

Acupuncture: An alternative therapy in medicine and dentistry

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ABSTRACT

An introduction to the practical application of acupuncture is presented in the light of current research. Acupuncture could supplement conventional treatment modalities. Its value in the treatment of temporomandibular dysfunction syndrome and facial pain has been well-documented. Although, it may be useful in the control of post-operative pain, its use as sole analgesia for operative care is questionable. The aim of this paper is to give a broad introduction to acupuncture to the general and dental practitioner and to emphasize the scientific background for acupuncture.

Key words

Acupuncture, dentistry, medicine

INTRODUCTION

Acupuncture is among the best known of complementary and alternative therapies.^[1-3] Traditional Chinese Acupuncture has a history of over 3,000 years,^[4] still it has not lost its popularity. Acupuncture has varied applications, as: Pain syndrome illnesses, in rehabilitation of hemiplegia, and in the treatment of psychological illnesses and obesity.^[3,4]

The method is commonly practiced as a routine treatment in China, Japan, Korea, and Taiwan, and since the late 1970s has gained popularity in the United States as well as other parts of the Western world.^[5-7] Over its 2500 years of development, a wealth of experience has accumulated in the practice of acupuncture, attesting to the wide range of diseases and conditions that can be effectively treated with this approach.^[8] It is effective in a number of conditions encountered in the dental practice such as temporomandibular dysfunction syndrome (TMDS) and pain management.^[9-11] In addition Blom *et al.* have demonstrated its value in Sjogrens disease. Despite its long history there still exists a great

deal of scepticism in the professional community as to its efficacy. A commonly held view of acupuncture is that it is a complicated technique involving a substantial knowledge of ancient Chinese philosophy whose action is largely a placebo effect.^[12] However, Richardson and Vincent^[11] has shown it to be effective in a wide range of musculo-skeletal conditions, Lundeberg^[13] has demonstrated that it may improve the immune response, and Tao^[14] recommends its use in stress management, a topic that interfaces with the dental practice. The aim of this review is to highlight the efficacy of acupuncture and provide the busy clinician models of its imputed mechanism of action and evidence base for effectiveness.

DEFINITION

Acupuncture literally means “to puncture with a needle.” The term “acupuncture” consists of two words from the Latin: *Acus*: Needle and *puncture*: Insertion. It is a treatment procedure in which, generally, steel, silver, or gold needles are inserted into specific acupuncture points.^[4]

The term “acupuncture” can also be used in its broad sense to include:^[1-8]

1. Traditional body needling
2. Moxibustion
3. Electric acupuncture (electro-acupuncture)
4. Laser acupuncture (photo acupuncture)
5. Microsystem acupuncture such as ear (auricular), face, hand and scalp acupuncture
6. Acupressure (the application of pressure at selected sites).

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BACK TO HISTORY

The precise start date of acupuncture's use in China and how it evolved from early times are uncertain. One explanation is that some soldiers wounded in a battle by the arrows were believed to have been cured of chronic afflictions that were otherwise untreated,^[15] and there are variations on this idea.^[16] Hieroglyphs and pictographs have been found dating from the Shang Dynasty (1600-1100 BCE (Before Common Era)), which suggests that acupuncture was practiced along with moxibustion.^[17] The earliest written record of acupuncture is found in the Huangdi Neijing (The Yellow Emperor's Inner Canon), dated approximately 200 BCE^[18] Acupuncture originated in China and soon spread to Japan, the Korean peninsula and elsewhere in Asia. Although acupuncture was introduced to Europe as long ago as the early 17th century, scepticism about its effectiveness continues to exist in countries where modern Western medicine is the foundation of health-care, especially in those where acupuncture has not yet been widely practiced.^[6,8,10,11]

ACUPUNCTURE POINTS AND ITS CHARACTERISTICS

Application is made to the skin and muscle tissue under the skin. The skin and muscle tissue under skin are affected by every kind of stimulation during the application (70-80%) of all acupuncture points are the same as the trigger points^[19] and that most of the acupuncture points are also the same as muscular motor points.^[20]

Acupuncture points have a low electrical resistance. The acupuncture points themselves can be regarded as energy concentrating points, comparable to electric batteries in which, up to a certain extent, physical energy is stored (Leonhardt, 1980). Generally, needle insertion to acupuncture points stimulates skin receptors that are slowly adapted. It has been determined that there is a close relationship between the location of the acupuncture points and the receptors of the acupuncture points.^[20-22]

At the histological level, a study of large numbers of microtomed preparations originating from 34 skin areas, including 11 acupoints and a number of "neutral" skin areas, revealed two types of acupoints: Receptor and effector.^[22] This was based on the difference in the distribution of the somato-sensory receptors and a number of free nerve endings. These include Meissner's corpuscles, Krause's end-bulbs, glomus-bodies, and smooth muscle.^[23]

Mechanism of action

Acupuncture uses fine needles. Typically these are inserted through the skin and gently stimulated by hand or sometimes with a gentle electrical current from a torch

battery. The treatment doesn't generally take very long, often uses about half a dozen needles (this varies on the patient), and is not usually painful, although there may be some discomfort. Your dentist may do some other dental treatment whilst the acupuncture works. Sometimes the position of the needles can seem strange, but there are specific patterns for treatments.

