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ACUPUNCTURE: More than Pain Management

A review of the research and potential
of an ancient therapy in modern times

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Helping the Body Heal Itself

It is now widely accepted across health care disciplines throughout the world that acupuncture can be effective in treating such painful conditions as migraine headaches, and low back, neck and knee pain, as well as a range of painful musculoskeletal conditions. Less well known is some of the promising research showing that this ancient form of treatment can be valuable in treating such diverse conditions as infertility, depression and allergic rhinitis (hay fever) — to name a few.

Most people know that acupuncture involves the insertion of thin needles into specific points throughout the body, and some might speculate that doing this could somehow block pain. Confusion over the legitimacy of acupuncture's mechanisms, however, has slowed its acceptance in its wider applications, despite its potential as a safe, drug-free alternative. This white paper explores how acupuncture can stimulate the body's self-healing capacity — making it an ideal alternative treatment for a broad range of health issues — and examines a key limitation.

Traditional and Modern Theories

For more than 2,000 years acupuncturists have described acupuncture as a therapy that restores the free flow of a natural phenomenon called “qi,” an enigmatic concept prevalent in traditional East Asian culture and usually translated in the West today as “vital energy.” Qi is said to flow through channels (sometimes called “meridians”) in a manner similar to how water flows in a complex irrigation system. If water in an irrigation canal became blocked, it would cause a backup that over-waters plants upstream and under-waters plants downstream. In much the same manner, qi blockage in a channel causes ill health in the body/mind system when some cells of the body receive too much or too little qi. Free up this blockage and the body/mind system will heal itself, that is, as long as the damage done has not gone too far.

Many acupuncturists today have looked to more modern explanations regarding how acupuncture works. Scientists are finding that needling acupuncture points stimulates the nervous system, causing adjustments to body chemistry in the muscles, spinal cord and brain. This process changes the experience of pain and can trigger the release of a wide range of chemicals, including hormones, that influence the body's own internal regulating system. The result is an improved balance of biochemical factors that can lead to a reduction of various symptoms, enhanced energy, and a better sense of physical and emotional well-being.

The claim that acupuncture has the ability to facilitate the more optimal use of the body's own resources may seem to some to be far-fetched, but consider a recent development that is being hailed as a potential breakthrough in medical science.

Bioelectronic Medicine

Over the last several years, a small but dedicated group of scientists have been researching electric stimulation of nerves to cause the production of the body's own anti-inflammatory molecules that act in a manner similar to those mimicked by anti-inflammatory drugs. One such scientist is neurosurgeon Kevin Tracey, president of the Feinstein Institute for Medical Research. One of Dr. Tracey's studies showed that using a tiny implant to stimulate the vagus nerve with electricity could prevent or repair harmful inflammation.

In the world's first clinical trial to treat rheumatoid arthritis in patients with an implantable nerve stimulator, two-thirds of the 18 patients enrolled in the ongoing trial improved, while some felt little or no pain just weeks after receiving the implant. Currently, researchers are developing implants that can communicate directly with the nervous system in the hopes of treating everything from physical injuries to rheumatoid arthritis to Crohn's disease and the common cold.

Pharmaceutical giant GSK has invested more than 50 million dollars in R&D in this field and put up a one million dollar prize to the first team to develop a fully functional device. The race is on to build a device to "hack" the nervous system to help the body to heal itself, and there is much excitement about the potential in this approach.

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By examining the evidence that has been compiled over decades of research investigating acupuncture's mechanisms in a wide range of conditions, a theme emerges that helps to explain acupuncture's potential: Like the hoped for promise of the "new" science of bioelectronic medicine, acupuncture hacks into the systems that monitor and adjust the body's own resources, thus facilitating self-healing and symptom management.

Here is a look at some of the evidence supporting acupuncture's effectiveness and how it facilitates self-healing.

A Safe and Natural Pain Reliever

The role of acupuncture as a primary approach for pain relief has never been more relevant. In fact, in response to the North American opioid epidemic, the U.S. Centers for Disease Control and Prevention (CDC) recently issued new recommendations to physicians for treating pain.¹ The first of these advises that whenever possible, non-drug and non-opioid drug therapies should be used initially rather than opioids. Non-opioid drugs like non-steroidal anti-inflammatory drugs (NSAIDs), including aspirin, ibuprofen and naproxen, however, are known to have serious adverse effects, including severe gastrointestinal and liver damage.² This dilemma leaves non-drug therapies, such as acupuncture, as the best option for easing pain without these serious or even fatal side effects.

