2002; 32: 119-32.

## How acupuncture can help

A randomised controlled trial (Jin 2007), pilot study (Shin 2009) and systematic review (Cho 2010) have found some evidence to suggest acupuncture reduces PMS symptoms, but more high quality studies are needed to confirm this. (see Table overleaf)

Acupuncture may help reduce symptoms of PMS by:

\* 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);

\* reducing inflammation, by promoting release of vascular and immunomodulatory factors Kavoussi 2007, Zijlstra 2003).

## 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 British Acupuncture Council on 020 8735 0400 or visit [www.acupuncture.org.uk](http://www.acupuncture.org.uk)

## The evidence

Research	Conclusion
<b>Systematic review</b>	
Cho SH, Kim J. Efficacy of acupuncture in management of premenstrual syndrome: A systematic review. <i>Complementary Therapies in Medicine</i> 2010; 18: 104-11.	A systematic review including 9 randomised controlled trials that assessed the effectiveness and adverse effects of acupuncture for the symptomatic treatment of PMS. Four studies reported a significant difference in reduction of PMS symptoms for acupuncture treatment compared with pharmacological treatment. Two studies reported improvements in primary symptoms within acupuncture and herbal medications groups compared with baseline. Only two trials reported information regarding acupuncture-related adverse events, which included one case of a small subcutaneous haematoma. <u>The reviewers concluded that, although the included trials showed that acupuncture may be beneficial to patients with PMS, there is insufficient evidence to support this conclusion due to methodological flaws in the studies.</u>
<b>Clinical studies</b>	
Jin H et al. Clinical observation on acupuncture at the five-zangshu for treatment of perimenopausal syndrome. [Chinese]. <i>Zhongguo Zhenjiu</i> 2007; 27:572-4.	A randomised controlled trial that observed therapeutic effect and safety of acupuncture in the treatment of 40 women with PMS. The treatment group was treated with acupuncture and the control group with Premarin tablets. The therapeutic effects and changes of Kupperman scores and serum estradiol (E2) levels before and after treatment were observed. The total effective rate was 90.0% in the treatment group vs. 65.0% in the control group ( $p < 0.05$ ). After treatment, serum E2 level increased ( $p < 0.01$ ), with a significant difference between the two groups ( $p < 0.05$ ). There was also a significant difference between the two groups in Kupperman symptom score index after treatment ( $p < 0.05$ ). <u>The reviewers concluded that the therapeutic effect of acupuncture is better than that of Premarin for treatment of perimenopausal syndrome</u>
Shin KR et al. The effect of hand acupuncture therapy and hand moxibustion therapy on premenstrual syndrome among Korean women. <i>Western Journal of Nursing Research</i> 2009; 31: 171-86.	A pilot study that compared the effects of hand acupuncture and hand moxibustion therapy with a control group (no treatment) 22 women with PMS. After acupuncture and moxibustion treatment, there were significant reductions in overall symptom reports, and in abdominal pain and bloating, compared with both pre-treatment levels and relative to controls. Rapid mood changes were also reduced in the post-treatment period in both the hand acupuncture and hand moxibustion groups, but not in the control group. <u>The researchers concluded that hand acupuncture and hand moxibustion therapy may be effective strategies for women to reduce PMS symptoms.</u>
<b>Research on mechanisms for acupuncture in general</b>	
Cheng KJ. Neuroanatomical basis of acupuncture treatment for some common illnesses. <i>Acupunct Med</i> 2009;27: 61-4.	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.
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.	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.
Samuels N et al. Acupuncture for psychiatric illness: a literature review. <i>Behav Med</i> 2008; 34: 55-64	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>
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. <i>Int J Clin Acupunct</i> 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 $P < 0.0$ ). The researchers concluded that the anti-anxiety effect of electro-acupuncture may relate to its regulation of the imbalance of neurotransmitters.
Kavoussi B, Ross BE. The neuroimmune basis of anti-inflammatory acupuncture. <i>Integr Cancer Ther</i> 2007; 6: :251-7.	A review that suggests the anti-inflammatory actions of traditional and electro-acupuncture are mediated by efferent vagus nerve activation and inflammatory macrophage deactivation.

<p>Zijlstra FJ et al. Anti-inflammatory actions of acupuncture. <i>Mediators Inflamm</i> 2003;12: 59-69.</p>	<p>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.</p>
<p>Pomeranz B. Scientific basis of acupuncture. In: Stux G, Pomeranz B, eds. <i>Acupuncture Textbook and Atlas</i>. Heidelberg: Springer-Verlag; 1987:1-18.</p>	<p>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.</p>

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