Laser Acupuncture as a Pain Relief Modality

Lasers provide a simple, and effective, non-invasive alternative to needle acupuncture in treating musculoskeletal pain.

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Laserpuncture (laser acupuncture, photopuncture, laser acu-therapy) is the application of therapeutic laser to acupoints on the body, ear, or hand. It is a simple, effective, non-invasive approach that has been shown to be a dependable pain management tool. In this article, I will review some of the research studies involving laserpuncture. I will also discuss laserpuncture treatment applications utilizing body acupoints, auriculotherapy points, and Korean Hand Therapy points.

Body Acupoints

Many studies have been published about the use of laserpuncture on body acupoints. Pekka Pontinen found, in a blind crossover study, that laserpuncture increased pressure algometer thresholds from 2.94 to 6.56 and lowered VAS readings from 44.6 to 9.3.[1]

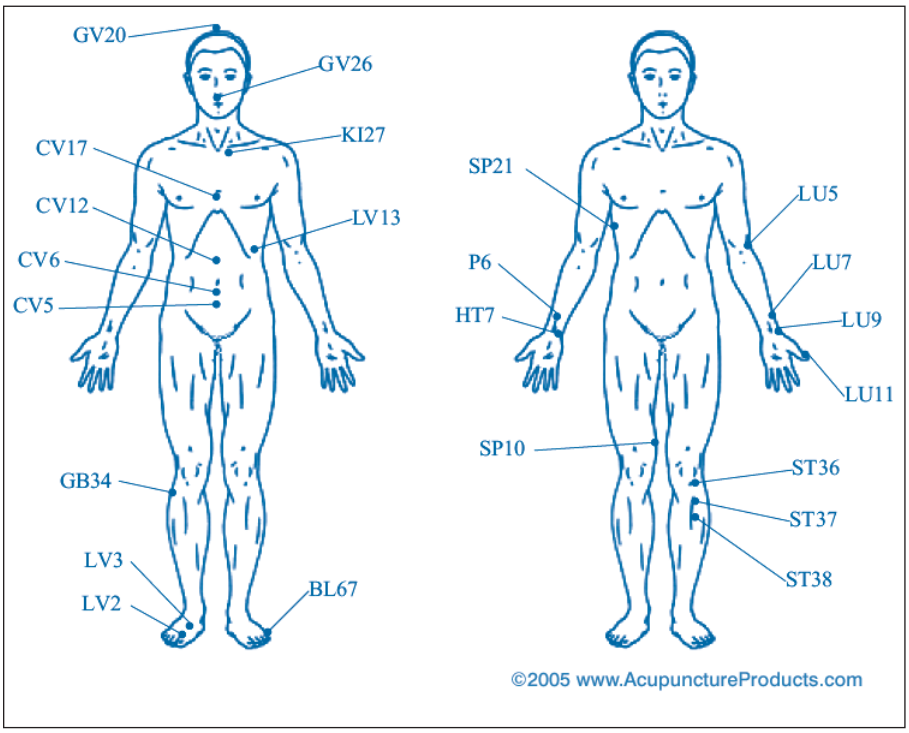

Figure 1. *These are commonly used body acupoints for a wide variety of situations.*

Kreczi and Klingler found that laserpuncture decreased pain and prolonged relief effects in patients with radicular and pseudo-radicular pain as compared to placebo.[2] Shibuya et al, observed overwhelming pain relief and relief of numbness with laser puncture in neurosurgical patients as opposed to placebo.[3] Gruszka et al, in Buenos Aries, observed 100% pain relief in the experimental group of patients with lumbar radicular pain. There was also marked improvement in gait and neurological signs, as well as positive EMG and CT scan changes.[4] Litscher et al found significant changes in cerebral blood flow and brain activity following laserpuncture.[5] Smes-ney found laserpuncture to be as effective on occipital headaches as needle acupuncture.[6] Bradley observed comparable thermal image changes in circulation in both laserpuncture and needle acupuncture.[7]

Figure 1 illustrates some of the most commonly used body acupoints.

