



## The Skeptics SA guide to Acupuncture

**Acupuncture** is a form of therapy that is part of traditional Chinese medicine (TCM) where small metal needles are inserted into specific points on the body. These points, known as ‘acupoints’, are claimed to be located on special internal body channels, meridians, through which, it is claimed, flows Chi, a special form of energy.

The earliest references to using needles in Chinese medicine is contained in the *Huang-ti nei-ching*, the *Inner Classic of the Yellow Sovereign*, also known as the *Inner Canon of the Yellow Emperor*. The fundamental basis of TCM and acupuncture, were, and remain, metaphysical cosmic forces. These are:

- Yin and Yang: Two mutually opposed forces that produce cosmic balance, Yin was perceived as a visible, physical substance while Yang was, ‘the formless and insubstantial’ (Lu and Needham, 1980a, p 862)
- Qi or Chi: A spiritual life-energy, generally referred to as ‘a flow of energy’ or simply air or breath, was much more complex. It was considered to be ‘vital or heavenly air’ (Mainfort, 2004, p 38) that came from the sun. Omura (2003) defined it as meaning, ‘the flow of something that is the source of vital energy for humans and animals’ (p 24)
- The Five Elements: Similar to the ancient Skeptics SA

Western theory of humors, the Chinese identified five elemental substances, Water, Fire, Earth, Metal and Wood. To the Chinese the number ‘five’ was an extremely mystical and auspicious number, thus there were five directions, the four cardinal points plus the centre.

According to TCM philosophy, good health depends on the constant interaction, and in particular, the balance produced by the harmonious combination of the Yin, Yang, Qi and the Five Elements. Coordinating these forces were astrological macrocosmic/microcosmic influences. The Chinese believed there existed an inexorable link between the heavens, the ‘great cosmos’ and the Earth, the ‘small cosmos’ and that everything that occurred on Earth was a ‘reflection’ of events in heaven.

Around 500 – 400 BCE Chinese medical philosophy was profoundly influenced by Confucianism and Taoism, both of which stressed the concept of ‘harmony’. Confucianism stressed the concepts of righteousness, and good relations to produce a harmonious and stable society. While Confucianism was primarily concerned with a secular code of conduct, Taoism was based on a belief in an indefinable universal energy that was perceived as being part of, and flowing through, all things

animate and inanimate. It represented a union of opposites, whereby the mystical cosmic forces combined to create a sense of harmonious balance throughout the cosmos.

The best known example of this ‘cosmic balance’ was the concept of the Yin and Yang, two aspects of a single concept, that represented the, ‘two sides of the same or as polar areas of a single whole’ (Capra, 1977, p 21). It was their ‘dynamic interplay’ that produced continuing cosmic balance. Over time, these concepts came to be applied to the fundamental principles of human life, and , it was reasoned, if one lived in harmonious balance with the natural cosmic order, one would also experience good health. It was this cosmological deviation which, as Epler (1980) observed, diverted TCM into a stagnant backwater of primitive insularity, rather than pursuing the scientific development that occurred in the West (p 348).

Of primary importance for practitioners of TCM and acupuncture was the concept of Qi energy and its ability to flow through the body in regular cycles. The most important aspect of this Qi energy was that it must be maintained at a harmoniously balanced level; too much, or too little can result in imbalance, or disharmony. There were numerous factors that could

upset this vital balance; unfavourable environmental conditions, a poor diet, too much physical or emotional stress, all can produce an imbalance in the system that could produce physical or mental disorders. The ultimate aim of TCM was to restore the vital balance when it was out of harmony and, in this respect, acupuncture is sometimes referred to as ‘treating patterns of disharmony.’

Acupuncture is based on the belief that there existed in the body a system of special channels, *jing luo*: called meridians in English, through which the Qi energy flowed, ‘in a pre-determined direction from meridian to meridian circulating through the entire body’ (Omura, 2003, p 24). It was believed that any interference with this flow of Qi could produce disharmony (sickness) in the body, but that harmony could be restored by inserting small needles into some of the 361 specific acupoints (WHO, 1993), (*xue*: literally, a hole or cave), located along six yin, six yang, and eight extraordinary channels through which the Qi flows. This needling process, it was claimed, could produce a significant effect upon the flow of Qi in the meridians.

