



## RECOMMENDED ARTICLES

In this issue of the journal, the Recommended Articles are selected from the journals citing the articles of the Journal of Acupuncture and Meridian Studies and from the Journal of Pharmacopuncture (ISSN: 1226–4849).

(1) JAMA Volume 312, Number 13, 01 October 2014, 1313–1322. <http://dx.doi.org/10.1001/jama.2014.12660>

### Acupuncture for chronic knee pain: A randomized clinical trial

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#### Abstract

**Importance:** There is debate about benefits of acupuncture for knee pain.

**Objective:** To determine the efficacy of laser and needle acupuncture for chronic knee pain.

**Design, setting, and participants:** Zelen-design clinical trial (randomization occurred before informed consent), in Victoria, Australia (February 2010–December 2012). Community volunteers (282 patients aged  $\geq 50$  years with chronic knee pain) were treated by family physician acupuncturists.

**Interventions:** No acupuncture (control group,  $n=71$ ) and needle ( $n=70$ ), laser ( $n=71$ ), and sham laser ( $n=70$ ) acupuncture. Treatments were delivered for 12 weeks. Participants and acupuncturists were blinded to laser and sham laser acupuncture. Control participants were unaware of the trial.

**Main outcomes and measures:** Primary outcomes were average knee pain (numeric rating scale, 0 [no pain] to 10 [worst pain possible]; minimal clinically important difference [MCID], 1.8 units) and physical function (Western Ontario and McMaster Universities Osteoarthritis Index, 0 [no difficulty] to 68 [extreme difficulty]; MCID, 6 units) at 12 weeks. Secondary outcomes included other pain and function measures, quality of life, global change, and 1-year follow-up. Analyses were by intention-to-treat using multiple imputation for missing outcome data.

**Results:** At 12 weeks and 1 year, 26 (9%) and 50 (18%) participants were lost to follow-up, respectively. Analyses showed neither needle nor laser acupuncture significantly improved pain (mean difference;  $-0.4$  units; 95% CI,  $-1.2$  to  $0.4$ , and  $-0.1$ ; 95% CI,  $-0.9$  to  $0.7$ , respectively) or function ( $-1.7$ ; 95% CI,  $-6.1$  to  $2.6$ , and  $0.5$ ; 95% CI,  $-3.4$  to  $4.4$ , respectively) compared with sham at 12 weeks. Compared with control, needle and laser acupuncture resulted in modest improvements in pain ( $-1.1$ ; 95% CI,  $-1.8$  to  $-0.4$ , and  $-0.8$ ; 95% CI,  $-1.5$  to  $-0.1$ , respectively) at 12 weeks, but not at 1 year. Needle acupuncture resulted in modest improvement in function compared with control at 12 weeks ( $-3.9$ ; 95% CI,  $-7.7$  to  $-0.2$ ) but was not significantly different from sham ( $-1.7$ ; 95% CI,  $-6.1$  to  $2.6$ ) and was not maintained at 1 year. There were no differences for most secondary outcomes and no serious adverse events.

**Conclusions and relevance:** In patients, older than 50 years with moderate or severe chronic knee pain, neither laser nor needle acupuncture conferred benefit over sham for pain or function. Our findings do not support acupuncture for these patients.

**Keywords:** Acupuncture, Chronic knee pain, Randomized clinical trial, Sham, Needle, Laser

(2) Evidence-Based Complementary and Alternative Medicine, Volume 2012, Article ID 697096, 5 pages. <http://dx.doi.org/10.1155/2012/697096>

## Technical parameters for laser acupuncture to elicit peripheral and central effects: State-of-the-art and short guidelines based on results from the Medical University of Graz, the German Academy of Acupuncture, and the scientific literature