Modern research has shown that acupuncture can work on most of the body's systems. The needles stimulate the nervous system, to produce a number of effects, modifying the way pain signals are felt, and releasing natural painkillers – endorphin and serotonin in the nervous system.^[6-15]

BIOCHEMICAL-NEUROLOGICAL MECHANISM OF FUNCTIONING

Acupuncture activates small myelinated nerve fibers in muscle, which send impulses to the spinal cord and then activate the midbrain and pituitary-hypothalamus. It has been shown that enkephalin, beta-endorphin, dynorphin, serotonin, and noradrenalin are involved in this process. It is well-known that a painful stimulation will activate two types of nerve fibers in the peripheral nervous system: A-δ-fibers and C-fibers which primarily will terminate at the second layer of the back horn. From the second layer of the back horn, the pain sensation is via interneurons transmitted to the cortex and we will experience a pain.^[1,24,25]

Today it is generally accepted that insertion of a needle in an acupuncture point will create a small inflammatory process with the release neurotransmitters such as bradykinin, histamine, etc., and subsequent stimulate A-δ-fibers located in the skin and muscle. The A-δ-fibers terminate in the second layer of the back horn and inhibits the incoming painful sensations by release of enkephaline. This segmental model is a simpler mode of action and accounts probably for the pain relieving effect of acupuncture in most cases. From the second layer of the back horn, the A-δ-fiber continues to the fifth layer of the back horn, cross over to the opposite side and ascend via the spinothalamic tract to the mid brain where the raphe magnus nucleus is stimulated. Raphe magnus nucleus is the main producer of serotonin on the brain and is believed to play a key role in acupuncture's mode of action. Thus, it has been demonstrated that serotonin is a pro-drug for endorphin, which probably accounts for the central (extra-segmental) effect of acupuncture. Moreover, it has been shown that serotonin is a pro-drug for ACTH (Adrenocorticotrophic Hormone), which probably via the pituitary gland accounts for the increase of cortisol, which has been shown after acupuncture and thus, improves the immune system. Finally, Serotonin has a direct effect on the cortex and it is likely that the beneficial effect of acupuncture on stress and anxiety is because of this direct effect. It has been suggested that the pituitary

gland takes part in the production of endorphin, but our knowledge at this level is very scanty [Figures 1 and 2].^[24-27]

Safety

Acupuncture treatment is safe if it is performed properly by a well-trained practitioner. Unlike many drugs, it is non-toxic, and adverse reactions are minimal. This is probably one of the chief reasons why acupuncture is so popular in the treatment of chronic pain in many countries.^[16-18]

Availability and practicability

The advantages of acupuncture are:^[24-27]

1. It is simple, convenient and has few contraindications. Although, the success rate of acupuncture therapy in treating kidney stones, for example, is confirmed by comparative studies with other therapies, it is by no means as high as that of surgical intervention
2. It is also valuable in situations where the patient is frightened of the potential risks or adverse effects of modern conventional treatments.

Working and treatment results

Experiments have shown that acupuncture results are not due to the placebo effect. The response of individuals may vary. Some patients notice an immediate improvement; some find that several treatments are needed before the full effect is felt. Generally, about 70% of patients show some benefits.^[30-31]

Studies on therapeutic mechanisms

Clinical evaluations indicate whether the therapy works; research on the mechanisms involved indicates how it works and can also provide important information on efficacy. The clinical evaluation may precede studies on the mechanisms, or vice versa. For acupuncture, in most instances the clinical effect has been tested first. Use of the technique may then be further expanded on the basis of the results of research on the mechanisms. For

example, experimental studies of the effect of acupuncture on white blood cells led to a successful trial of the treatment of leukopenia caused by chemotherapy.^[1-4]

To date, modern scientific research studies have revealed the following actions of acupuncture:

- Inducing analgesia
- Protecting the body against infections
- Regulating various physiological functions.^[4,5]

In reality, the first two actions can also be attributed to the regulation of physiological functions. The therapeutic effects of acupuncture are thus brought about through its regulatory actions on various systems, so that it can be regarded as a nonspecific therapy with a broad spectrum of indications, particularly helpful in functional disorders. Although, it is often used as a symptomatic treatment (for pain, for instance), in many cases it actually acts on one of the pathogenic links of a disease.^[6-8]

Since its therapeutic actions are achieved by mobilization of the organism's own potential, acupuncture does not produce adverse effects, as do many drug therapies. For example, when release of hydrocortisone plays an important role in the production of a therapeutic effect, the doses of this substance released by acupuncture are small and finely regulated, thereby avoiding the side-effects of hydrocortisone chemotherapy. On the other hand – and for the same reason – acupuncture has limitations. Even under conditions where acupuncture is indicated, it may not work if the mobilization of the individual's potential is not adequate for recovery.^[1,3,7,8]

REVIEW OF CLINICAL TRIAL REPORTS

Pain (in diseases with pain syndrome)^[24-27]

Acupuncture analgesia works better than a placebo for most kinds of pain, and its effective rate in the treatment



Figure 1: Acupuncture controlling ear pain

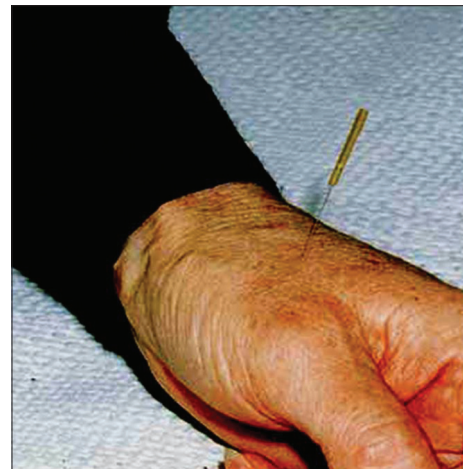


Figure 2: Acupuncture controlling post-operative anxiety

of chronic pain is comparable with that of morphine. In addition, numerous laboratory studies have provided further evidence of the efficacy of acupuncture's analgesic action as well as an explanation of the mechanism involved.^[24-26] Because of the side-effects of long-term drug therapy for pain and the risks of dependence, acupuncture analgesia can be regarded as the method of choice for treating many chronic painful conditions as observed by Ahonen *et al.* (1984) Pintov *et al.* (1997).^[27,28]