The pathways of the meridians and the locations of the acupoints are based upon Chinese concepts. While the various acupoints were believed to have a relationship to particular organs, their locations are not necessarily near to the organs being treated; furthermore, not all acupoints are located on the various meridians. The meridian system appears to be a Chinese invention for when Simon *et al* (1988)

injected technetium 99m, a radioactive tracer substance, into both acupuncture and control points, they noted lymphatic and venous drainage of the technetium 99m at the site of the initial injection, and the substance was then absorbed into and transported through the veins, with no evidence of acupuncture meridians.

Although the origins of acupuncture are uncertain, it appears that it began as an early form of bloodletting, (phlebotomy), a form of ‘medical treatment’ was used widely in ancient times and was based upon a primitive belief that illness was caused by evil spirits invading the body, and that they had to be removed before an individual could be cured. According to Seigworth (1980) it probably developed from the Neolithic practice of trepanning, where stone tools were used to open the human skull to release evil spirits, and by 1 000 BCE the time of the Egyptians had begun to create wounds in specific parts of the body in the belief it would enable the evil spirits to escape from the infected area of the body.

In China the earliest known tools for bloodletting were bian stones, samples of which have been found in Inner Mongolia dating from circa 3000 BCE. Sharpened, arrow-shaped stones, sometimes called ‘needle-stones’ that were used to treat disease (Wertz, 2008). These items were probably important parts of the medical kit of early Chinese physicians, and that the arrow was possibly used for ‘minor surgery or acupuncture’ (p 22). Eventually, according to Manaka and Urquhart (1973),

these stones were replaced by needles of bamboo, fish-bones (p 95) and even animal bones (Lu and Needham, 1980a, p 863), then, in the Shang Dynasty, (1600 – 1046 BCE), the first metal needles were produced. It appears that, as Epler (1980) noted, the principal reason for inserting these needles was, ‘so that blood flows out’ (p 350).

There remains considerable disagreement as to whether or not acupuncture is a valid form of therapy in the treatment of actual physical diseases. This was due, in part, to the fact that no research could be found dealing with the use of acupuncture in the treatment of diseases *per se*. This possibly reflects the fact that traditionally, when dealing with diseases, the philosophy is to use acupuncture as an auxiliary form of therapy, in the belief that, by stimulating and strengthening the flow of Qi, the natural healing ability of the body is maximized, and so is best able to deal with the actual diseases.

The principal areas of effectiveness for acupuncture appears to be those disorders that have a degree of psychosomatic input. Numerous studies suggest that acupuncture can produce positive physical responses in a range of disorders such as post-operative nausea (Lee and Done, 2004), migraines (Linde *et al*, 2005), neck pain (Trinh *et al*, 2007), and chronic lower back pain (Haake *et al*, 2007). Unfortunately there are three major problems with these results:

- 1 There are various methodological problems with many of these studies, which make their findings suspect

- 2 Some of the findings have been deliberately falsified
- 3 Even if acupuncture is shown to provide positive results, it is not necessarily proof that acupuncture, per se, is the primary factor in producing the various physiological changes.

The NCAHF Task Force on Acupuncture found that the main problems with those studies which recorded positive results for acupuncture was that, (a) subject numbers were too small, and (b) they tended to lack appropriate controls. On the other hand, better designed studies, with larger numbers of subjects, and proper controls, tended to indicate there was no actual difference between acupuncture and the various other controls. In a meta-analysis of ninety-one separate studies on pain control, ter Riet, Kleijnen, and Knipschild (1990) concluded the studies were generally of poor quality and that, the poorer the design, the more likely they were to show that acupuncture was effective, whereas better designed studies, with stricter controls, revealed no evidence that acupuncture was an effective form of treatment, and concluded that overall, the efficacy of acupuncture for treating chronic pain remained dubious.

A major problem with any research is that too often researchers are biased, and when the results do not support their thesis, they tend to 'manipulate' the results. One example of this is Smith, Crowther and Beilby (2002). A study comparing the effectiveness of traditional acupuncture with p6 acupuncture, (an acupoint on the anterior surface of the forearm), sham

acupuncture, (where needles are inserted in areas close to, but not in, defined acupoints) and no acupuncture, to treat nausea dry retching and vomiting in early pregnancy.