The main non-drug therapies that have shown effectiveness in treating chronic pain are acupuncture therapy, chiropractic therapy, cognitive behavioral therapy, massage therapy and physical therapy. Out of all of these non-drug therapies, only acupuncture has been shown through extensive animal research to actually stimulate the production of “endogenous opioids” — the body’s own natural opiate-like substances. While not to say that acupuncture is always more effective than other non-drug therapies, physicians and those suffering from pain who worry about restrictions to opioid pain medications should take note that acupuncture can induce these natural endogenous opioids, and therefore provide an important alternative to synthetic opioids.

Reviews of recent animal studies show that acupuncture, including electro-acupuncture, causes significant changes in an array of bioactive chemicals — such as serotonin and norepinephrine, as well as endogenous opioids — in peripheral injury sites, the spinal cord and supraspinal structures through peripheral, spinal and supraspinal mechanisms.³

While some have questioned the validity of their research methods, the World Health Organization (WHO) produced the following list of conditions as, “Diseases, symptoms or conditions for which acupuncture has been proved—through controlled trials—to be an effective treatment.”⁴

- Adverse reactions to radiotherapy and/or chemotherapy
- Allergic rhinitis (including hay fever)
- Biliary colic
- Depression (including depressive neurosis and depression following stroke)
- Dysentery, acute bacillary
- Dysmenorrhoea, primary
- Epigastralgia, acute (in peptic ulcer, acute and chronic gastritis, and gastrospasm)
- Facial pain (including craniomandibular disorders)
- Headache
- Hypertension, essential Hypotension, primary
- Induction of labor
- Knee pain
- Leukopenia
- Low back pain
- Malposition of fetus
- Morning sickness
- Nausea and vomiting
- Neck pain
- Pain in dentistry (including dental pain and temporomandibular dysfunction)
- Periarthritis of shoulder
- Postoperative pain
- Renal colic
- Rheumatoid arthritis
- Sciatica
- Sprain stroke
- Tennis elbow

Additionally, the WHO listed 54 conditions as, “Diseases, symptoms, or conditions for which the therapeutic effect of acupuncture has been shown but for which further proof is needed.” This list included such diverse conditions as: bell’s palsy, fibromyalgia, osteoarthritis, and ulcerative colitis.

Source: <http://apps.who.int/iris/handle/10665/42414>
<http://apps.who.int/iris/bit-stream/10665/42414/1/9241545437.pdf>

Infertility

Acupuncture and other modalities of Chinese/East Asian medicine have been used to treat women's health for many centuries. Most, but not all, of the recent studies on acupuncture and fertility are those researching acupuncture's role in assisting in-vitro fertilization (IVF).

One study evaluated the effect of acupuncture on the pregnancy rate in assisted reproduction therapy (ART) by comparing a group of patients receiving acupuncture treatment shortly before and after embryo transfer with a control group receiving no acupuncture. Clinical pregnancies were documented in 34 of 80 patients (42.5%) in the acupuncture group, whereas the pregnancy rate was only 21 out of 80 patients (26.3%) in the control group. The researchers concluded that acupuncture is a useful tool for improving pregnancy rates after ART.⁵

A review of research on acupuncture for women's reproductive disorders, focusing on both clinical findings and experimental research on acupuncture's mechanisms of action, found that acupuncture may improve menstrual health and coping for women experiencing delays in becoming pregnant. In particular, acupuncture was shown to regulate uterine and ovarian blood flow (OBF), which can encourage a thicker uterine wall and improve embryo implantation. This effect was thought to take place as a reflex response via the ovarian sympathetic nerves.⁶

Male fertility, especially sperm production and motility, has also been shown to improve with acupuncture. In a recent animal study, electro-acupuncture was found to enhance germ cell proliferation. This action is believed to facilitate the recovery of sperm production (spermatogenesis) and may restore normal semen parameters in subfertile patients.⁷

In addition, acupuncture has been demonstrated to be very safe when used for fertility treatment. The risk of miscarriage may increase if incorrect acupuncture points/techniques are used during pregnancy, but acupuncturists are taught these contraindications. The key is for patients to seek treatment from an adequately trained acupuncturist, who may be able to help even if they don't specialize in fertility. (Addendum 1)

Veterinary acupuncture is also spreading rapidly and is used in the treatment of farm animals, pets and thoroughbred racehorses. Acupuncture is indicated for some cases of paralysis, noninfectious inflammation, allergies and pain. For small animals, the following are some of the general conditions that may be treated with acupuncture:

- Musculoskeletal problems, such as arthritis, intervertebral disk disease or traumatic nerve injury
- Respiratory problems, such as feline asthma
- Skin problems such as lick granulomas and allergic dermatitis
- Gastrointestinal problems such as diarrhea
- Selected reproductive problems