In the treatment of some diseases with a pain syndrome such as dysmenorrhea, osteoarthritis, fibromyositis, trigeminal neuralgia, and post-operative ache, acupuncture has been used and different degrees of recovery have been observed.^[4]

Head and face

The use of acupuncture for treating chronic pain of the head and face has been studied extensively. For tension headache, migraine and other kinds of headache due to a variety of causes, acupuncture has performed favorably in trials comparing it with the standard therapy, sham acupuncture, or mock transcutaneous electrical nerve stimulation. Chronic facial pain, including craniomandibular disorders of muscular origin, also responds well to acupuncture treatments. The effect of acupuncture is comparable with that of stomatognathic treatments for temporomandibular joint pain and dysfunction.^[29-34]

Locomotor system

Chronic painful conditions of the locomotor system accompanied by the restricted movements of the joints are often treated with acupuncture if surgical intervention is not necessary. Acupuncture not only alleviates pain, it also reduces muscle spasm, thereby increasing mobility. Joint damage often results from the muscle malfunction, and many patients complain of arthralgia before any changes are demonstrable by X-ray.

The conditions concerned include, cervical spondylitis or neck pain due to other causes, periartthritis of the shoulder, fibromyalgia, fasciitis, epicondylitis (tennis elbow), low back pain, sciatic, osteoarthritis with the knee pain, and radicular and pseudoradicular pain syndromes. Rheumatoid arthritis is a systemic disease with extra-articular manifestations in most patients. In this disease, dysfunction of the immune system plays a major role, which explains the extra-articular and articular features. Acupuncture is beneficial in the treatment of rheumatoid arthritis. While acupuncture may not improve the damage that has been carried out to the joints, successful pain relief has been verified in the majority of controlled studies.^[35-38]

Gout

In a randomized controlled trial, blood-pricking

acupuncture was compared with the conventional medication (allopurinol). The acupuncture group showed greater improvement than the allopurinol group.^[1]

Biliary and renal colic

Biliary and renal colic are two conditions for which acupuncture can be used not only as an analgesic, but also as an antispasmodic. It provides a better analgesic effect in a shorter time, without side-effects over conventional drug treatments (such as intramuscular injection of atropine, pethidine, anisodamine).^[39-43]

Traumatic or post-operative pain

For traumas such as sprains, acupuncture is not only useful for relieving pain without the risk of drug dependence, but may also hasten recovery by improving the local circulation. Acupuncture analgesia to relieve post-operative pain is well recognized and has been confirmed in controlled studies.^[44-49]

Dentistry

Acupuncture has been widely used in dentistry. There are reports of randomized controlled trials on the analgesic effect of acupuncture for post-operative pain from various dental procedures, including tooth extraction pulp devitalization, and acute apical periodontitis. According to a systematic review of papers on the use of acupuncture in dentistry published between 1966 and 1996, 11 out of 15 randomized controlled studies with blind controls, appropriate statistics and sufficient follow-up showed standard acupuncture to be more effective than a placebo or sham acupuncture.^[22-46]

ITS INTRODUCTION INTO GENERAL DENTAL PRACTICE HAS POTENTIALLY THREE PATHS

As a variant of the old medical acronym TEETH (tried everything else, try homeopathy). That is when clinicians have exhausted all available therapeutic avenues; acupuncture is tried as a last resort.

- As a supplement to orthodox treatment where treatment modalities may be limited or ineffective. Clear examples are to suppress the gagging reflex during the maxillary impression taking, the reduction in post-operative analgesic requirement in patients sensitive to them, reduction of time in the onset of local anesthesia and control of pre-operative anxiety [Figure 3]. These involve simple acupuncture treatments with the insertion of few needles at recognized acupuncture points, which can be taught to any dentist as a short post-graduate course
- As an adjunct to, or replacement of normal treatment modalities, for more complex conditions such as TMD or facial pain. Suitable example is when the use of non-steroid anti-inflammatory drugs is contra-indicated because of concomitant systemic medication or gastric ulceration

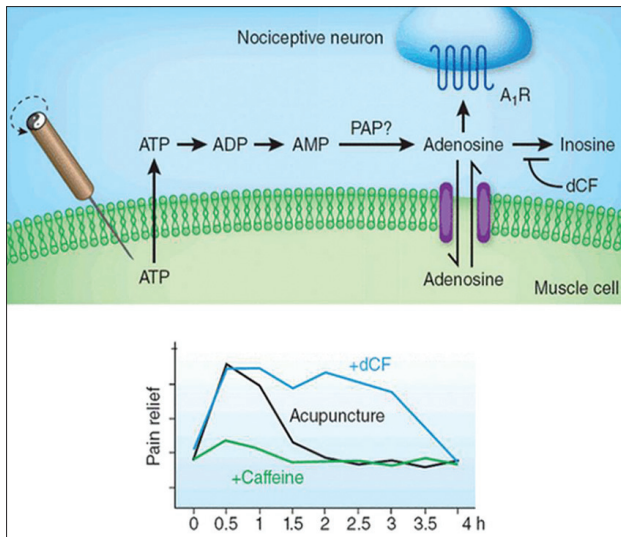


Figure 3: Mechanism of acupuncture

- Though, acupuncture is not going to replace the drill, but it certainly has quite a lot to offer in dentistry. Conditions that your dentist might treat with acupuncture are the following:
 - TMJ (temporomandibular joint)- pain
 - TMJ clicking and locking
 - Facial pain
 - Muscle spasm
 - Chronic stress headache
 - Migraine
 - Trigeminal and other neuralgias
 - Rhinitis and sinusitis
 - Prominent stretch reflex
 - Dental anxiety
 - Xerostomia (dry mouth problems)
 - Altered sensations in the mouth
 - Post-operative pain.^[1-4]