Laserpuncture and Auriculotherapy

Auriculotherapy can be effectively used with therapeutic laser. Auriculotherapy, also known as auricular therapy, is a form of alternative medicine based on the idea that the ear is a microsystem, meaning that the entire body is represented on the auricle, and that the entire body can be treated by stimulation of the surface of the ear exclusively. Auriculotherapy considers the ear to be a localized reflex system connected to the central nervous system (whereas ear acupuncture focuses on

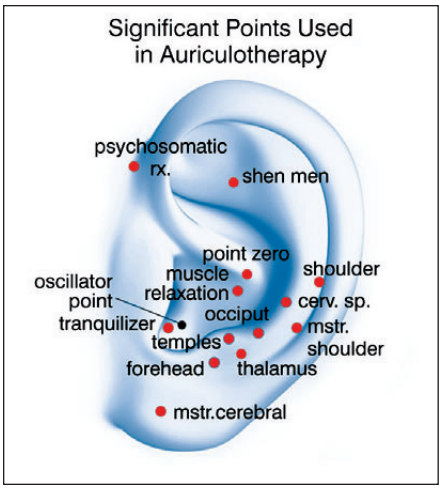

FIGURE 2. *These points are often used along specific ear points related to the body part being treated.*

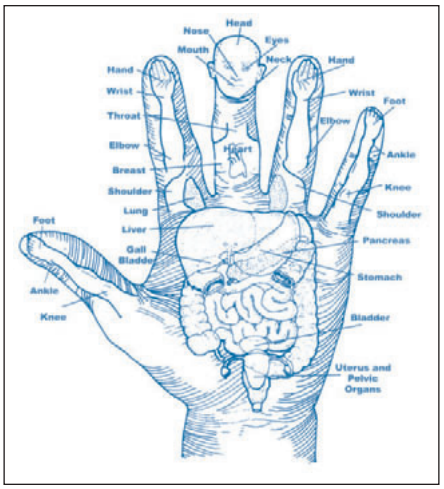

FIGURE 4. *Hand-Body Homunculus (Front). Courtesy Stephen Stiteler Lac, OMD–KHE Seminars*

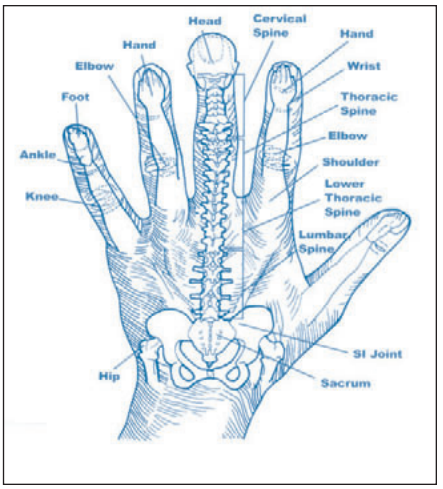

FIGURE 5. *Hand-Body Homunculus (Back). Courtesy Stephen Stiteler LAc, OMD-KHE Seminars.*

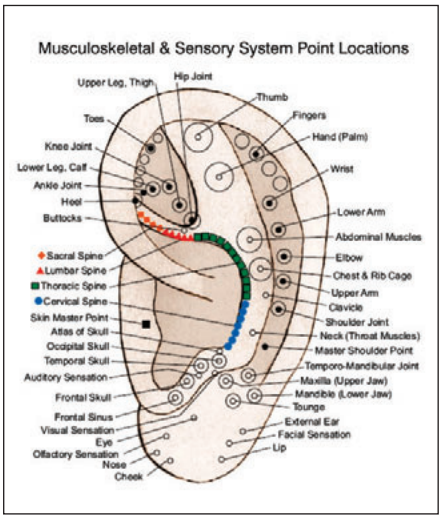

FIGURE 3. *These are Chinese ear acupoints.*

FIGURE 6. *Probing of a KHT acupoint. Photo courtesy of Stephen Stiteler Lac, OMD–KHE Seminars.*

FIGURE 7. *KHT hand pellets. Photo courtesy of Stephen Stiteler Lac, OMD–KHE Seminars.*

empirical acupoints known for their specific functions.

