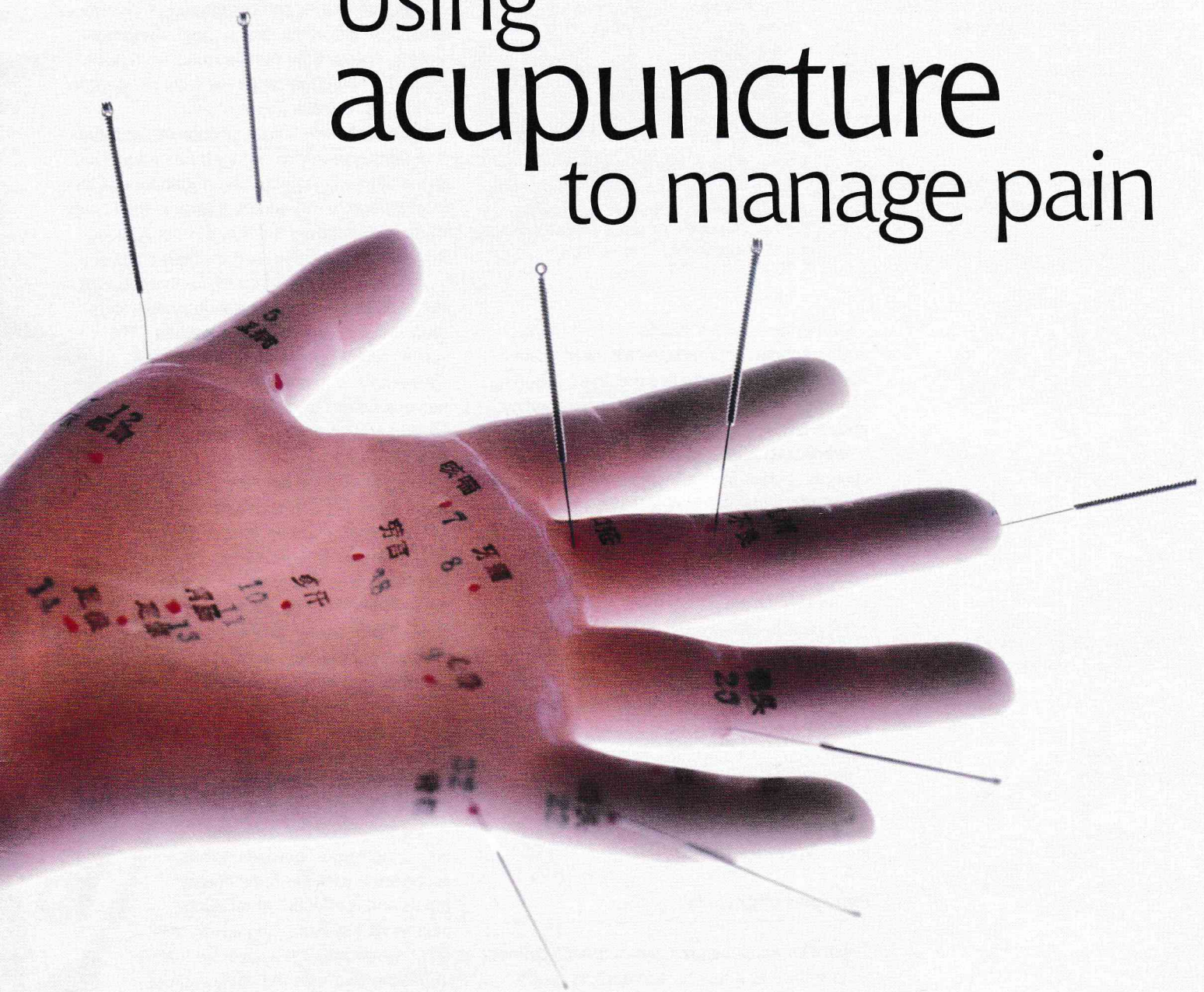


Using acupuncture to manage pain



Pain is highly subjective and sometimes extremely difficult to alleviate, and pain management in a clinical setting can be complex. But there are many alternative methods available that have shown favourable results and which patients and carers can explore in their quest to minimise intractable pain.