Childbirth

In childbirth, acupuncture analgesia is useful for relieving labor pain and can significantly reduce the duration of labor. In the case of weakened uterine contractions, acupuncture increases the activity of the uterus. Episiotomy and subsequent suturing of the perineum can also be carried out with acupuncture analgesia. In addition, the avoidance of narcotics is advantageous for newborn infants.^[47-52]

Surgery

Acupuncture analgesia as an anesthetic for surgical procedures is indicated in selected patients who show a good response to needling in the pre-operative trial, particularly when they may be a poor surgical risk under conventional general anesthesia. The use of adjuvant drugs to potentiate the effect of the acupuncture treatment is preferred. Acupuncture can also be used in combination with the general anesthesia to reduce the dosage of anesthetic agents.^[24-58]

Advantages

- There is no adverse effect on physiological functions, whereas general anesthesia often interferes with respiration and blood pressure, for example
- There are fewer of the post-operative complications that sometimes occur after general anesthesia, such as nausea, urinary retention, constipation, and respiratory infections
- The patient remains conscious and is able to talk with the medical team during the operation so that injury of the facial and recurrent laryngeal nerve can be avoided.

While the benefits of acupuncture analgesia are many, the disadvantages must also be considered:

- The use of acupuncture is more time-consuming and in many cases may fail to bring about complete analgesia
- It is often not suitable for abdominal surgery because suppression of visceral pain and muscle relaxation may be inadequate
- It is not suitable in children because few children will tolerate the needling and keep still during major surgery
- Furthermore, the surgeon must be quick and deft, so that the operation can be finished before the patient develops tolerance to the needling.^[24-35,53-58]

Infections

Acupuncture has been reported to be effective for treating:

- Acute bacillary dysentery: Its effect is comparable with that of conventional medicines such as furazolidone, but the use of acupuncture in the first line of defense against this disease is not practicable – daily performance of needling procedures is much more complicated than administering oral drug therapy. However, when no anti-dysenteric agent is available or the patient is allergic to anti-dysenteric agents, acupuncture may occasionally be used
- Hepatitis B virus carriers
- Epidemic hemorrhagic fever, compared with steroid and supportive treatments, moxibustion shortened the period of oliguria and promoted the reduction of kidney swelling
- In treating pertussis (whooping cough), by relieving cough as well as promoting a cure.^[58-65]

Neurological disorders

In the neurological field, headaches, migraines, and neuralgia are the common painful conditions treated with the acupuncture. Strokes and their sequelae are another major indication for acupuncture. Early treatment of paresis after stroke has proved highly effective.

Because improvement in the effects of stroke also occurs naturally, there has been some doubt about the contribution of acupuncture. Comparative studies have

shown acupuncture treatments to be as effective for treating hemiplegia due to the cerebral hemorrhage as for that due to cerebral infarction. Hemiplegia due to other causes, such as brain surgery, can also be improved by acupuncture.

Peripheral nervous disorders are often treated with acupuncture.

1. Good effects for Bell's palsy have been reported in randomized controlled trials
2. Facial spasm is another peripheral nervous disorder for which acupuncture treatment may be indicated. For this condition it has been shown that wrist-ankle acupuncture is significantly better than traditional body acupuncture
3. Coma is a serious condition that can hardly be cured by acupuncture alone, but in a comparative study of two groups of patients with similar levels of coma, a significantly greater number of patients in the acupuncture group had a 50% or greater neurological recovery than those in the control group. This suggests that it is reasonable to incorporate acupuncture along with other therapeutic and supportive measures in the treatment of the comatose patient
4. Insomnia can also be treated successfully with acupuncture. In randomized control trials, both auricular acupressure and auricular acupuncture had a hypnotic effect.

Respiratory disorders

Acupuncture is often used in treating respiratory disorders.

- Allergic rhinitis is one of the major indications. In controlled studies, it has been shown that acupuncture is more effective than antihistamine drugs in the treatment of allergic rhinitis. Acupuncture's lack of side-effects is a distinct advantage in treating this condition; however, its protective effect against allergen-provoked rhinitis has not been verified
- The acute symptoms of tonsillitis can be effectively relieved with acupuncture. Since there is no information about the incidence of complications secondary to tonsillitis treated with the acupuncture, in clinical practice antibiotic therapy should still be considered the treatment of choice for acute tonsillitis
- Although, there are conflicting results from controlled trials in treating bronchial asthma with acupuncture, the majority of the reports suggest that acupuncture is effective and that the effect is related to the points used.