In the early 1950's, Dr. Paul Nogier noticed that a local healer (Mme Barrin) in Lyon, France, was treating sciatica by cauterizing an area of the ear. This observation prompted him to investigate the relationship between locations on the ear and human anatomy. Nogier concluded there was a somatotopic presentation of the inverted fetus in the ear, the anatomic regions of the fetus corresponding to specific zones of the ear (see Figures 2 and 3). Nogier came to believe that pain in any part of the body could be relieved by either needling, cauterizing, massaging or electrically stimulating the region of the ear that corresponded with the anatomical area of the pain.[8]

Alimi et al, found a 36% decrease in pain levels in oncological patients after two months following treatment as compared to negligible changes in the placebo group.[9] In another study, Alimi et al, observed brain signal changes on functional MRI in the Rolandic area of the brain that corresponded with the body part that was being tested, in this case the right thumb. Signal changes were seen in the same area of the brain on stimulation of both the right thumb and the somatic projection point for the thumb in the right ear.[10] King et al, found that patients who had been treated by laser auriculotherapy had significantly increased pain threshold levels.[11]

Laserpuncture and Korean Hand Therapy

KHT (Korean Hand Therapy) can be effectively performed with laserpuncture. Koryo Hand Therapy is also called Koryo Sooji Chim, Korean Hand Acupuncture, or Soojichim. The theory of Koryo Hand Therapy was first originated, studied and developed by the Korean acupuncturist, Dr. Tae Woo Yoo between 1971 and 1975. Since that time, Koryo Hand Therapy has spread worldwide.[13]

KHT theorizes that the hands are a micro-cosmos of the body (see Figures 4 and 5). The function of the human body can be manipulated by stimulating the corresponding points on our hands. According to the theory of 'Koryo Hand Therapy,' there are 14 micro-meridians and 345 acupuncture points on our hands which regulate the internal organs of human body. These acupuncture points may be stimulated by using the following instruments: Hand Needles, Seoam Press-Pellets, Seaom Moxa, E-beam, Magnets,

Frequency	Disease Part of the Body	Point
A'/292	Acute illness, cellular level, inflammation, tumors Body orifices	Shu Point
B'/584	Chronic illness, metabolism, cell nutrtion Abdomen	Sedation
C'/1168	Circulation, energy transfer, locomotor disorders Bones, muscles, joints, extremities	Tonification
D'/2336	Psychic disorders, fatigue, laterality disorders Commissures	Alarm point
E'/4672	Nerve disturbances/pain, neuralgia, neuritides Spinal cord, nerves	Starting point
F'/9344	Depressions, psychic symptoms and causes, bone reconstruction Face, subcortex, emotions	End point
G'/18688	Intellectual and psychosomatic disturbances Frontal cerebral zone	Source point

FIGURE 8. *Laser Pulses/Second based on Nogier Frequencies (Courtesy of Medical Laser Systems).*