For large animals, acupuncture is used for paralysis, noninfectious inflammation and pain, as well as:

- Musculoskeletal problems such as sore backs or downer cow syndrome
- Neurological problems such as facial paralysis
- Skin problems such as allergic dermatitis
- Respiratory problems such as heaves and "bleeders"
- Gastrointestinal problems such as nonsurgical colic
- Selected reproductive problems

Perhaps the most significant validation of acupuncture, the International Veterinary Acupuncture Society (IVAS) has served as a global leader in veterinary acupuncture since 1974, and in 2014, the American Veterinary Medical Association (AVMA) overwhelmingly voted to approve the American Academy of Veterinary Acupuncture (AAVA) admission to the AVMA's House of Delegates (HOD) as a constituent veterinary organization.⁹

Depression

Depression is a common health disorder affecting an estimated 350 million people worldwide. Once thought to be a sign of emotional or mental weakness, depression is now recognized as an inflammatory brain disorder that can contribute to a wide range of physical problems. While depression was not usually recognized as a unique health disorder in Chinese/East Asian medicine until recently, there is now a growing body of research on acupuncture's effective role in treating this illness.

Researchers from the Beijing University of Chinese Medicine recently conducted a study looking at the effect of acupuncture on inflammation and depression symptoms. In particular, this study explored whether the positive effects on depression seen with acupuncture are related to anti-inflammatory effects.¹⁰

Using a rat model of depression, the researchers performed biochemical analysis post-treatment to better understand the internal changes brought on from acupuncture. They also used a control group treated with fluoxetine (Prozac) to help compare effects.

They found that both the acupuncture and the Prozac treatment group reversed depression symptoms. While there were many positive biochemical changes in the acupuncture treatment group, they also found that acupuncture significantly decreased pro-inflammatory chemistry (cytokines) in the areas involved with depression. The researchers concluded that "acupuncture had antidepressant-like effects, and its mechanism of action appeared to involve the inhibition of pro-inflammatory cytokines."¹¹

“...Acupuncture had antidepressant-like effects, and its mechanism of action appeared to involve the inhibition of proinflammatory cytokines.”

In a recent meta-analysis, researchers concluded that the efficacy of acupuncture as a stand-alone therapy was comparable to antidepressants in improving clinical response and alleviating symptom severity of major depressive disorder (MDD). Also, acupuncture was superior to antidepressants and waitlist controls in improving both response and symptom severity of post-traumatic stress disorder (PTSD). The incidence of adverse events with acupuncture was significantly lower than antidepressants.¹² The American military, as well as the U.S. Veterans Administration, has been successfully using acupuncture for several years not only for pain control of wounded soldiers -- known as Battlefield Acupuncture -- but also for treating PTSD and depression.

A randomized controlled trial of acupuncture and counseling for patients presenting with depression, after having consulted their general practitioner in primary care, showed that both interventions were associated with significantly reduced depression at three months when compared to usual care alone.¹³

Allergic Rhinitis (Hay Fever)

Acupuncture has been used for millennia to treat allergic diseases, including both intermittent rhinitis and persistent rhinitis, and its success in treating these conditions is now being recognized in mainstream medicine. The use of acupuncture for patients seeking a non-drug therapy was recommended in the physicians' Clinical Practice Guidelines of the American Academy of Otolaryngology – Head and Neck Surgery Foundation 2014. A growing body of research confirms acupuncture's excellent results in this area and sheds light on some of the body chemistry changes involved.

A previous theory for acupuncture's effectiveness in allergic rhinitis proposed that acupuncture may reduce (down-regulate) pro-inflammatory neuropeptides, pro-inflammatory cytokines and neurotrophins, while also modulating a receptor which plays a central role in allergic rhinitis (TRPV1). Acupuncture was also recently found to induce the proliferation of helpful opioid-containing macrophages in inflamed tissues.¹⁴

Acupuncture and Health Coverage

Many providers of health care funding in various countries, both public programs and private health care insurers, are beginning to include acupuncture because of its cost-effectiveness, and because consumers have been willing to pay for this alternative treatment out-of-pocket.

In the U.S., some large insurance providers are looking closely at consumer demand for acupuncture and offering discounted plans. Instead of being provided as a "covered service" where the health plan pays a fee for acupuncture services, acupuncturists participating in discount plans offer a discount off their normal treatment charges.

The growing trend is that some companies and unions with self-insured plans – which is expected to be as high as 80 percent of the U.S. market by 2017 – are funding coverage for their members. In some cases, injuries sustained while on the job or in a motor vehicle accident may be covered for acupuncture care under workers' compensation or automobile insurance policies. In countries such as New Zealand, public insurance covering injuries sustained in accidents often cover acupuncture services.