Digestive disorders

- Epigastric pain is a common symptom in diseases of the stomach, including peptic ulcer, acute, and chronic gastritis, and gastric spasm. Acupuncture provides satisfactory relief of epigastric pain – significantly better than injections of anisodamine or morphine

plus atropine, as shown in randomized controlled trials

- Another common symptom of digestive disorders is nausea and vomiting. This can be due to a disordered function of the stomach, but it is more often a symptom or sign of generalized disorders
- Irritable colon syndrome and chronic ulcerative colitis are often difficult to treat with conventional medication. For these diseases, acupuncture may serve as a complementary or alternative therapeutic measure.

Blood disorders

Among various blood disorders, leukopenia is the most suitable for acupuncture treatment.

Urogenital disorders

- Urinary retention due to functional disorders, with no organic obstruction, is often treated with acupuncture. For postpartum or post-operative urinary retention, successful micturition usually occurs immediately after one session of needling. It is probably for this reason that controlled studies on this subject have been neglected
- Acupuncture is not only useful for relieving renal colic, but also for expelling urinary stones (if they are not too large), because it dilates the ureter
- Sexual disorders are often treated with acupuncture, but conclusive results based on methodologically sound clinical studies are still lacking
- In women, it has been shown that acupuncture can lower urethral pressure and relieve urethral syndrome
- Acupuncture has also been successfully used as a prophylaxis against recurrent lower urinary tract infections.^[65-73]

Gynecological and obstetric disorders

- Primary dysmenorrhea, a painful condition, is one of the major indications for acupuncture in the field of gynecological disorders. Acupuncture relieves pain and also regulates the motility of the uterus to facilitate menstrual discharge and further alleviate the pain
- Premenstrual syndrome is characterized by cyclical mood changes and is a common condition in women of fertile age. In a controlled study, the majority of the patients receiving acupuncture gained relief from symptoms and no recurrence in the 6-month follow-up
- Acupuncture in pregnant women should be undertaken with care. In early pregnancy, acupuncture at the upper limb points can be used for the prevention and treatment of morning sickness
- Acupuncture stimulates milk secretion after childbirth and can be used to treat deficient lactation due to mental lability or depression. The clinical use of acupuncture to promote lactation has also been demonstrated in a randomized controlled study.^[73-76]

Cardiovascular disorders

- Acupuncture is suitable for treating primary hypotension and early essential hypertension. It has been reported that the influence of acupuncture on hypertension might be related to its regulatory effect on the level of serum nitrogen monoxide
- Encouraging results have been reported for a number of controlled studies on the treatment of heart disease with acupuncture, particularly in psychosomatic heart disorders, such as cardiac neurosis. In coronary heart disease, acupuncture has been shown by various authors to be effective in relieving angina pectoris. Its beneficial influence has been demonstrated during the coronary arteriography
- In order to avoid unexpected accidents, however, special attention should be paid to the treatment of heart disease. Acupuncturists must be able to differentiate between angina pectoris and an acute myocardial infarction.^[70-78]

Psychiatric disorders and mental disturbances

- Acupuncture is being increasingly used in psychiatric disorders. The effect of acupuncture on depression (including depressive neurosis and depression following stroke) has been documented repeatedly in controlled studies. (Acupuncture is comparable with an amitriptyline in the treatment of depression but has fewer side-effects. In addition, acupuncture has been found to be more effective in depressive patients with the decreased excretion of 3-methyl-4-hydroxy-phenylglycol [the principal metabolite of the central neurotransmitter norepinephrine], while amitriptyline is more effective for those with inhibition in the dexamethasone suppression test. This suggests that these two therapies work through different mechanisms. There have also been reports that, in controlled trials of schizophrenia treatment, acupuncture might have a better effect than chlorpromazine)
- Acupuncture (auricular acupressure) is much more effective than psychotherapy in the treatment of competition stress syndrome, and is worth further study
- Acupuncture treatment has also been used in patients who wish to give up smoking. The conclusions of different researchers are conflicting, however. Some favor acupuncture, while others dismiss its value
- Acupuncture has also been reported to be useful for treating alcohol recidivism.

Paediatric disorders

- Diarrhea in infants and young children is still a daunting problem worldwide, particularly in developing countries
- Convulsions due to high fever are not infrequently encountered in infants and young children
- Although, the specific treatment for pertussis

is antimicrobials, the paroxysmal coughing is usually very distressing. There has been a report that acupuncture could hasten the cure as well as relieving the cough

- There are two controlled studies indicating that acupuncture may be of some help in the treatment of Tourette syndrome in children.^[78-85]

Disorders of the sense organs

- Deaf-mute children were once extensively treated with acupuncture in China, but no methodologically sound reports have ever shown that acupuncture therapy had any real effectiveness
- Acupuncture might be useful in the treatment of Meiere disease for relieving symptoms and also for reducing the frequency of attacks. It seems to be more effective than conventional drug therapy (betahistine, nicotinic acid and vitamin B₆)
- Tinnitus is often difficult to treat. Traditionally acupuncture has been believed to be effective for treating tinnitus
- Acupuncture might be helpful in the treatment of simple epistaxis unassociated with generalized or local disease, but only one report of a randomized controlled clinical trial is available.^[55-79]

Skin diseases

- In a randomized controlled clinical trial on chloasma, acupuncture had a significantly better effect than vitamins C and E (224)
- Some evidence favoring acupuncture treatment of herpes zoster (human [alpha] herpesvirus 3) has been reported
- Acupuncture is known to have an antipruritic effect
- Acupuncture with the dermal needles (seven-star or plum-blossom needles) has traditionally been used in the treatment of neurodermatitis, but confirmation of its effect in a controlled clinical trial was only recently reported
- For the treatment of acne vulgaris, acupuncture, particularly ear acupuncture, is worth recommending if the reported therapeutic effects can be further proved.^[60-82]