Recent statistics about acupuncture-use estimate that in England each year, one million treatments are given in the NHS, and two million in the private sector (University of York 2001).

Of the many non-drug treatments available

for pain, acupuncture receives the most positive reports in relation to effectiveness and long-term management.

However, pain is only one aspect of its clinical use. It has been widely used for a number of other conditions ranging from stress and anxiety to skin problems, digestive disorders and even some cancers.

Claims regarding its benefits in tackling a number of other problems, such as smoking, obesity, depression, drug addiction and irritable bowel syndrome (IBS), have come under the public and scientific spotlight recently.

Yaso Shan outlines the benefits of acupuncture for managing pain

Keywords

- ▶ acupuncture
- ▶ complementary medicine
- ▶ pain relief

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Box 1. Health problems that can be treated using acupuncture

Acupuncture shows extremely good results in the treatment of:

- ▶ Headaches
- ▶ Migraines
- ▶ Back problems
- ▶ Arthritis and other musculo-skeletal problems

Acupuncture is also used to treat:

- ▶ Irritable bowel syndrome
- ▶ Skin problems
- ▶ Infertility

- ▶ Gynaecological and menstrual problems
- ▶ Obesity
- ▶ Depression
- ▶ Smoking and other addictions
- ▶ Morning sickness
- ▶ Labour pain
- ▶ Nausea (from chemotherapy)

Acupuncture can be used to treat any illness as long as the degenerative process in the tissues is not too extensive.

And Prince Charles' call for a more holistic and integrated approach to NHS health care has led to many alternative therapies, including acupuncture, coming under immense scrutiny and review.

While sceptics might dismiss the notion of sticking needles into strategic parts of the body as an effective medical tool, many of the supporters and advocates of acupuncture, including many doctors, some of whom also practise acupuncture, strongly oppose any move to curtail its use in mainstream medicine.

This article explores the basic principles and practice of acupuncture and examines current evidence regarding its effectiveness. It also reviews the many alleged benefits of acupuncture, based on reports from patients and practitioners.

In addition, it highlights some of the more popular uses that do not necessarily have the requisite scientific evidence to support implementation in the NHS.

Principles of practice

The British Acupuncture Council (BAC) defines acupuncture as a holistic approach to health based on over 2,000 years of developments and refinements in the Far East.

In the West, it is practised mainly by doctors and physiotherapists and is often referred to as 'medical acupuncture'. However, this is a more limited style of traditional acupuncture and is based more on a Western medical model of diagnosis and treatment.

The traditional art of acupuncture is holistic in its approach, and encourages a greater and smoother flow of the body's motivating energy called 'Qi'.

Qi consists of equal and opposite qualities known as yin and yang. Any imbalance in these

two forms of energies results in illness.

The flow of Qi can be adversely affected by a number of factors, such as emotional distress, anxiety, stress, anger, fear or grief. An imbalance in energy flow can also arise from poor nutrition, hereditary factors, infections, weather conditions, poisons and injuries.

In keeping with holistic philosophy, acupuncture aims primarily to restore balance and harmony between the physical, emotional and spiritual aspects of individuals. It locates the energy block and improves the flow of energy along key energy channels called the 'meridians'.