Consumers should check with their insurance agency to see if acupuncture is covered.



The Limits of Acupuncture

Throughout this paper we have highlighted acupuncture's ability to facilitate the better use of the body's own resources, giving it the potential to be effective for a remarkably wide range of health disorders. When a health issue does not spontaneously heal, it does not necessarily mean it is beyond the body's resources to do so. Spark those resources with a therapy like acupuncture, and you have a chance to improve the health condition. But what about acupuncture's limits?

In theory, this too can be understood by keeping in mind that acupuncture works by stimulating the body's own resources. The limit of acupuncture is the limit of the body's resources. In practice, knowing the limits of a therapy that stimulates the body's own resources can get complicated but roughly falls into two broad categories: disorders beyond the limits of anyone's resources and disorders beyond a particular person's ability to self-heal. We used the analogy that the traditional theory of qi flow is like an irrigation system and that a blockage would cause damage from over- and under-watering. Restore the normal flow and the plants return themselves to health naturally – as long as the damage has not gone past the point of no return. Some health disorders can go beyond what the body's resources could possibly repair, putting them beyond what acupuncture can treat. Many congenital disorders, for example, fall into this category, as would irreversible injuries such as a severed spinal cord.

Other health issues, however, are types that under normal circumstances would self-heal, but may not for a given individual because their resources are not sufficient enough to heal the problem. For example, a small cut on the foot of a diabetic or someone with a vascular disease may resist self-healing. In such cases, the boost acupuncture gives to facilitate the more optimal use of the body's own resources may or may not be enough to spark natural repair. Whatever category a particular health disorder may fall into, experienced acupuncturists can offer advice on the likelihood of whether acupuncture would be effective, and they will usually recommend a trial series of treatments to test their patient's responsiveness to the therapy.



The Future of Acupuncture

Looking ahead, it is clear that acupuncture is poised to make significant inroads into conventional medicine. It has the potential to become a part of every hospital's standard of care and, in fact, this is already starting to take place not only in the U.S., but internationally. The treatment is a cost-effective and safe method of relieving pain in emergency rooms, during in-patient stays and after surgery. It can lessen post-operative nausea, constipation and urinary difficulties, and have a positive impact on conditions like hypertension, anxiety and insomnia.

To ensure the highest standards of practice, acupuncturists should carry adequate credentials, as well as license, certification or registration, to practice as required by local regulations. While such license/registration does not guarantee quality of care, it does indicate that the practitioner has met certain standards regarding the safe and effective practice of acupuncture. (Addendum 1)

Driven by popular demand and a growing body of scientific evidence, acupuncture is beginning to be taken seriously by mainstream conventional medicine, which is incorporating it into holistic health programs for the good of patients and the future of health care. In order for this transition to take place most effectively, misunderstandings about acupuncture need to be addressed. We hope this white paper has helped to clarify some of those misunderstandings and encourage anyone with questions to contact the Acupuncture Now Foundation.

Addendum 1

Acupuncturist Education and Training

With the increasing popularity of acupuncture, the need for a common language to facilitate communication in teaching, research, clinical practice and exchange of information has become essential. In 1989, the World Health Organization (WHO) convened a scientific group that approved a Standard International Acupuncture Nomenclature, which is being widely disseminated and applied.

The scientific group also recommended that the WHO develop a series of statements and guidelines on acupuncture relating to basic training, safety in clinical practice, indications and contraindications, and clinical research. Guidelines for clinical research on acupuncture were issued by the WHO Regional Office for the Western Pacific in 1995. More than 50 international experts shared their knowledge and experience for these guidelines.¹⁵

WHO recommends that independently trained acupuncturists should have a minimum of 2,500 hours of training including 1,000 hours of biomedical sciences. Physicians who seek to specialize in acupuncture should complete 1,500 hours of acupuncture-focused training, while those looking to incorporate acupuncture as an adjunct to their primary biomedical services should have at least 200 hours of acupuncture-focused training. WHO also recommends that chiropractors and other health care professionals complete a full 2,500 hours of training or limit their practice to acupuncture.¹⁶



Addendum 1 Cont.

Many countries have seen the development of efforts to establish education and certification standards for training acupuncturists. In some countries, the practice of acupuncture is regulated in the same manner as the practice of medicine. Other countries leave acupuncture unregulated. But even in many of these “unregulated” countries, groups have formed to establish standards of training and testing often with the WHO recommendations as a rough guideline.

The following is a list of some organizations involved with establishing training/certification standards for the practice of acupuncture specialists.