Cancers

No controlled study has been reported on the efficacy of acupuncture in the treatment of cancer itself. However, acupuncture still has uses in cancer treatments. One is to relieve cancer pain, and the other is to control the adverse reactions to radiotherapy and chemotherapy. For cancer pain, it has been reported that acupuncture provided an immediate analgesic effect similar to that of codeine and pethidine, with a more marked effect after use for 2 months. The effect was comparable with that achieved using the analgesic steps recommended by world health organization. For radiotherapy and chemotherapy, acupuncture can greatly lessen the adverse reactions in

the digestive and nervous systems, as well as providing protection against damage to hematopoiesis.^[65-85]

Other reports

- Obesity and hyperlipidemia are becoming increasingly important medical issues
- Acupuncture may be of benefit to patients with non-insulin-dependent diabetes mellitus. Its efficacy has been shown to be superior to that of placebos and comparable with that of tolbutamide
- Anisodamine is effective in treating excessive salivation induced by drugs (usually antipsychotics), but acupuncture seems to be more effective
- There are also reports on the treatment of Sjögren syndrome (Sicca syndrome), Raynaud syndrome, Stein-Leventhal syndrome (polycystic ovary syndrome), and Tietze syndrome (costochondritis), which indicate beneficial effects from acupuncture treatment.

CONCLUSION

Acupuncture has been used thousands of years to treat a variety of diseases and symptoms. The mechanisms of acupuncture's effects are not completely understood. The ancient method of acupuncture has gained significant popularity in our era, particularly among non-Asian populations. Because of its long history of use, safety, and reports of efficacy, more patients select acupuncture as part of their therapeutic plan. Although, thorough clinical trials of the reported benefits of acupuncture as well as understanding of its mechanism of action lag behind its widespread use, physicians ought to become familiar with its potential applications for their patients. Some physicians may wish to expand the scope of his or her practice by taking additional training to administer acupuncture. However, even if one does not add this training, knowing how to refer to credible, well-trained acupuncturists and for what indications is increasingly important in the evolving model of integrative medicine, combining the best of both scientific medicine and traditional systems of care.^[69-87]

REFERENCES

1. Stux G, Pomeranz G. Scientific Basis of Acupuncture: Acupuncture Textbook and Atlas. New York, NY: Springer Verlag; 1987.
2. Rubik B. Can Western science provide a foundation for acupuncture? *Altern Ther Health Med* 1995;1:41-7.
3. Helms JM. An overview of medical acupuncture. *Altern Ther Health Med* 1998;4:35-4.
4. Ulett GA, Han S, Han JS. Electroacupuncture: Mechanisms and clinical application. *Biol Psychiatry* 1998;44:129-38.
5. Lewith GT, Machin D. On the evaluation of the clinical effects of acupuncture. *Pain* 1983;16:111-27.
6. Pomeranz B, Stux G. Acupuncture analgesia for chronic pain: Brief survey of clinical trials. *Scientific Bases of Acupuncture*. Berlin/Heidelberg: Springer-Verlag; 1989. p. 197-9.
7. Richardson PH, Vincent CA. Acupuncture for the treatment of pain: A review of evaluative research. *Pain* 1986;24:15-40.
8. Rosted P. Introduction to acupuncture in dentistry. *Br Dent J* 2000;189:136-40.
9. Pomeranz B. Acupuncture analgesia for chronic pain: Brief survey of clinical trials. In: Pomeranz B, Stux G, editors. *Scientific Bases of Acupuncture*. Berlin/Heidelberg: Springer-Verlag; 1989. p. 197-9.
10. Richardson PH, Vincent CA. Acupuncture for the treatment of pain: A review of evaluative research. *Pain* 1986;24:15-40.
11. Blom M, Dawidson I, Angmar-Månsson B. The effect of acupuncture on salivary flow rates in patients with xerostomia. *Oral Surg Oral Med Oral Pathol* 1992;73:293-8.
12. Lundberg T. Peripheral effects of sensory nerve stimulation (acupuncture) in inflammation and ischemia. *Scand J Rehabil Med Suppl* 1993;29:61-86.
13. Tao DJ. Research on the reduction of anxiety and depression with acupuncture. *Am J Acupunct* 1993;21:327-9.
14. Tiran D, Mack S. *Complementary Therapies for Pregnancy and Childbirth*. 2nd Edt, London: Elsevier Health Sciences; 2000. p. 79.
15. White A, Ernst E. *Acupuncture: A Scientific Appraisal*. Elsevier Health Sciences; 1999. p. 1.
16. Robson T. *An Introduction to Complementary Medicine* Allen and Unwin; 2004. p. 90.
17. Prioreschi P. *A history of medicine* 2004; Horatius Press 2: p. 147-8.
18. Melzack R, Stillwell DM, Fox EJ. Trigger points and acupuncture points for pain: Correlations and implications. *Pain* 1977;3:3-23.
19. Liao SJ. Acupuncture points: Coincidence with motor points of skeletal muscles. *Arch Phys Med Rehabil* 1975;56:550.
20. Shang C. Singular point, organizing center and acupuncture point. *Am J Chin Med* 1989;17:119-27.
21. Kellner G. Bau und function der haut. *Dtsch Ztschr Akup* 1966;3:1-31.
22. Kho H, Robertson EN. The mechanisms of acupuncture analgesia: Review and update. *Am J Acupunct* 1997;25:261-81.
23. Dowson DI, Lewith GT, Machin D. The effects of acupuncture versus placebo in the treatment of headache. *Pain* 1985;21:35-42.
24. Loh L, Nathan PW, Schott GD, Zilkha KJ. Acupuncture versus medical treatment for migraine and muscle tension headaches. *J Neurol Neurosurg Psychiatry* 1984;47:333-7.
25. Tavola T, Gala C, Conte G, Invernizzi G. Traditional Chinese acupuncture in tension-type headache: A controlled study. *Pain* 1992;48:325-9.
26. Vincent CA. A controlled trial of the treatment of migraine by acupuncture. *Clin J Pain* 1989;5:305-12.
27. Hansen PE, Hansen JH. Acupuncture treatment of chronic facial pain – A controlled cross-over trial. *Headache* 1983;23:66-9.
28. Johansson A, Wenneberg B, Wagersten C, Haraldson T. Acupuncture in treatment of facial muscular pain. *Acta Odontol Scand* 1991;49:153-8.
29. List T. Acupuncture in the treatment of patients with craniomandibular disorders. Comparative, longitudinal and methodological studies. *Swed Dent J Suppl* 1992;87:1-159.
30. David J, Modi S, Aluko AA, Robertshaw C, Farebrother J. Chronic neck pain: A comparison of acupuncture treatment and physiotherapy. *Br J Rheumatol* 1998;37:1118-22.
31. Coan RM, Wong G, Coan PL. The acupuncture treatment of neck pain: A randomized controlled study. *Am J Chin Med* 1981;9:326-32.
32. Petrie JP, Hazleman BL. A controlled study of acupuncture in neck pain. *Br J Rheumatol* 1986;25:271-5.
33. Karen D. True acupuncture versus sham acupuncture and conventional sports medicine therapy for plantar fasciitis pain: A controlled, double blind study. *Int J Clin Acupunct* 1991;2:247-53.
34. Lehmann TR, Russell DW, Spratt KF, Colby H, Liu YK, Fairchild ML, et al. Efficacy of electroacupuncture and TENS in the rehabilitation of chronic low back pain patients. *Pain* 1986;26:277-90.