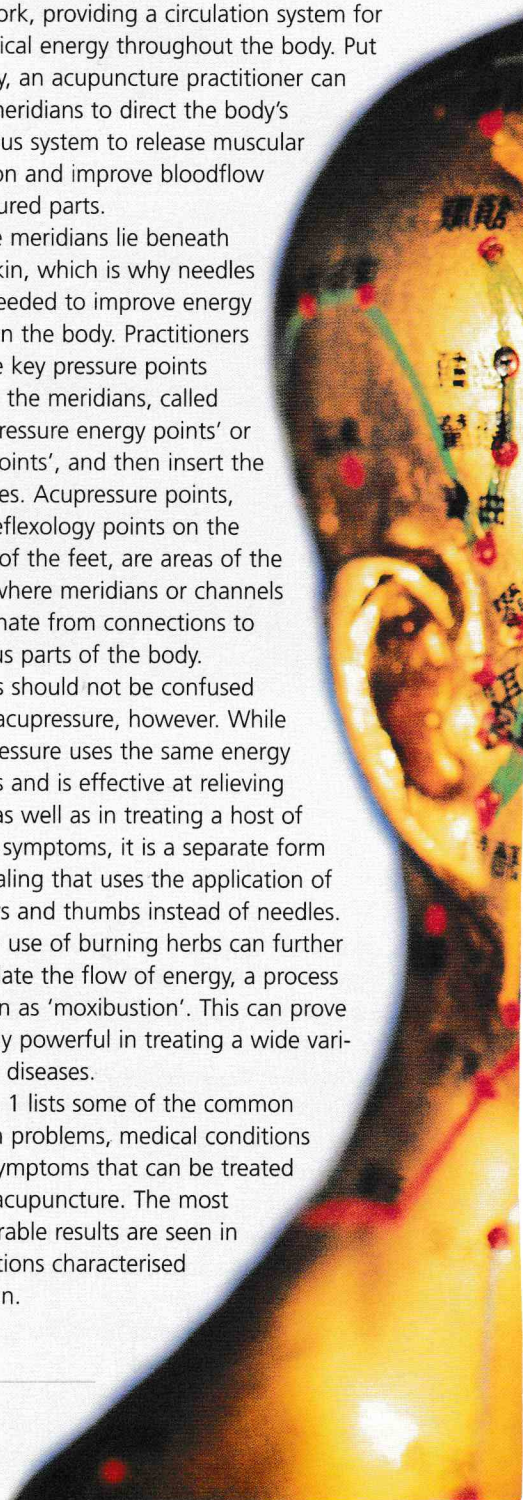
The meridians are a sort of communications network, providing a circulation system for electrical energy throughout the body. Put simply, an acupuncture practitioner can use meridians to direct the body's nervous system to release muscular tension and improve bloodflow to injured parts.

The meridians lie beneath the skin, which is why needles are needed to improve energy flow in the body. Practitioners locate key pressure points along the meridians, called 'acupressure energy points' or 'acupoints', and then insert the needles. Acupressure points, like reflexology points on the soles of the feet, are areas of the skin where meridians or channels terminate from connections to various parts of the body.

This should not be confused with acupressure, however. While acupressure uses the same energy points and is effective at relieving pain as well as in treating a host of other symptoms, it is a separate form of healing that uses the application of fingers and thumbs instead of needles.

The use of burning herbs can further stimulate the flow of energy, a process known as 'moxibustion'. This can prove equally powerful in treating a wide variety of diseases.

Box 1 lists some of the common health problems, medical conditions and symptoms that can be treated with acupuncture. The most favourable results are seen in conditions characterised by pain.



Health culture context

Acupuncture is widely implemented in conjunction with Western medicine in China.

The treatment of acute and chronic conditions, even in hospitals, extensively embraces acupuncture and other forms of traditional Chinese medicine, alongside drug-based treatments and surgical intervention.

The national policy in China is to pursue both systems side by side, accompanied and supported by extensive clinical research.

It is hard to imagine a similar system in the UK where the culture of drug-based treatments continues to dominate, despite the many advocates of acupuncture who would argue the case for its wider provision.

Much of the scepticism about acupuncture stems from the absence of incontrovertible evidence for its clinical usefulness or efficacy that could justify making it available in hospitals or in the community.

There have been very few comprehensive scientific studies or clinical trials on the effectiveness of acupuncture. And while there have been some randomised controlled trials (RCTs) evaluating its effectiveness, the majority are of poor quality and provide conflicting evidence (University of York 2001).

