

Naeser Laser Home Treatment Program for the HAND

Carpal Tunnel Syndrome Pain or Hand Paresis in Stroke Treated with Laser Acupuncture and Microamps TENS –

Teaching Module Abstract presented at the 3rd Annual Meeting of the North American Association for Laser Therapy (NAALT),
Uniformed Services University for the Health Sciences, Bethesda, MD, April 4, 2003. www.naalt.org

Margaret A. Naeser, Ph.D., Lic.Ac., Department of Neurology Boston University School of
Medicine and V.A. Boston Healthcare System. Aphasia Research Center (12-A), VA Boston
Healthcare System, 150 So. Huntington Ave., Boston, MA 02130 mnaeser@bu.edu

This program may be used with Carpal Tunnel Syndrome (CTS). It may also be used to treat mild-moderate hand paresis (weak, clumsy hand) in stroke patients or other CNS disorders (head injury, encephalitis, spinal cord injury or M.S.). Patients with hand paresis may have some improved hand function after 3 months of treatment. If there is severe hand spasticity (“fisted” hand in flexion) there may be no improved hand function following this treatment program, however, there may be some reduction in the spasticity following at least 3 months of treatment. This program may also be used with Raynaud’s, or peripheral neuropathy in the hands (earlier stages), rheumatoid or osteoarthritis (earlier stages).

Treat 3-6 times per week. For CTS cases, treat every 48 hours, for 5 weeks. This protocol includes *both* microamps TENS and red-beam low-level laser. For CTS cases, infra-red laser is also recommended on deeper acupuncture points at cervical paraspinal areas C5 - C8, T1; and shoulder, elbow and forearm areas where radiating pain may be present. No medical claims are made.

Some lasers which have been used include:

Red-beam Lasers (for shallow acupuncture points).

Lasotronic Pocket Therapy Laser, 45 mW, 660 nm, CW. Elliptical beam, 1.5 mm x 3.5 mm.
Beam spot size: 0.0412 cm². 1 Joule/cm² = .915 sec. or 1 sec. 4 Joules/cm² = 4 sec.

Ito Laser Pointer, 5mW, 670 nm. CW. Aperture: 5 mm diameter.
Beam spot size: 0.196 cm² 1 Joule = 200 sec. 1 Joule/cm² = 39.2 sec.
4 Joules/cm² = 156.9 sec. or 2 Min. 36 sec.

Infrared Lasers (for deeper acupuncture points).

Respond 2400XL Laser (Now, Luminex), 500 mW, 904 nm, CW. Aperture: 1.14 cm diam.
Beam spot size: 1.03 cm² 1 Joule = 0.5 sec. 1 Joule/cm² = 2 sec. 4 Joules/cm² = 8 sec

Microamps TENS Device:

MicroStim 100 TENS (580 µA to 3.5 mA) with 2 circular electrodes, where each electrode has a copper-coated surface, with four embedded, tiny, red LEDs (not laser light).

MicroStim 100 TENS Device (TENS may not be used in pregnancy, nor with a pacemaker.)

1. Be sure the hand and fingers of the patient are clean and dry; no perspiration or hand lotion, etc. Wipe the areas where the acupuncture points are located with an alcohol pad. See attached Diagram.
2. Set switch to the "square wave" on the MicroStim 100 TENS device.
3. There are 2 circular electrodes, each has a copper-coated surface, with four embedded, tiny red LED lights. Place one double-sided sticky CLEAR circular conducting patch onto the copper surface of each circular electrode.
4. For CTS cases, PC 7 is first treated at an energy density of 32 Joules/cm² with red-beam laser - see #1 below, under Low-Level Laser Treatment. For CTS cases, after PC 7 has been treated with the laser, place one circular electrode with attached sticky patch over PC 7 and place the second circular electrode over TW 4 on the dorsum of the wrist, so that the two circular electrodes are placed opposite to each other (TW 4 and PC 7), to enable treatment through the wrist with the MicroStim 100 TENS. (Ignore grounding pad shown on diagram, use circular electrode, instead.)

For stroke patients, place one circular electrode with attached sticky patch, onto the palm of the hand, so that at least a portion of it COVERS acupuncture points Hrt 8 and PC 8. Place the second circular electrode over LI 4 or TW 5.

5. Set the frequency switch on the top of the MicroStim 100 TENS to F4 (292 Hz) for the first frequency to use.

6. Turn the round power control knob to "On," and SLOWLY turn up the power until the patient reports feeling a "tingling sensation" from either electrode which is in place. Now, turn the power down, until the PATIENT DOES NOT FEEL ANY STIMULUS AT ALL. This will be the correct setting (it should be around only 2 or 4 on the round power control knob). If the patient does not report any tingling sensation at all, even at the highest setting of 9, this is OK and just set the power to maximum. Leave the power setting at this subthreshold level, for 2 minutes.

7. After the first 2 minutes at F4, switch the frequency knob over to the lowest frequency setting of F1 (0.3 Hz) for 18 minutes. The MicroStim 100 TENS device turns itself off after 20 minutes. Discard both circular sticky patches; do not store the used patches on the LED surface, this would corrode the copper; do not re-use the sticky patches after one use. The total time required for the MicroStim 100 TENS treatment is 20 minutes.

