

## The Magic of Microcurrent

The title of this chapter is very appropriate. In the online version of Miriam-Webster dictionary I pulled this definition of the word “magic”:

an extraordinary power or influence seemingly from a supernatural source

Countless times people I was treating with microcurrent, or those witnessing the treatment, have remarked that the results they saw were like “magic”. Here are some examples from my experience:

- ✓ A Vietnam veteran with an implanted pain drug delivery pump, multiple spinal fusions and many other injuries and diseases saw his pain level plummet from a level “10” to a “2” after a 20 minute microcurrent and light session. He had previously had many traditional acupuncture treatments without relief.
- ✓ A realtor with a painful pinched nerve in her neck had a total release of pain after a 2 minute treatment.
- ✓ A 10 minute treatment of half of a 55 year old woman’s face using microcurrent facial rejuvenation techniques clearly opened and lifted her eye, smoothed crow’s feet, tightened her mouth and jaw line and made her facial coloration look like it had 20 years earlier.

Yet these effects are not supernatural. They are possible because every aspect of our bodies is pre-wired to respond to subtle electrical currents. Most parts of our bodies also produce endogenous electrical charges – including nerve cells, fascia (connective tissue), muscles, brain cells and our hearts. We truly have a “body electric”.

Color light therapy and/or sound healing methods are boosters to the effects of microcurrent. Although color light devices and sound healing methods can be used by themselves, I use them in combination for maximum results. This is called Microlight therapy.

The use of color to balance the meridians and chakras has been well-known since ancient times. Combining this with microcurrent to enhance effects is a much newer practice. I have compared the used of color light by itself to the use of Microlight for pain relief, esthetic and emotional healing treatments and have observed faster and more profound results when Microlight is used.

Microcurrent and Microlight works to relieve blockage and pain in a similar way as acupuncture by clearing stagnation and poor circulation of Qi (vital energy) and Blood. Another effect of microcurrent is to reduce electrical resistance on the body areas and pathways onto which it is applied. It is also likely that this effect allows for better penetration of the therapeutic color light deep into the points and centers being treated.

Modern patients often present with a complex mixture of pain, internal medical, emotional and reactive symptoms, often aggravated by a load of chemical toxins on the body. They are usually seeking faster results that take less time to produce. Therapies using microcurrent, light and/or sound are one of the most powerful methods to offer these kinds of results. These effects are enhanced by applying these energies through well-selected acupuncture points.

## What is Microcurrent?

The prefix “micro” refers to anything measured in the millionths of a unit. “Current” refers to amperage (or amps), the primary unit for measuring electrical current. Therefore microcurrent is electric currents in the millionths of amp levels.

Microcurrent devices differ from conventional electric stimulation in that the currents delivered are about 1000 times less intense. Microcurrent devices also generally are designed to be used with greater precision, and often include probe electrodes suitable for treating acupuncture and trigger points in addition to pad electrodes.

Because of the greater precision involved with microcurrent therapies there are differing effects recognized from various waveforms, frequencies and polarity placements of the electrodes.<sup>1</sup> Microcurrent parameters used in PNE balancing are simple polarized, low-frequency currents.

I personally became involved with microcurrent during my acupuncture training in South Florida in the early 1980's. Soon after I started my career as a full-time acupuncturist in Westport, Connecticut I was having many good patient responses with internal medicine, addiction and women's health issues. Yet my responses with relieving pain were inconsistent. Working with a home-made microcurrent stimulator I noticed far more dramatic positive responses than I had seen with acupuncture alone. These experiences inspired me to devote a great deal of my professional career to developing devices and treatment protocols for microcurrent electro-acupuncture and therapies, and eventually teaching these internationally.