In discussing the findings the report emphasized that "Traditional acupuncture was shown to be an effective treatment for ... nausea and dry retching in early pregnancy" yet it failed to mention that while 23% of those using traditional acupuncture were free from nausea, the results were even better for those using sham acupuncture (25%). Similarly, no mention was made in the final analysis that a larger percentage of the sham acupuncture group were free from dry retching, 59%, compared to those receiving traditional acupuncture, 56%. While these findings clearly indicate that there is some common factor occurring with both acupuncture and sham acupuncture, the sham acupuncture results are ignored in favour of evidence that 'acupuncture works.'

Comparisons between traditional acupuncture and sham acupuncture show little, or no difference, between the two. Richardson and Vincent (1986a and b) analysed 28 studies of the effectiveness of both on pain relief; 15 showed no difference, while 13 which indicated acupuncture was more effective, the differences were too small to be significant. Most similar studies produce similar results showing that acupuncture is no more effective than sham treatments, (Lee, Andersen, *et al*, 1975; Moor and McQuay, 2005).

Such results suggest a psychological component in acupuncture. Significantly, many of the

attributes of traditional acupuncture, especially pain reduction that is frequently presented as evidence of the efficacy of acupuncture, are surprisingly familiar to those experienced in hypnosis. Katz *et al* (1974) noted that subjects with the highest levels of hypnotisability responded best to acupuncture, while those with low hypnotisability levels had little or no pain relief. Mendelson (1977) found similar results.

There is evidence that when used as anaesthesia for major operations, both hypnosis and acupuncture are only effective on a small number of patients. In various Chinese hospitals the number who volunteered for operations using acupuncture ranged from 7% to 30%, and of these the acupuncture was only 'successful in about 90 per cent of these cases' (DeBakey, 1973, p 166).

Skrabaneck (1984) detailed how, in 1972, for instance, Chinese acupuncture patients were subjected to several days of intense indoctrination by a therapist who encouraged them to adopt a positive attitude towards the treatment. (p 1169). Amongst the significant variables listed by Kroger (1977) that influence the use of acupuncture are rehearsal of the procedure, 'the ideological fervour ... patriotic adherence to Maoist doctrine; and ...the characteristic stoicism of the Chinese' (p 224). One can see that such patients would be ideally prepared via suggestion to undergo operations under acupuncture.

In addition, acupuncture surgical patients also receive Western style sedatives: 'local anaesthesia with procaine, and an intravenous drip

with pethidine and other drugs' (p 1169). DeBakey (1973) reported that before open-heart operations with acupuncture, the patient was extremely drowsy, having been given phenobarbital and morphine, which produced deep relaxation 'and put him in a suggestive state' (p 162). DeBakey (1973) also noted the numbers of hospital patients using acupuncture ranged from 7% to 30% and of these, in only about 90% of cases was the acupuncture successful (p 166).

Numerous theories have been proposed to explain the fact that both hypnosis and acupuncture do have a positive effect on alleviating pain:

- Endorphins: These are natural substances created in the body during times of stress, and are structurally similar to morphine and heroin producing similar heightened feelings of exhilaration, in effect a 'drug-high' that interferes with the experience of pain (Hassett, 1980, p 86). Manheimer *et al* (2005) suggested that perhaps why sham acupuncture produces similar 'physiologic responses (p 660); and subjects use these natural pain-control mechanisms, which can be triggered by the use of such techniques as hypnosis, meditation, and other relaxation techniques
- Gate Theory: It was proposed by Wall and Melzack (1962) and Melzack and Wall (1965) that the stimulation of certain nerve fibres, either by pressure or touch, could produce impulses which effectively interfered with other signals either reducing or blocking the experience of pain.