This makes it very difficult for any funding body or government organisation to finance the provision of this form of healing, particularly in mainstream medicine.

However, the lack of evidence for acupuncture's efficacy is not the same as lack of effectiveness.

How it works

Acupuncture is believed to work by stimulating the nerves in the skin and the muscles in the region of the acupoints. This generates a series of nerve communications, some of which stimulate the brain.

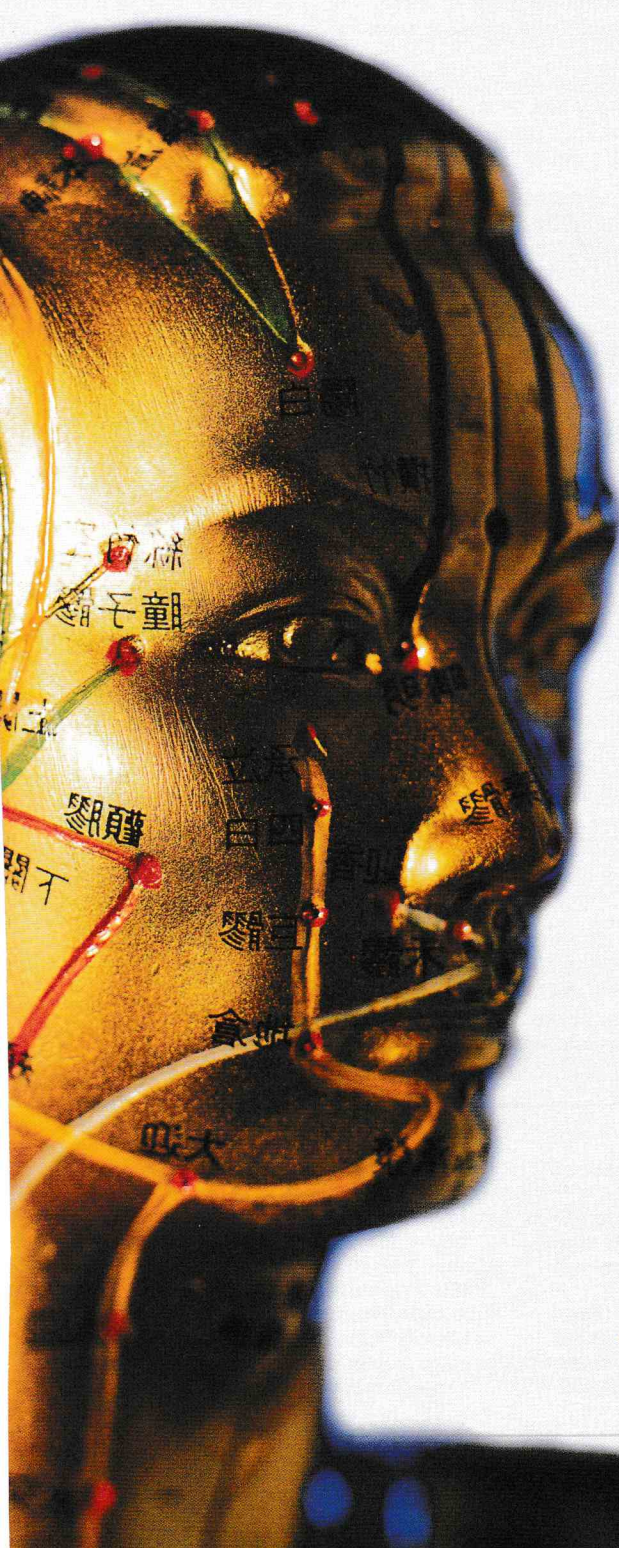
In pain relief, this signals the release of endorphins, the body's natural analgesics. The entrance of endorphins into key nerve pathways of the brain and spinal cord help alleviate pain in the part of the body affected by the sensation.