## Documented Effects of Microcurrent

There is a lot that science has learned about how and why microcurrent has such dramatic healing and pain relieving effects. Here are the physiologic effects of microcurrent as confirmed by research studies:

- 1. Faster and more efficient wound healing** – Numerous research studies have validated this effect. As an example Carley and Wainapel<sup>2</sup> reported the following: 30 hospital patients with non healing ulcers were divided into two groups, one treated with conventional wound dressings and one with microcurrent stimulation at 300 – 700  $\mu$ A. The latter group was given two – two hour stimulation periods per day. After six weeks of such treatments the group treated with microcurrents showed a 150 – 250% healing rate, with stronger scar formation, less pain and lessened infection of the treated area.
- 2. Boosting ATP production in cells** – ATP is the energy-carrying molecule in cells that powers all activity, including cellular healing. Cheng, et al<sup>3</sup> have been widely quoted for confirming how microcurrent boosts ATP production as well as the availability of free amino acids for cellular repair. Most significant was their finding that levels of electrical stimulation above 1000  $\mu$ A (1 milliamp) actually retarded ATP production. This indicated that only very low-level electrical stimulation has this very desirable effect.

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<sup>1</sup> See my book Microcurrent Electro-Acupuncture for details on microcurrent treatment parameters and protocols

<sup>2</sup> Low Intensity Direct Current Archives of Physical Medicine and Rehabilitation, Vol. 66, July 1985

<sup>3</sup> The Effects of Electric Current on ATP Generation, Protein Synthesis, and Membrane Transport in Rat Skin Clinical Orthopaedics and Related Research, #171, Nov/Dec. 1982

3. **Strengthening tendons** – Oweye and his team<sup>4</sup> reported stronger tendons in rats that had positive (anodal) microcurrent applied, with current at 75  $\mu$ A, 10 Hz frequency. Many other studies have shown similar effects.

4. **Better bone healing** – A team of Japanese researchers<sup>5</sup> demonstrated that mandibular lesions in dogs responded well to application of 50  $\mu$ A stimulation. They stated "It seems likely that direct microcurrent promotes normal bone formation within the defective area and accelerates the osseous healing process. Prolonged application of electrical stimulus promotes a remarkable bone remodeling mechanism."

5. **Helping kill bacterial infection in wounds** – J.A. Spadaro and team<sup>6</sup> reported good bacteriocidal effects combining microcurrent stimulation with silver ions. Percutaneous silver wire implants were placed in rats, and the wounds inoculated with Staphylococcus aureus to test how much infection would spread. Microcurrent stimulation was passed through the wires, with + anodal current placed into implanted silver wire, and the – cathodal electrode placed on the rat's belly as a ground. It was found that significant inhibition of infection occurred, with the most marked results at 20uA current level. "Metallic silver can be effectively and efficiently activated to elicit its anti-microbial activity by the application of microampere electrical current."

6. **Microcurrent may support function of stem cells in healing eye diseases**<sup>7</sup> - One form of microcurrent stimulated both dermal fibroblasts and U937 cells to secrete transforming growth factor-beta 1 (TGF-beta 1), which is an important regulator of cell-mediated inflammation and tissue regeneration. This article supports the potential of microcurrent to improve the results of stem cell transplantation.

7. **Polarized microcurrent used to shrink cancerous tumors**<sup>8</sup> – B. Nordenstrom, M.D. demonstrated that the positive polarity of microcurrent, passed through needles implanted into cancerous tumors, blocked cancer pain and in many cases caused the tumors to regress or disappear. He theorized that this treatment set up a form of electro-osmosis, which dehydrated the tumor and blocked production of pain-producing substances such as histamine, substance P and bradykinin.

Reinhold Voll, M.D. was one of the greatest pioneers in the development of microcurrent therapies. He and a team of colleagues developed the first commercially available microcurrent stimulator

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<sup>4</sup> Low-intensity Pulsed Galvanic Current and the Healing of Tenotomized Rat Achilles Tendons: Preliminary Report Using Load-to-Breaking Measurements Archives Physical Med Rehab, Vol. 68, July 1987

<sup>5</sup> Experimental Studies of Influences on Healing Process of Mandibular Defect Stimulated by Microcurrent Shikwa Gakuho, #82 1982

<sup>6</sup> Bacterial inhibition by electrical activation of percutaneous silver implants, Journal of Biomedical Materials Research, Vol. 20, 565-577 (1986)

<sup>7</sup> Altern Lab Anim. 2001 Nov-Dec;29(6):693-701. England University of Nottingham, Todd I, Clothier RH Electrical stimulation of transforming growth factor-beta 1 secretion by human dermal fibroblasts and the U937 human monocytic cell line.