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### Abstract

The scientific literature in the area of laser acupuncture is rather large; however, the actual mechanisms and effects have not yet been proven in detail. Since the early days of laser acupuncture, there are still many open questions concerning technical parameters of this innovative technique. In this paper, we report about the most important technical parameters (wavelength, output power, power density, energy density, dose range, and continuous or pulsed laser) for laser acupuncture and present quantitative results for optimal laser stimulation, which allow eliciting reproducible effects in the periphery and in the brain. There are several position statements on laser acupuncture and also several review articles in scientific literature concerning clinical effectiveness of laser acupuncture. For example, the Australian Medical Acupuncture College stated recently that "the optimal energy density for laser acupuncture and biostimulation, based on current clinical experience, is 4 J/cm<sup>2</sup>". However, our results of previous research studies and of this paper clearly show that dose must be adjusted according to the individual responses.

**Keywords:** Laser acupuncture, Technical parameters, Guidelines, Scientific literature

(3) Acupuncture in Medicine, Volume 31, 6 August 2013, 282–289. <http://dx.doi.org/10.1136/acupmed-2012-010297>

## Differential brain effects of laser and needle acupuncture at LR8 using functional MRI

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### Abstract

**Objective:** While needle acupuncture is a well-accepted technique, laser acupuncture is being increasingly used in clinical practice. The differential effects of the two techniques are of interest. We examine this in relation to brain effects of activation of LR8, a putative acupuncture point for depression, using functional MRI (fMRI).

**Methods:** Sixteen healthy participants were randomised to receive low intensity laser acupuncture to LR8 on one side and needle acupuncture to the contralateral LR8. Stimulation was in an on-off block design and brain patterns were recorded under fMRI.

**Results:** Significant activation occurred in the left precuneus during laser acupuncture compared with needle acupuncture and significant activation occurred in the left precentral gyrus during needle acupuncture compared with laser acupuncture.

**Conclusions:** Laser and needle acupuncture at LR8 in healthy participants produced different brain patterns. Laser acupuncture activated the precuneus relevant to mood in the posterior default mode network while needle acupuncture activated the parietal cortical region associated with the primary motor cortex. Further investigations are warranted to evaluate the clinical relevance of these effects.

**Keywords:** Laser and needle acupuncture, LR8, Brain, Precuneus, Precentral gyrus

(4) Journal of Pharmacopuncture, Vol. 18 No. 1, p7–18, March 2015

## *Loranthus ferrugineus*: A mistletoe from traditional uses to laboratory bench

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### Abstract

**Objectives:** *Loranthus ferrugineus* (*L. ferrugineus*) from Loranthaceae, a mistletoe, is a medicinal herb used for a variety of human ailments. Traditionally, decoctions of this parasitic shrub have been mainly used to treat high blood pressure (BP)

and gastrointestinal complaints; usage which is supported by experimental based pharmacological investigations. Nonetheless, there is still limited data available evaluating this plant's traditions, and few studies have been scientifically translated toward evidence based phytomedicine. We therefore provide a concise review of the currently available *L. ferrugineus* literature and discuss potential directions for future areas of investigation.

**Methods:** We surveyed available literature covering ethnopharmacological usage of *L. ferrugineus* and discussed relevant findings, including important future directions and shortcomings for the medicinal values of this parasitic shrub.

**Results:** Evidence based pharmacological approaches significantly covered the medicinal application of *L. ferrugineus* for hypertension and gastrointestinal complaint management, with a particular focus on the active hydrophilic extract of this herb.

**Conclusion:** Understanding the sites of action of this plant and its beneficial effects will provide justification for its use in old traditional treatments, and potentially lead to the development of therapies. Other medicinal applicative areas of this parasitic shrub, such as wound healing, gerontological effects, and antiviral and anticancer activities, are yet to be researched.

