ACUPUNCTURE AND PRE-MENSTRUAL SYNDROME

About pre-menstrual 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, valprazolam, 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

Freeman EW, Rickels K, Yonkers KA, et al. Venlafaxine in the treatment of premenstrual dysphoric disorder. *Obstet Gynecol* 2001;98:737–44.

Kwan I, Onwude JL. Premenstrual syndrome. *Clinical Evidence*. Search date July 2009

Managing the premenstrual syndrome. *DTB* 1992; 30: 69-72.

O'Brien PMS. Premenstrual syndrome. Oxford: Blackwell Scientific Publications, 1987.

O'Brien PMS. Helping women with premenstrual syndrome. *BMJ* 1993;307:1471–1475.

Rapkin AJ, Morgan M, Goldman L, et al. Progesterone metabolite allopregnanolone in women with premenstrual syndrome. *Obstet Gynecol* 1997;90:709–14.

Steiner M, Romano SJ, Babcock S, et al. The efficacy of fluoxetine in improving physical symptoms associated with premenstrual dysphoric disorder. *Br J Obstet Gynaecol* 2001;108:462–8.

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 systematic review (Cho 2010) located 10 randomised controlled trials and found some evidence to suggest acupuncture reduces PMS symptoms. However, trial quality was generally poor and further 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).

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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

ACUPUNCTURE AND PRE MENSTRUAL SYNDROME

The evidence

Research	Conclusion
Systematic review	
Cho SH, Kim J. Efficacy of acupuncture in management of premenstrual syndrome: A systematic review. *Complementary Therapies in Medicine* 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 PMS. Four studies reported a significant difference in reduction of PMS symptom 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 sm subcutaneous haematoma. The reviewers concluded that, although the included showed that acupuncture may be beneficial to patients with PMS, there is insuffic evidence to support this conclusion due to methodological flaws in the studies.
Clinical studies	
Shin KR et al. The effect of hand acupuncture therapy and hand moxibustion therapy on premenstrual syndrome among Korean women. *Western Journal of Nursing Research* 2009; 31: 171-86.	A pilot study that compared the effects of hand acupuncture and hand moxibustic therapy with a control group (no treatment) 22 women with PMS. After acupunctu and moxibustion treatment, there were significant reductions in overall symptom reports, and in abdominal pain and bloating, compared with both pre-treatment l and relative to controls. Rapid mood changes were also reduced in the post-treat period in both the hand acupuncture and hand moxibustion groups, but not in the control group. The researchers concluded that hand acupuncture and hand moxibustion therapy may be effective strategies for women to reduce PMS symptoms.
Research on mechanisms for acupuncture in general	
Cheng KJ. Neuroanatomical basis of acupuncture treatment for some common illnesses. *Acupunct Med* 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 neuropatl
Lee B et al. Effects of acupuncture on chronic corticosterone-induced depression-like behavior and expression of neuropeptide Y in the rats. *Neuroscience Letters* 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. *Behav Med* 2008; 34: 55-64	A literature review of acupuncture for psychiatric illness, which presents researcl found acupuncture to increase central nervous system hormones, including A beta-endorphins, serotonin, and noradrenaline. It concludes that acupuncture have positive effects on depression and anxiety.
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 w chronic emotional stress-induced anxiety. The levels of serotonin, noradrenaline 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 neurotransmitters.
Kavoussi B, Ross BE. The neuroimmune basis of anti-inflammatory acupuncture. *Integr Cancer Ther* 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.
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 acupunctu 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 be 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.
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 t the spinal cord, where dynorphin and enkephalins are released. Afferent pathway continue to the midbrain, triggering excitatory and inhibitory mediators in spinal c Ensuing release of serotonin and norepinephrine onto the spinal cord leads to pa transmission being inhibited both pre- and postsynaptically in the spinothalamic t Finally, these signals reach the hypothalamus and pituitary, triggering release of adrenocorticotropic hormones and beta-endorphin.