While acupuncture practitioners strive to

Skeptics SA

present the practice as having a legitimate scientific basis, when one examines acupuncture closely, it becomes quite clear that it is nothing more than a collection of pre-scientific religious and philosophical concepts, masquerading as a form of medical treatment. Acupuncture is based upon primitive metaphysical concepts that have absolutely no relationship to legitimate medicine. Some examples of the core-beliefs of acupuncture are:

- The number of needles used in acupuncture is nine, a number chosen solely for its astrological and auspicious significance (Epler, 1980, p 362)
- In TCM the pulse is taken at three locations, each having three depths, again the mystical number nine, although according to other TCM authorities there are either six (NCAHF, 1990), or fifteen different pulses (Sampson and Beyerstein, 1996, p 31)
- Plain Questions states the pulse should be taken 'just before sunrise' since 'it is traditionally believed that yin and yang are relatively in balance macroscopically just before dawn' (Flaws, 1995, p 43)
- It is quite clear that in early acupuncture acupoints were unknown, and were a much later concept
- The number of treatment points (hsüeh), mentioned in Plain Questions is 365 (Epler, 1980, p 362) a number based upon the days of the year, however, over the centuries this number has increased to some 2,000 points (NCAHF, 1990)
- Acupoints appear to be irrelevant: DeBakey

(1973) reported that for a particular type of operation the needle was inserted on top of the forearm, at another hospital in the underside of the forearm, and in another instance, the needle was inserted in the ear (p 165)

- Although the original number of meridians was eleven (Epler, 1980, p 339), it is now generally accepted there are twelve primary meridians
- The Neijing never mentions the importance of the brain: mental processes are attributed to the twelve internal organs, in particular to the five solid organs, heart, liver, spleen, lungs and kidneys, and the five hollow organs, the gall bladder, large and small intestines, stomach and bladder, 'various mental diseases are considered to be due to the abnormal function of the internal organs' (Omura, 2003, p 30).

Although modern acupuncture is 'the result of a long development and bears little resemblance to its ancestral version' (Epler, 1980, p 337), it still retains ancient pseudo-scientific concepts, and has absolutely no real relationship to scientific medicine. There is strong evidence to suggest that acupuncture is nothing more than a form of suggestion, similar to hypnosis.

### Note

This is a condensed version of a larger article by L Eddie, February 2008. Copies of the full version available from <laurieeddie@adam.com.au>