**Keywords:** dedalu-api, ethnopharmacology, herbal medicine, Lorantheaceae, *Loranthus ferrugineus*, mistletoe, parasitic shrub

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(5) Journal of Pharmacopuncture, Vol. 18 No. 1, p19–26, March 2015

## Quercetin down-regulates IL-6/STAT-3 signals to induce mitochondrial-mediated apoptosis in a nonsmall-cell lung-cancer cell line, A549

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### Abstract

**Objectives:** Quercetin, a flavonoid compound, has been reported to induce apoptosis in cancer cells, but its anti-inflammatory effects, which are also closely linked with apoptosis, if any, on non-small-cell lung cancer (NSCLC) have not so far been critically examined. In this study, we tried to determine if quercetin had any demonstrable anti-inflammatory potential, which also could significantly contribute to inducing apoptosis in a NSCLC cell line, A549.

**Methods:** In this context, several assays, including cytotoxicity, flow cytometry and fluorimetry, were done. Gene expression was analyzed by using a western blot analysis.

**Results:** Results revealed that quercetin could induce apoptosis in A549 cells through mitochondrial depolarization by causing an imbalance in B-cell lymphoma 2/ Bcl2 Antagonist X (Bcl2/Bax) ratio and by down-regulating the interleukine-6/ signal transducer and activator of transcription 3 (IL-6/STAT3) signaling pathway. An analysis of the data revealed that quercetin could block nuclear factor kappa-light-chain-enhancer of activated B cells (NF-κB) activity at early hours, which might cause a down-regulation of the IL-6 titer, and the IL-6 expression, in turn, could inhibit p-STAT3 expression. Down-regulation of both the STAT3 and the NF-κB expressions might, therefore, cause down-regulation of Bcl2 activity because both are major upstream effectors of Bcl2. Alteration in Bcl2 responses might result in an imbalance in the Bcl2/Bax ratio, which could ultimately bring about mitochondria mediated apoptosis in A549 cells.

**Conclusion:** Overall, the finding of this study indicates that a quercetin induced anti-inflammatory pathway in A549 cells appeared to make a significant contribution towards induction of apoptosis in NSCLC and, thus, may have a therapeutic use such as a strong apoptosis inducer in cancer cells.

**Keywords:** apoptosis, IL-6/STAT3, NF-κB, non-small-cell lung cancer, quercetin

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(6) Journal of Pharmacopuncture, Vol. 18 No. 1, p27–35, March 2015

## Behaviors of providers of traditional Korean medicine therapy and complementary and alternative medicine therapy for the treatment of cancer patients

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### Abstract

**Objectives:** In Korea, cancer is one of the most important causes of death. Cancer patients have sought alternative methods, like complementary and alternative medicine (CAM) together with Western medicine, to treat cancer. Also, there are many kinds of providers of CAM therapy, including providers of Korean oriental medicine therapy. The purpose of this study is to identify the behaviors of Korean oriental medicine therapy and CAM therapy providers who treat cancer patients and to provide background knowledge for establishing a new policy with the management and quality control of CAM.

**Methods:** Structured and well organized questionnaires were made, and 350 persons were surveyed concerning the providers of CAM or Korean oriental medicine. The questionnaires were collected and analyzed.

**Results:** The questionnaires (182) were collected. The questionnaires identified a total of 73 known providers, such as medicinal professionals or other providers of CAM suppliers, 35.6% of whom had had experience with treating cancer patients (52.6% vs. 29.6%). The treatment methods were a little different: alternative therapy and nutritional therapy being preferred by medicinal professionals and mind body modulation therapy and alternative therapy being preferred by other CAM providers. Four patients (7.4%) experienced side effects, and 6 patients (12.5%) experienced legal problems. As the method for managing the therapy, CAM providers, medicinal professionals, and other CAM providers had different viewpoints. For example, some CAM providers stated that both legislation and an official education on CAM or a national examination were needed as a first step to establish the provider's qualifications and that as a second step, a license test was needed for quality control. To the contrary, medicinal professionals stated that a license test was needed before legislation.

**Conclusion:** Adequate management and quality control of CAM providers is thought to involve both education and legislation.

**Keywords:** alternative therapy, cancer, complementary and alternative medicine, oriental medicine, survey, traditional Korean medicine