<sup>8</sup> Nordenstrom, B. An Electrophysiologic View of Acupuncture: Role of Capacitive and Closed Circuit Currents and Their Clinical Effects in the Treatment of Cancer and Chronic Pain, American Journal of Acupuncture, Vol 17, #2, 1989

called the Dermatron in the 1960's. After extensive study of the effects of microcurrent on the body, he reported these physiologic effects<sup>9</sup>:

- Spasmolysis of blood and lymph vessels & hollow organs
- Improving circulation of blood and lymph
- Tonification of elastic fibers to improve organ functions
- Reduction of inflammatory processes in the body
- Reduction of degenerative processes through promoting proper function of connective tissues
- Restoration of healthy nerve function through polarization effects
- Stimulating ATP production for muscle relaxation and healing

Voll did extensive research using his equipment to apply microcurrent at specific therapeutic frequencies to acupuncture points for treatment of a wide range of diseases. I refer you to Treatment Formulary III in my book Microcurrent Electro-Acupuncture<sup>10</sup> for details.

I believe that some of the effects of microcurrent are still off the charts of traditional science. These would be the ways that low-frequency currents balance and heal the meridian system and chakras. Many other studies too numerous to quote here confirm that the human body is exquisitely sensitive to low-level electrical stimulation. The polarization (placement of positive and negative electrodes), frequency rate (number of pulses per second) and waveform of the current all produce targeted effects in the body. These effects are elevated when such stimulation is passed through acupuncture points that relate to the pathology being treated.

In addition to the confirmed effects of microcurrent listed above there are other subtle energy effects on the body. These include:

**Effects on release of neuro-peptides.** These are small molecules used by the body for communication and signaling purposes. In her book Molecules of Emotion<sup>11</sup> Candace Pert recounted her research about how neuropeptides inter-connect the brain, immune system, organs hormones and our emotions. Although she did not specifically use microcurrent stimulation in her studies it is my observation that the application of well-chosen microcurrent and light frequencies do have significant effects on neuropeptide release.

**Releasing energetic blockage through the body.** The ancient art of acupuncture is largely based on using needle insertions to release "bi" or blockage in the meridian system and to clear Blood stagnation. Chinese Medicine teaches that such blockage is a primary cause of pain and disease as well as disorders of the Spirit. It has been well established that electrical stimulation passed through acupuncture points, or electro-acupuncture, produces these effects and can amplify the effect of needle therapies.

**Release through micro-systems.** One of the most remarkable techniques in the acupuncture armamentarium is evaluation and treatment through auricular therapy and other micro-systems.

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<sup>9</sup> Voll, R. Twenty Years of ElectroAcupuncture Diagnosis in Germany: A Progress Report. Am J Acupuncture 1975; 3(19):7-17.

<sup>10</sup> Microcurrent Electro-Acupuncture, Starwynn 2002, Desert Heart Press (available through Eastwestmed, Inc. (800) 872-6789.

<sup>11</sup> C. Pert, Molecules Of Emotion: The Science Between Mind-Body Medicine Scribner (1999)

The ear contains a complete map of the rest of the body, as does the face, hands, feet and abdomen. Stimulation of points on the ear corresponding to dysfunctional body areas has powerful effects at rapidly relieving pain and helping correct disorders of the organs, glands and nervous system. Microcurrent may be used through micro-systems to produce these effects. Micro-systems are expressions of the holographic nature of the body – where parts contain a map of the whole body.

### **Applications of Microlight Therapy**

Since its inception in 2002 the following valuable applications of combined microcurrent and light therapies (Microlight therapy) have been demonstrated and used in clinical practice:

1. Rapid pain relief
2. Facial and whole-body rejuvenation and anti-aging effects
3. Promoting weight loss in conjunction with nutritional programs
4. Pediatric treatment
5. Accelerated rehabilitation after injuries, strokes or neurologic degenerative diseases
6. Psycho-Neuro-Endocrine Balancing for psycho-emotional disorders

Details on most of these applications can be found by perusing my past articles in the Acupuncture Today columnist archives.

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