## References

- Capra, F, (1977), 'The Tao of Physics: Reflections on the Cosmic Dance', *Saturday Review*, December 10, pp 21 – 28
- DeBakey, M, (1973), 'A Critical Look at Acupuncture', *Readers' Digest*, 102:618, pp 161 – 166
- Epler, Jr, DC, 'Bloodletting in early Chinese Medicine and its relation to the origin of acupuncture', *Bulletin of Historical Medicine*, 1980, 54:357 – 367
- Flaws, B, (1995), *The Secret of Chinese Pulse Diagnosis*, Boulder, Colorado: Blue Poppy Press
- Haake, M, Hans-Helge, M, Schade-Brittinger, C, Basler, HD, Schäfer, H, Maier, C, Endres, HG, Trampisch, HJ, and Molsberger, A, (2007), 'German Acupuncture Trials (GERAC) for Chronic Low Back Pain: Randomized, Multicenter, Blinded, Parallel-Group Trial With three Groups', *Archives of Internal Medicine* 167(17):1892 – 1898
- Hassett, J, (1980), 'Acupuncture is proving its points', *Psychology Today*, 14:7, pp 81 – 89
- Katz, RL, Kao, CY, Spiegel, H, and Katz, GJ, (1974), 'Pain, Acupuncture, Hypnosis', *Advances in Neurology*, 4: 819
- Kroger, WS, (1977), *Clinical and Experimental Hypnosis in Medicine, Dentistry and Psychology*, Philadelphia: JB Lippincott Company
- Lee, A, Done, ML, 'Stimulation of the wrist acupuncture point P6 for preventing post-operative nausea and vomiting', *Cochrane Database of Systematic Reviews 2004*, Issue 3. Art No: CD003281
- Lee, PK, Andersen, TW, Modell, JH, and Saga, SA, (1975), 'Treatment of chronic pain with acupuncture', *Journal of the American Medical Association*, 1975; 232: 1133 – 1135
- Linde, K, Streng, A, Jurgens, S, Hoppe, A, Brinkhaus, B, Witt, C, Wagenpfeil, S, Pfaffenrath, V, Hammes, MG, Weidenhammer, W, Willich, SN, and Melchart, D, (2005), 'Acupuncture for patients with migraine: a randomized controlled trial', *Journal of American Medical Association*, 4;293(17):2118 – 25
- Lu, G, and Needham, J, (1980a), 'Pains and needles', *New Scientist*, 860–863
- Lu, G, and Needham, J, (1980b), *Celestial Lancets: A History and Rationale of Acupuncture and Moxa*, New York: Cambridge University Press
- Mainfort, D, (2004), 'The Physician-Shaman: Early Origins of Traditional Chinese Medicine', *Skeptic*, 1, 36–39
- Manaka, Y, and Urquhart, IA, (1973), *The Layman's Guide to Acupuncture*, New York: Weatherhill
- Manheimer, E, White, A, Berman, B, Forys, K, and Ernst, E, (2005), 'Meta-Analysis: Acupuncture for Low Back Pain', *Annals of Internal Medicine*, 142:8, 651 – 663
- Melzack, R, and Wall, PD, (1965), 'Pain mechanisms: A new theory', *Science*, 150, 971
- Mendelson, G, (1977), 'Acupuncture analgesia I: Review of clinical studies', *Australian and New Zealand Journal of Medicine*, 7(6): 642 – 648
- Moore, A, and McQuay, H, (2005), 'Acupuncture: not just needles', *Lancet*, 366:9480, pp 100–101
- National Council Against Health Fraud, (1990), *Position Paper on Acupuncture* <[www.ncahf.org/pp/acu.html](http://www.ncahf.org/pp/acu.html)>
- Omura, Y, (2003), *Acupuncture Medicine: Its Historical and Clinical Background*, Mineola, New York: Dover Publications Inc
- Richardson, PH, and Vincent, CA, (1986a), 'The evaluation of therapeutic acupuncture: concepts and methods', *Pain* 24:1 – 13
- Richardson, PH, and Vincent, CA, (1986b), 'Acupuncture for the treatment of pain', *Pain* 24:15–40
- Sampson, W, and Beyerstein, BL, (1996), 'Traditional Medicine and Pseudoscience in China: A Report of the Second CSICOP Delegation', *Skeptical Inquirer*, 20:5, pp 27 – 34
- Seigworth, GR, (1980), 'Bloodletting Over the Centuries', *New York: State Journal Of Medicine* (December), pp 2022 – 2028
- Simon, J, Guiraud, G, Esquerre, JP, Lazorthes, Y, and Guiraud, R, (1988), 'Acupuncture meridians demythified: Contribution of radiotracer methodology', *Presse Médicale*, 2;17(26):1341 – 1344
- Skrabanek, P, (1984), 'Acupuncture and the age of unreason', *Lancet*, 8387:1: 1169 – 1171

Smith, C, Crowther, C, and Beilby, J, (2002), 'Acupuncture to Treat Nausea and Vomiting in Early Pregnancy: A Randomized Controlled Trial', *Birth*, 29:1, 1 – 9

ter Riet, G, Kleijnen, J, and Knipschild, P, (1990), 'Acupuncture and chronic pain: a criteria-based meta-analysis', *Journal of Clinical Epidemiology*, 43: 1191 – 1199

Trinh, K, Graham, N, Gross, A, Goldsmith, C, Wang, E, Cameron, I, and Kay, T, (2007), 'Acupuncture for neck disorders', *Spine*, 15:32 (2) 236 – 243

Wall, PD, and Melzack, R, (1962), 'On nature of cutaneous sensory mechanisms', *Brain*, 85:331, 1962

Wertz, R, (2008), *Acupuncture*, <[www.ibiblio.org/chineseculture/contents/heal/p-heal-c02s01.html](http://www.ibiblio.org/chineseculture/contents/heal/p-heal-c02s01.html)>

World Health Organization, (1993), *Standard Acupuncture Nomenclature*, Manila

## **Skeptics SA**

### **The South Australian branch of the Australian Skeptics**

For further information on the Australian Skeptics and the journal, *the Skeptic*, contact:

Skeptics SA, <[info@skepticssa.org.au](mailto:info@skepticssa.org.au)>

Web site: <[www.skepticssa.org.au](http://www.skepticssa.org.au)>