Therefore, a variety of conditions characterised by pain, such as headache, migraine, arthritis and back pain, can benefit significantly from this type of treatment.

Some patients who experience chronic pain derive greater benefit from acupuncture than from conventional medicines, such as anti-inflammatories and analgesics. It is believed this is because it is more effective in pinpointing the specific parts of the body affected.

In this respect, it is easy to see why some doctors and other healthcare practitioners endorse acupuncture's use as an adjunct to conventional medicines for pain relief in some chronic conditions.

Acupuncture may also work by de-activating the part of the pain matrix in the limbic system associated with perception of the pain. The limbic system is the part of the brain that influ-



Some patients who experience chronic pain derive greater benefit from acupuncture than from conventional medicines, such as anti-inflammatories and analgesics

ences the formation of memory by integrating emotional states with stored memories of physical sensations.

It is also argued that this type of treatment is more likely to be effective if the person believes it will be and, therefore, that the results cannot be a true indication of therapeutic efficacy.

This emphasis on belief in the effectiveness of a therapy implies some form of psychological manipulation is at work rather than a physiological response, despite the clinical benefits seen.

However, one scientific study showed that 'real' acupuncture, as opposed to 'sham' acupuncture (in which needles are placed in non-acupressure points as a research control), elicits a demonstrable physiological response in the brain that is distinctly different from that in patients who simply expect or believe the treatment will work (Pariente *et al* 2005).

The results of this study suggest that the impact of acupuncture might be more than just a placebo effect.

Clinical evidence

Of the many alleged benefits of acupuncture, the most notable is pain relief. However, as previously mentioned, there is very little scientific evidence to support this.

Researchers at the University of York undertook a comprehensive review of acupuncture studies in 2001. Examining some of this evidence, in addition to other literature, might give credence to some of the claims made about acupuncture.

Table 1 highlights some of these studies and other published evidence, and summarises some of the findings.

Conclusion

In light of recent evidence, it is clear that acupuncture use has potential in clinical settings, particularly in pain relief and management.

An important distinction needs to be made between the medical acupuncture that is widely practised in the West, and from which most of this evidence is generated, and the traditional Chinese method conducted in a holistic context and in a culture that has a greater public acceptance of and respect for this therapy.

Nevertheless, the benefit to patients can be significant and the report compiled by the University of York (2001) probably best encapsulates the implications and potential clinical uses of acupuncture.

Table 1. Summary of some studies on the clinical effectiveness of acupuncture

Author(s)	Nature of study and summary of findings
British Medical Association 2000	▶ This report evaluates the evidence for acupuncture as a treatment for back and neck pain, osteoarthritis, recurrent headache, nausea and vomiting, smoking cessation, weight loss, stroke and dental pain. ▶ Chapter two concludes that, according to current evidence, acupuncture appears to be more effective than control interventions for nausea and vomiting (particularly for post-operative symptoms in adults), back pain, dental pain and migraine. ▶ Evidence is unclear about a specific response to acupuncture in osteoarthritis and neck pain. The report says the jury is still out about its use in recovery from stroke, tension headache, fibromyalgia and certain joint dysfunctions. ▶ The report states: 'Acupuncture appears not to be superior to sham acupuncture (used as a control in research) for smoking cessation and weight loss.' ▶ It recommends more high quality research into acupuncture's effectiveness and calls for the National Institute for Health and Clinical Excellence (NICE) to review the value of particular treatments and to consider how it can be integrated into the NHS.
Ezzo <i>et al</i> 2000	▶ A systematic review of 51 RCTs into the effectiveness of acupuncture as a treatment for chronic pain seen in various musculo-skeletal disorders, angina, post-herpetic pain, headache, pancreatitis, fibromyalgia, dysmenorrhoea, cystitis and jaw pain. ▶ The study concludes that there is limited evidence that acupuncture is more effective than no treatment for chronic pain, and is inconclusive about whether it is more effective than placebo, sham acupuncture or standard care.
He <i>et al</i> 2004	▶ A Norwegian study at the University of Oslo into the effectiveness of acupuncture for chronic neck and shoulder pain in sedentary female office workers showed it significantly reduced pain. The effects were felt for three years following the course of treatment. ▶ Additionally, beneficial effects were noted in the frequency and severity of the headaches the women experienced in relation to neck and shoulder pain.
Linde <i>et al</i> 2005	▶ A RCT involving 302 patients with migraine investigating the effectiveness of acupuncture compared with sham acupuncture and no acupuncture. ▶ Results showed that both real and sham acupuncture reduced the intensity of migraine compared with no treatment at all. However, real acupuncture was no better than sham acupuncture, which goes against other research suggesting acupuncture works in its own right. ▶ The trial design has been criticised for not truly testing the placebo effect and the BAcC said that using prescribed acupuncture points for all patients may have skewed the results, although there is good evidence here to suggest that acupuncture was helpful in the treatment of migraine.
Manias <i>et al</i> 2000	▶ A systematic review of 27 studies into the efficacy of acupuncture in the treatment of primary headaches showed that the majority of the clinical trials (23 out of 27) reported positive conclusions. ▶ The authors recommend additional clinical research to confirm the findings and clarify the indications for acupuncture.