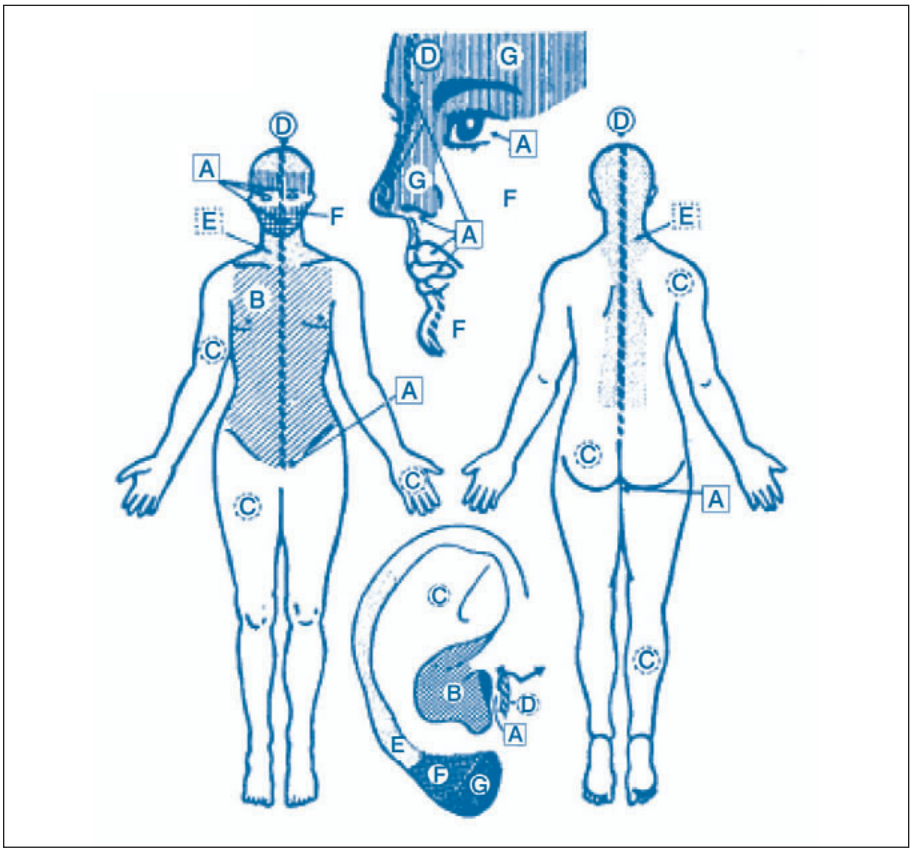

FIGURE 9. *Body zones associated with each Nogier frequencies.*[18]

KHT Silver Ring, or Cyber Hand Therapy (mind vibration). Thus the physiological function of the entire body can be regulated by stimulating these acupuncture points on the hands.

Park and Woo observed a high degree of agreement between active hand reflex point locations and the locations of headaches in migraine and tension headache sufferers. The KHT points were found to be a valuable asset in pinpointing the exact location of the headaches.[14] In an other study, Park and Woo found consistent cerebral blood flow changes along with corresponding peripheral circulatory changes utilizing Doppler TCD and infrared thermography when comparing pre- and post-KHT readings.[15] Jodorkovski noted a average 96% positive response rate in a wide variety of painful and non-pain related conditions in children and adolescents.[16] Kobrin performed a clinical comparison of KHT with other acupuncture approaches and found KHT to be comparable to conventional acupuncture in the treatment of painful conditions.[17]

KHE laserpuncture is relatively easy to apply. The most critical aspect of applying laserpuncture is locating the appropriate points to treat. As they say in real estate, it's "location, location, location." Active acupoints may be located by probing, electrodermal testing of electrical conductance, pulse diagnosis, etc. Probing of the acupoint is easily learned and requires no expensive equipment. The point to be examined is probed gently but firmly to evaluate the amount of discomfort the patient experiences at that point. The most painful or sensitive points are then treated (see Figure 6).

There are many charts, textbooks, and pictorial atlases featuring body acupoints, ear points, and KHT points that can be used as references and learning tools. Laserpuncture can be used alone or with other modalities. It can be the sole technique for applying therapeutic laser to the body or it can be used in addition to laser irradiation of the area of pain. Laserpuncture can be applied to either the body acupoints alone, auriculotherapy points alone, or KHT points alone. They can also be treated in combination of two or all three approaches. One of the attractive aspects of KHT practice is that magnetic, gold, or silver pellets can be used by patients for ongoing treatment at home (see figure 7).

FIGURE 10. *Stimulation of Auriculotherapy points for left ear by an InGaAlN laser.*

FIGURE 11. *Stimulation of a KHT correspondence point for the posterior cervical 2-3 area with a GaAs superpulsed laser.*

FIGURE 12. *Stimulation of LI-4 by a GaAlAs laser. Courtesy Medical Laser Systems.*

Laserpuncture Protocols

Laserpuncture treatment protocols should be flexible. Length of treatment will vary with the wavelength and power output of the laser and the body part being treated. Variations of Nogier's frequencies are commonly used for laserpuncture (see figures 8 and 9). In general, the lower the wavelength of the laser, the longer the treatment time at each point.

All commonly used types of therapeutic lasers can be used for laserpuncture (nGaAlN, GaAlAs, and GaAs diodes; see Figures 10-12). The usual treatment times range between 15–20 seconds for an infrared GaAs or GaAlAs laser to 30 seconds per point for a InGaAlN red light laser. Higher power outputs of the laser will shorten treatment times on each point. A low output laser (5–20mW) may require 30–60 seconds per point. A medium output laser (50–250mW) may require 10–20 seconds per point. A high output laser (500mW or more) may require only 5–10 seconds per point. Total treatment times for all the points treated at that session would be somewhere between 2 and 4 minutes.