35. Macdonald AJ, Macrae KD, Master BR, Rubin AP. Superficial acupuncture in the relief of chronic low back pain. *Ann R Coll Surg Engl* 1983;65:44-6.
36. Mendelson G, Selwood TS, Kranz H, Loh TS, Kidson MA, Scott DS. Acupuncture treatment of chronic back pain. A double-blind placebo-controlled trial. *Am J Med* 1983;74:49-55.
37. Junnila SY. Acupuncture superior to piroxicam in the treatment of osteoarthritis. *Am J Acupunct* 1982;10:341-5.
38. Lao L, Bergman S, Langenberg P, Wong RH, Berman B. Efficacy of Chinese acupuncture on postoperative oral surgery pain. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1995;79:423-8.
39. Sung YF, Kutner MH, Cerine FC, Frederickson EL. Comparison of the effects of acupuncture and codeine on postoperative dental pain. *Anesth Analg* 1977;56:473-8.
40. Rosted P. The use of acupuncture in dentistry: A systematic review. *Acupuncture-Medicine* 1998;16:43-8.
41. Wang XY. Acupuncture and moxibustion in the treatment of asymptomatic hepatitis B virus carriers by strengthening the body resistance to eliminate pathogenic factors: A clinical experimental study. *Int J Clin Acupunct* 1991;2:117-25.
42. Liu YJ. Needling scalp points in treating cerebrovascular diseases: A report of 78 cases. *Int J Clin Acupunct* 1997;8:231-4.
43. Si QM, Wu GC, Cao XD. Effects of electroacupuncture on acute cerebral infarction. *Acupunct Electrother Res* 1998;23:117-24.
44. Hu HH, Chung C, Liu TJ, Chen RC, Chen CH, Chou P, et al. A randomized controlled trial on the treatment for acute partial ischemic stroke with acupuncture. *Neuroepidemiology* 1993;12:106-13.
45. Johansson K, Lindgren I, Widner H, Wiklund I, Johansson BB. Can sensory stimulation improve the functional outcome in stroke patients? *Neurology* 1993;43:2189-92.
46. Gosman-Hedström G, Claesson L, Klingensstierna U, Carlsson J, Olausson B, Frizell M, et al. Effects of acupuncture treatment on daily life activities and quality of life: A controlled, prospective, and randomized study of acute stroke patients. *Stroke* 1998;29:2100-8.
47. Kjendahl A, Sällström S, Osten PE, Stanghelle JK, Borchgrevink CF. A one year follow-up study on the effects of acupuncture in the treatment of stroke patients in the subacute stage: A randomized, controlled study. *Clin Rehabil* 1997;11:192-200.
48. Wong AM, Su TY, Tang FT, Cheng PT, Liaw MY. Clinical trial of electrical acupuncture on hemiplegic stroke patients. *Am J Phys Med Rehabil* 1999;78:117-22.
49. Liang RA. Clinical observation and experimental studies on the treatment of sequelae of stroke by needling temporal points. *Int J Clin Acupunct* 1993;4:19-26.
50. Zhang LH. A control study of scalp acupuncture in treating aphasia after acute cerebrovascular disease. *World J Acupuncture-Moxibustion* 1994;4:20-3.
51. Lewith GT, Field J, Machin D. Acupuncture compared with placebo in post-herpetic pain. *Pain* 1983;17:361-8.
52. Lin L. Through puncture compared with traditional acupuncture in treating facial paralysis. *Int J Clin Acupunct* 1997;8:73-5.
53. Frost EA. Acupuncture for the comatose patient. *Am J Acupunct* 1976;4:45-8.
54. Yu DY, Lee SP. Effect of acupuncture on bronchial asthma. *Clin Sci Mol Med* 1976;51:503-9.
55. Joshi YM. Acupuncture in bronchial asthma. *J Assoc Physicians India* 1992;40:327-31.
56. Tandon MK, Soh PF. Comparison of real and placebo acupuncture in histamine-induced asthma. A double-blind crossover study. *Chest* 1989;96:102-5.
57. Batra YK. Acupuncture in corticosteroid-dependent asthmatics. *Am J Acupunct* 1986;14:261-4.
58. Jobst K, Chen JH, McPherson K, Arrowsmith J, Brown V, Efthimiou J, et al. Controlled trial of acupuncture for disabling breathlessness. *Lancet* 1986;2:1416-9.
59. Xu PC. Clinical observation of treatment of acute epigastralgia by puncturing liangqiu and weishu acupoints. *Int J Clin Acupunct* 1991;2:127-30.