References

- British Medical Association (2000) *Acupuncture: efficacy, safety and practice*. London, BMA.
- Ezzo J, Berman B, Hadhazy VA, Jadad AR, Lao L, Singh BB (2000) Is acupuncture effective for the treatment of chronic pain? A systematic review. *Pain*. 86, 3, 217-225.
- He D, Veiersted KB, Høstmark AT, Medbø JJ (2004) Effect of acupuncture treatment on chronic neck and shoulder pain in sedentary female workers: a 6-month and 3-year follow-up study. *Pain*. 109, 3, 299-307.
- Linde K, Streng A, Jürgens S, Hoppe A, Brinkhaus B, Witt C *et al* (2005) Acupuncture for patients with migraine: a randomized controlled trial. *JAMA*. 293, 17, 2118-2125.
- Manias P, Tagaris G, Karageorgiou K (2000) Acupuncture in headache: a critical review. *Clinical Journal of Pain*. 16, 4, 334-339.
- Middlekauff HR, Yu JL, Hui K (2001) Acupuncture effects on reflex responses to mental stress in humans. *American Journal of Physiology*. 280, 5,

Middlekauff <i>et al</i> 2001	▶ A study into the effect of acupuncture on the reflex responses to mental stress using 19 healthy people to support previously positive effects seen in animals. ▶ The study concluded that acupuncture significantly reduced the rise in blood pressure during mental stress with a similar effect seen using non-acupoints. ▶ No appreciable effects were seen in modulating the sympathetic nerve activity in muscles or in reducing the heart rate during times of mental stress.
Ramnerö <i>et al</i> 2002	▶ A RCT conducted on 90 women during labour showed that the acupuncture group felt significantly more relaxed. ▶ Self-assessment of pain intensity was equal between the two groups, but requests for epidural pain relief were significantly lower in the acupuncture group. ▶ The authors conclude that acupuncture is a good alternative or a complement to conventional analgesia during labour and recommend further trials with larger numbers of patients to establish whether the main effect of acupuncture during labour is analgesic or relaxation.
University of York 2001 (NHS Centre for Reviews and Dissemination)	▶ A comprehensive report summarising the research evidence on the effectiveness of acupuncture. It investigated the nature of the clinical evidence and reviewed all available randomised controlled trials (RCTs), studies and systematic reviews. ▶ Despite the flawed methodology and limitations of some of the RCTs reviewed, the report concludes that acupuncture is a safe and reliable second line treatment for chronic pain, particularly musculo-skeletal complaints. ▶ It also concludes that it is effective for post-operative nausea and vomiting in adults, chemotherapy-related nausea and vomiting, and post-operative dental pain. ▶ The authors recommend that any future research should use appropriate methodology to improve the quality of evidence.
Vickers <i>et al</i> 2004	▶ A RCT on 301 patients with chronic headache, predominantly migraine, showed that treatment with acupuncture resulted in, on average, 22 fewer days of headache in the year following treatment. ▶ Although the differences in the patients' overall health favoured acupuncture, this was only significant for some test elements. ▶ Patients treated with acupuncture had fewer visits to their GPs and took fewer days off sick. This was not statistically significant. ▶ The authors conclude that acupuncture leads to persistent, clinically relevant benefits for primary care patients with chronic headache, particularly migraine, and recommend that acupuncture should be considered for expansion in the NHS.
White <i>et al</i> 1999, White <i>et al</i> 2000	▶ Systematic reviews of 20 RCTs to evaluate whether acupuncture is effective in helping people stop smoking showed that there is no difference between acupuncture and sham acupuncture. The study further concluded that acupuncture was no more effective than nicotine replacement. ▶ However, the studies reviewed are small in number leading to a wide variation in smoking cessation results. Also, the placebo response here is that subjects stopped smoking because of some feature of their treatment other than acupuncture, and this is difficult to test.