Low-Level Laser Treatment

While the microamps TENS treatment is ongoing, a red-beam laser can be used to treat the Jing-Well points near the base of the fingernail beds, and other points on the hand, at an energy density of 4 J/cm². The tip of the laser pointer should physically touch the skin, but do not press so hard that the tip leaves a very deep indentation on the skin. Hold the laser pointer at a right angle to the skin. These acupuncture points include:

1. If CTS is being treated, treat acupuncture point PC 7 (closest point to the median nerve at the wrist crease) with red-beam laser BEFORE placing the circular electrode of the TENS device on PC 7. Use 32 J/cm² at PC 7 (for Lasotronic 45 mW Laser, 32J/cm² = 32 sec.; for ITO 5 mW laser, 32J/cm² = 21 minutes). After this treatment with the laser, place the TENS electrodes on PC 7 and TW 4 to treat through the wrist, as explained in #4-#7, above.

2. While the TENS is in place, use the laser to treat the following acupuncture points: Lu 11, LI 1, PC 9, TW 1, Hrt 9, SI 1. See attached Diagram. These are important points. Each point is treated at 4 J/cm² (for Lasotronic 45 mW laser, 4 J/cm² = 4 sec.; for ITO 5 mW laser, 4 J/cm² = 2 min. 36 sec.). These points are treated for all disorders, including CTS.

3. Lu 9, Hrt 7. These points located at the wrist crease, are important for CTS cases. See Diagram.

4. Optional points for severe finger cases (e.g., arthritis): Extra points at ends of major finger creases at the joints, on radial and ulnar side of fingers. These are the proximal and distal interphalangeal joints. There are 4 of these extra points on each finger, and 2 on each thumb. Each point is treated, 4 to 8 J/cm².

5. Optional points are distal Ba Xie points in webspaces btwn. fingers; or proximal Ba Xie points.

6. Other hand points, LI 4 or TW 3. Use the red-beam laser to treat shallow points, on adults.

7. It is recommended that acupuncture needles or infrared laser be used to treat deeper points on adults, such as LI 11, LI 15, TW 9, and with CTS cases, the cervical paraspinal areas are treated lateral to C5 - C8 and T1 (Hwa To points). These points are treated at 4 - 8 J/cm² (for Respond 2400XL 500mW laser, 4 - 8 J/cm² = 8 - 16 sec. per point). If there are tender points on palpation (especially on the forearm), treat for 4 - 8 J/cm², and then re-palpate that point/area, and treat again, until there is a change in the sensitivity level there.

When used with CTS patients, there was a success rate of 88% (Naeser, Hahn, Lieberman, Branco, 2002; controlled study) to 92% (Branco & Naeser, 1989; open protocol) where success was defined as a reduction of at least 50% in the pain level. Eligible CTS patients: NCS motor latency should not be greater than 7.0 msec (4.3 msec = WNL). For best results, treat 3 times per week for 5 weeks. Treatment results were stable at 1 - 6 year follow-up in 90% of the patients.

References

Branco K & Naeser MA: Carpal tunnel syndrome: Clinical outcome after low-level laser acupuncture, microamps transcutaneous electrical nerve stimulation, and other alternative therapies - an open protocol study. The Journal of Alternative and Complementary Medicine, 5(1): 5-26, 1999.

Naeser MA, Hahn K-A K, Lieberman BE, Branco KF. Carpal Tunnel Syndrome Pain Treated with Low-Level Laser and Microamps TENS, A Controlled Study. Archives of Physical Medicine and Rehabilitation, 2002;83:978-988.

Naeser MA, Hahn C, Lieberman BE: Booklet: Naeser Laser Home Treatment Program for the Hand©. An Alternative Therapy to Treat Painful Symptoms of Carpal Tunnel Syndrome and Repetitive Strain Injury. Catasauqua, PA: The American Association of Oriental Medicine. 1996. Available through AAOM, 1-888-500-7999

Naeser MA, Wei XB, Laser Acupuncture - Introductory Textbook for Treatment of Pain, Paralysis, Spasticity and Other Disorders, Boston, Boston Chinese Medicine, 1994, p. 40. Available through sales@spanda.com

The American Association of Oriental Medicine (AAOM) maintains a list of Lic.Ac.'s who use Laser Acupuncture: 1-888-500-7999 www.AAOM.org

Websites:

<http://gancao.net/ht/cts.shtml> This website shows photographs of the method.

<http://gancao.net/ht/laser.shtml> This website is a general introduction to laser acupuncture.

Some sources for devices mentioned here:

Lasotronic Pocket Therapy Laser, 45 mW, 660 nm. May be discontinued, contact: felix.kramer@gmx.ch

Ito Laser, 5mW, 670 nm, Lhasa Medical, Weymouth, MA 800-722-8775, www.LhasaMedical.com \$118.00, replace two AAA batteries after three hours of use. If 2 lasers purchased, cost \$112/laser.

Luminex Laser (Formerly Respond Laser), 500 mW, 670nm, 867 nm, 904 nm. Medical Laser Systems, Branford, CT 800-778-0836, Doreen@medicallasersystems.com www.medicallasersystems.com

Thor Lasers. Variety of laser cluster heads and single probes, red-beam and infrared. Melyni@ntelos.net www.Thorlaser.com Phone: 540-942-4500 188 Sherwood Dr., Waynesboro, VA 22980

MicroStim 100 TENS unit with 2 circular electrodes. MicroStim, Inc., Tamarac, FL. 1-800-326-9119 or (954) 720-4383. Developed by Joel Rossen, DVM. jrossen@MicroStim.Com info@microstim.com \$395.00

Note: With stroke patients and other CNS disorder patients, poor results are observed if the patient's wrist joint has recently been injected with Bo-Tox, or if the patient is taking steroids (prednisone). Ample time is required for these effects to have worn off (3 months), before using this treatment program