60. Vickers AJ. Can acupuncture have specific effects on health? A systematic review of acupuncture antiemesis trials. *J R Soc Med* 1996;89:303-11.
61. Wang HH. A study in the effectiveness of acupuncture analgesia for colonoscopic examination compared with conventional premedication. *Am J Acupunct* 1992;20:217-21.
62. Wang HH, Chang YH, Liu DM, Ho YJ. A clinical study on physiological response in electroacupuncture analgesia and meperidine analgesia for colonoscopy. *Am J Chin Med* 1997;25:13-20.
63. Diehl DL. Acupuncture for gastrointestinal and hepatobiliary disorders. *J Altern Complement Med* 1999;5:27-45.
64. Aydin S, Ercan M, Caşkurlu T, Taşçı AI, Karaman I, Odabaş O, et al. Acupuncture and hypnotic suggestions in the treatment of non-organic male sexual dysfunction. *Scand J Urol Nephrol* 1997;31:271-4.
65. Aune A, Alraek T, LiHua H, Baerheim A. Acupuncture in the prophylaxis of recurrent lower urinary tract infection in adult women. *Scand J Prim Health Care* 1998;16:37-9.
66. Helms JM. Acupuncture for the management of primary dysmenorrhea. *Obstet Gynecol* 1987;69:51-6.
67. Chen BY. Acupuncture normalizes dysfunction of hypothalamic-pituitary-ovarian axis. *Acupunct Electrother Res* 1997;22:97-108.
68. Dundee JW. Acupressure reduces morning sickness. *J R Soc Med* 1988;84:456-7.
69. Cardini F, Weixin H. Moxibustion for correction of breech presentation: A randomized controlled trial. *JAMA* 1998;280:1580-4.
70. Wu CX. Scalp acupuncture in treating hypertension in the elderly. *Int J Clin Acupunct* 1997;8:281-4.
71. Yu P. Clinical study on auricular pressure treatment of primary hypertension. *Int J Clin Acupunct* 1991;2:37-40.
72. Ballegaard S. Acupuncture and the cardiovascular system: A scientific challenge. *Acupuncture in Medicine* 1998;16:2-9.
73. Ballegaard S, Jensen G, Pedersen F, Nissen VH. Acupuncture in severe, stable angina pectoris: A randomized trial. *Acta Med Scand* 1986;220:307-13.
74. Ballegaard S, Pedersen F, Pietersen A, Nissen VH, Olsen NV. Effects of acupuncture in moderate, stable angina pectoris: A controlled study. *J Intern Med* 1990;227:25-30.
75. Li CD. Treating post-stroke depression with "antidepressive" acupuncture therapy: A clinical study of 21 cases. *Int J Clin Acupunct* 1994;5:389-93.
76. Wen HL. Treatment of drug addiction by acupuncture and electrical stimulation. *Asian J Med* 1993;9:138-41.
77. Culliton PD, Kiresuk TJ. Overview of substance abuse acupuncture treatment research. *J Altern Complement Med* 1996; 2:149-59.
78. He D, Berg JE, Høstmark AT. Effects of acupuncture on smoking cessation or reduction for motivated smokers. *Prev Med* 1997;26:208-14.
79. Waite NR, Clough JB. A single-blind, placebo-controlled trial of a simple acupuncture treatment in the cessation of smoking. *Br J Gen Pract* 1998;48:1487-90.
80. White AR, Resch KL, Ernst E. Randomized trial of acupuncture for nicotine withdrawal symptoms. *Arch Intern Med* 1998;158:2251-5.
81. Bullock ML. Controlled trial of acupuncture for severe recidivist alcoholism. *Lancet* 1990;335:20-1.
82. Bullock ML. Acupuncture treatment of alcoholic recidivism: A pilot study. *Am J Acupunct* 1987;15:313-20.
83. Bullock ML, Culliton PD, Olander RT. Controlled trial of acupuncture

- for severe recidivist alcoholism. Lancet 1989;1:1435-9.
84. Thorer H. Acupuncture after alcohol consumption: A sham controlled assessment. Acupuncture in Medicine 1996;14:63-7.
85. Li YQ. Swift needling of zusanli and changqiang in treating infantile diarrhea. Int J Clin Acupunct 1997;8:187-9.
86. Mekhamer A. Experience with unexplained otalgia. Pain 1987;36:223.
87. Lundeberg T, Bondesson L, Thomas M. Effect of acupuncture on experimentally induced itch. Br J Dermatol 1987;117:771-7.

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