Conclusion

Laserpuncture (laser acupuncture) can be an effective adjunct to other pain management modalities. Treatment times are short. The procedures are fairly simple to learn. Each of the approaches to laserpuncture mentioned above, body acupoints, auriculotherapy, or KHT have similar merit. ■

Dr. Kneebone studied nursing at Cook County Hospital in Chicago graduating as an RN in 1972. He completed an anesthesia program at St. Francis Hospital in La Crosse, Wisconsin in 1974. Dr. Kneebone practiced anesthesia until he graduated from Palmer College of Chiropractic in 1978. He has been in a complimentary medicine practice in the San Francisco Bay area since 1978. He has post graduate certification in nutrition and homeopathy. He is also a Fellow of the International Academy of Medical Acupuncture and a Diplomate of the International Academy of Clinical Thermology. Dr. Kneebone has been using therapeutic lasers in his practice for over 7 years and has been teaching laser seminars for the past four years. He teaches Cutting Edge Laser Seminars™ all around the US. He can be contacted at drknee@pacbell.net

References

1. Pontinen, Pekka. *Laserpuncture*. Proceedings of the 7th International Congress of the European Medical Laser Association. June 2006.
2. Kreczi T and Klungler D. A Comparison of Laser Acupuncture versus Placebo in Radicular and Pseudo-radicular Pain Syndromes as Recorded by Subjective Responses of Patients. *Acupuncture Electrotherapy and Research*. 1986. 11 (34): 207-216.
3. Shuyuba M, Ono R, Fugisawa K, Kateda K, Sano H, Kama T, and Oshiro T. Laser Acupuncture Therapy for Pain and Vague Complaints in Neurosurgery. *No Shinkei Gesa* (in Japanese). June 1988. 13(6): 607-612.
4. Gruzka M, et al. Effects of Low Energy Laser Therapy on Herniated Lumbar Discs. *Lasers in Surgery and Medicine*. 1998. Suppl 10. p 6.
5. Litscher G, et al. Specific Effects of Laserpuncture on Cerebral Circulation. *Acta Laser Biologic Sinca*. 1999. 8(2).
6. Smesney D B. *Acupunture Laser in Treating Headache Pain*. Proceeding of SPIE. 1989. Vol 1353: 234-237.
7. Bradley P. *Thermographic Evaluation of Response to Low Level Laser Acupuncture*. Proceedings of the Second meeting of the International Laser Therapy Association, London. Sept 1992. p 32.
8. Available at: www.wikepedia.com. Accessed 4/24/08.
9. Alimi D, Rubino C, Picaird-Leandri E, Fermand-Brick S, and Dubruell-Lemaire ML. Analgesic Effect of Auricular Acupuncture for Cancer pain: A Randomized, Blinded, Controlled Trial. *Journal of Clinical Oncology*. November 2003. Vol 21:22.
10. Alimi D, Geissmann A, and Gardaur D. Auricular Acupuncture Measured on Functional Magnetic Resonance Imaging. *Medical Acupuncture*. 13(2).
11. King CB, Clelland JA, Knowles CJ, Jackson JR. Effects of He Ne Laser Auriculotherapy on Experimental Pain Thresholds. *Physical Therapy*. Jan 1990. 70(1): 24-25.
12. Oleson T, Kroening RJ, and Bresler DE. An Experimental Evaluation of Auricular Diagnosis: The Somatic Mapping of Musculoskeletal Pain at Ear Acupuncture Points. *Pain.* April 1980. 8(2): 217-229.
13. www.koreanhandtherapy.com.
14. Kyu Hyun Park and Tae Woo Yoo: Useful Method To Confirm Tender Points Of Primary Headache: Corresponding Points Of Koryo Hand Acupuncture Therapy. *The Internet Journal of Alternative Medicine*. 2005. 3(1).
15. Kyu Hyun Park, Tae Woo Yoo: The Change Of Cerebral Blood Flow Before And After Treatment Of Koryo Hand Therapy. *The Internet Journal of Neuromonitoring*. 2001. 2(2).
16. Jodorkovsky R. Hand Acupuncture Experience in Pediatric Patients. *Medical Acupuncture*. 1999. 11(1).
17. Kobrin L. Comprehensive Acupuncture without Needles. *Medical Acupuncture*. 2000. 12(2).
18. Nogier P and Nogier R. The Man in the Ear. *Maisonneuve*. 1979. p 255.