The key findings of the York report are as follows:

- ▶ Acupuncture is most often used in the NHS as a second or third line treatment for chronic pain. Current levels of evidence from RCTs are probably sufficient to justify this practice. However, there is insufficient evidence to warrant first line treatment of chronic pain. There is enough evidence to suggest that attempts to curtail acupuncture would be unjustified.
- ▶ Acupuncture is effective for post-operative nausea and vomiting, chemotherapy-related nausea and vomiting, and for post-operative dental pain.
- ▶ Current evidence suggests that acupuncture is unlikely to be of benefit for obesity, smoking cessation and tinnitus. Although studies have been conducted for a variety of other conditions that support the effectiveness of acupuncture, such RCTs have rarely been reproduced and therefore cannot provide a sufficient basis for clinical recommendations. These conditions include depression, urinary incontinence, induction of uterine contractions, breech presentation, hot flushes, xerostomia, IBS, hyperactivity, male sub-fertility, UTI and hayfever. Currently there is no evidence of its effectiveness in relieving symptoms of asthma, or in helping people overcome alcohol or opiate addictions.

The full potential of acupuncture has not yet been fully explored although much of the available research shows impressive results.

It remains a valid alternative therapy in the treatment of some conditions and it is worth undertaking further studies and research into its application and impact to justify it as an effective treatment option.

More importantly, further research would consolidate its successes, and afford the treatment more serious consideration as an integral part of the holistic approach to health care ■

Yaso Shan, consultant medical herbalist, can be contacted at the Brackenbury Natural Health Clinic (www.brackenburyclinic.co.uk) on 020 8741 9264.

- ▶ For more information on acupuncture contact The British Acupuncture Council at: www.acupuncture.org.uk

R1462-R1468.
 Pariente J, White P, Frackowiak RS, Lewith G (2005) Expectancy and belief modulate the neural substrates of pain treated by acupuncture. *NeuroImage*. 25, 4, 1161-1167.
 Ramnerö A, Hanson U, Kihlgren M (2002) Acupuncture treatment during labour – a randomised controlled trial. *BJOG*. 109, 6, 637-644.
 University of York (NHS Centre for Reviews and Dissemination) (2001) *Effective Health Care – Acupuncture*. 7, 2.

Vickers AJ, Rees RW, Zollman CE, McCarney R, Smith CM, Ellis N *et al* (2004) Acupuncture for chronic headache in primary care: large, pragmatic, randomised trial. *British Medical Journal*. 328, 7442, 744.
 White AR, Rampes H, Ernst E (2000) Acupuncture for smoking cessation. *Cochrane Database of Systematic Reviews*. 2, CD000009.
 White AR, Resch KL, Ernst E (1999) A meta-analysis of acupuncture techniques for smoking cessation. *Tobacco Control*. 8, 4, 393-397.