The National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM)

NCCAOM is the only U.S. organization that validates entry-level competency in the practice of acupuncture and Oriental medicine (AOM) through professional certification. NCCAOM certification or a passing score on the NCCAOM certification examinations are documentation of competency for licensure as an acupuncturist by 43 states, plus the District of Columbia, which represents 98 percent of the states that regulate acupuncture.

All NCCAOM certification programs are currently accredited by the National Commission for Certification Agencies (NCCA). In order for the NCCAOM certification programs in acupuncture, Chinese herbology, oriental medicine and Asian bodywork therapy to remain accredited by the NCCA, the NCCAOM must adhere to strict national standards for examination development.¹⁷

The British Acupuncture Accreditation Board (BAAB)

BAAB establishes standards of professional education in acupuncture within the U.K. through a formal process of approval. The organization’s focus is on courses in universities and independent colleges where the primary emphasis is on traditional acupuncture based on East Asian oriental medicine, and which prepare students to be independent primary practitioners of acupuncture within a U.K. context. BAAB aims to meet the highest standards expected of professional regulatory bodies through clear published standards and processes.¹⁸

The British Acupuncture Council (BAcC)

BAcC is the leading self-regulatory body for the practice of traditional acupuncture in the U.K. This member-led organization is governed by an elected governing board and driven by a specialist staff team.¹⁹

The Chinese Medicine Board of Australia (the National Board)

The National Board has established the Chinese Medicine Accreditation Committee (the Accreditation Committee) to exercise a number of accreditation functions under the Health Practitioner Regulation National Law as in force in each state and territory.

The role of the Accreditation Committee is to develop and recommend accreditation standards to the board for approval. It then assesses whether programs of study and education providers are meeting the accreditation standards to decide whether or not to accredit the provider and program. The National Board considers the Accreditation Committee’s decision and their report to decide whether or not to approve an accredited program as a qualification for registration as a Chinese medicine practitioner.



Addendum 1 Cont.

Accreditation standards help to ensure that education providers give students the knowledge, skills and professional attributes to competently practice in the profession.²⁰

The Acupuncture Foundation Professional Association (AFPA)

The AFPA is the longest established independent professional register of acupuncturists and practitioners of traditional Chinese medicine in Ireland. Established in 1987, the AFPA is responsible for the regulation and maintenance of a register of acupuncturists who work within the guidelines set out in 2006 by the Department of Health and Children.

AFPA members are graduates from many colleges in Ireland and abroad and all are bound by a code of ethics and practice which is strictly enforced by the AFPA.²¹

Chinese Medicine and Acupuncture Association of Canada (CMAAC)

TCM practitioners and acupuncturists who practice in regulated Canadian provinces (British Columbia, Alberta, Ontario, Quebec and Newfoundland) must pass a provincial board exam (Pan-Canadian Examination) through their regulatory college in order to legally practice acupuncture and TCM. “TCM practitioner” and “acupuncturist” are protected titles of registered members of the regulatory college.

The mandate of the Regulatory Colleges of Traditional Chinese Medicine and Acupuncture is to protect the public by ensuring safe, professional and ethical practices that are up to date with evolving national standards for the practice of acupuncture and TCM in Canada.²²

Alberta

College and Association of Acupuncturists of Alberta (CAAA)²³

British Columbia

College of Traditional Chinese Medicine Practitioners and Acupuncturists of British Columbia (CTCMABC)²⁴

Newfoundland and Labrador

The College of Traditional Chinese Medicine Practitioners and Acupuncturists of Newfoundland and Labrador²⁵

Ontario

College of Traditional Chinese Medicine Practitioners and Acupuncturists of Ontario (CTCMPAO)

Quebec

Ordre des acupuncteurs du Québec (OAQ)²⁶

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Matthew Bauer, L.Ac.

Matthew Bauer opened up his own acupuncture and Chinese medicine practice in 1986, treating people of all ages suffering from a wide range of health disorders. Over that time, Bauer has worked with several acupuncture organizations in the U.S. and internationally, as well as serving as an expert witness for both the State of California and in private cases. He has worked extensively in the managed care industry helping to create the first managed care acupuncture-based health plans, as well as credentialing and utilization guidelines. Bauer is the author of dozens of articles and two books. He has a passion for educating people about acupuncture's potential.

Mel Hopper Koppelman, MSc

Mel Hopper Koppelman is an acupuncturist and functional medicine practitioner based in Leicester, UK. She received her BSc from NYU in 2005, her MSc from the Northern College of Acupuncture, York in 2012 and a second MSc from the University of Western States in Nutrition and Functional Medicine. She is a reviewer for a number of peer-reviewed medical journals.

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