Published in *Testosterone Magazine*, Issue 227, September 20, 2002 (Published Online at www.T-mag.com):

The Microcurrent Revolution
Another piece of the bodybuilding puzzle?

by Chris Shugart

Three people approached the stage, each with his or her own brand of pain. The first was an athlete with plantar fasciitis. The soft-spoken bearded fellow on stage pulled out a device that looked like a Walkman with two little wands attached. He touched the wands, or probes, to the athlete's leg and foot at a variety of angles. In about five minutes, the athlete was pain free.

Next came a lady with pain in her shoulder area from an old car accident. Five minutes later, she had no pain for the first time in years. Then came a young bodybuilder with lower-back pain. In under four minutes the pain was totally gone. "That's a miracle!" the kid said. "I hear that every day," replied the bearded fellow. "I expect miracles."

Later that day, the friendly fellow with the beard put away the probes and placed ear clips from the same little Walkman-like device on a lady suffering from stress and jet lag. Soon she was saying she felt light and that the stress was draining away. In 20 minutes, her jet lag was also gone and she said she felt rejuvenated.

So what the heck was going on here? In short, Dr. Daniel Kirsch, the bearded fellow, was relieving pain and anxiety with electricity, a special microcurrent to be exact. With many types of pain and other ailments, his success rate far exceeds that of drug therapy with virtually no side effects. Pain, depression, insomnia, attention deficit disorder (ADD), stress, fibromyalgia, headaches, drug addiction, carpal-tunnel syndrome, dental pain, chronic fatigue… and the list goes on and on. There's even growing evidence that microcurrent technology may help multiple sclerosis and cancer patients.

Armed with over one hundred human studies and many animal studies (41 of which are double-blinded and almost all are peer reviewed), Dr. Kirsch is slowly revolutionizing pain treatment, alleviating many psychological problems without drugs, and what's perhaps not that surprising, doing ferocious battle with the FDA and the pharmaceutical companies all the way.

Though I was skeptical at first, even after witnessing the miraculous events above at the SWIS symposium, I've since become a believer in this technology. In fact, microcurrent treatment may be yet another piece of the bodybuilding puzzle, another tool to help us become better people both physically and psychologically. Although used by more than two dozen pro football, basketball, and baseball teams, this technology hasn't yet reached the bodybuilding community. That's too bad, because in the recipe for a great body, electromedicine, as this field is called, could be a missing ingredient.

Electromedicine: A Shocking History

Warning: The following information may challenge your existing paradigms and the theoretical framework in which you view the world. That's okay. You don't have to agree with this historical construct to benefit from the technology.

Although modern medicine, in its drug-induced haze, has all but forgotten this fact, the body is much more than a chemical system. It's also electrical. Remember the premise behind the movie The Matrix, where all the machines began to harvest humans for their electrical energy? Well, that's theoretically plausible. Every human being is a small electrical power plant, a powerful battery with legs. Mankind has known this for thousands of years.

In 46 AD, Scribonius Largus, physician to the Roman Emperor, would have his patients stand in the water near an electric eel (a Black Torpedo fish) for the analgesic effect. Both Plato and Socrates have written about this treatment.

The Chinese have been manipulating the natural electrical current of the human body since the beginnings of their civilization through acupuncture. The Chinese monad, the popular Yin and Yang symbol, expresses this concept of polarity. What they called the "flow of Ch'i" is actually the flow of bioelectricity. These channels or meridians could be manipulated for a variety of effects.

Other cultures also discovered this phenomenon. In India, the term for bioelectricity was prana, which they believed was centered in the chakras of the body, areas with strong electrical fields. Same observation, different cultural interpretation.

In some Western religions, certain religious figures are historically described as having halos around their heads. A halo is also known as an aura. An aura is also known as an electrical field around the body. Although the idea of auras is often vanquished to the realms of the paranormal, it's thought by some to be quite a real phenomenon. A person can allegedly train himself to see these auras with diligent practice. Some people throughout history are said to have such strong electrical fields that these auras or halos are easily seen.

What electromedicine has proven is that electricity can take away pain and facilitate healing. Could it be that the healers of the past were simply people with a higher than normal amount of bioelectricity? And could it be that in the non-scientific paradigm of the time, these healing powers were naturally attributed to something paranormal, supernatural, or spiritual, often reflecting whatever religion was dominant in that culture?

This is, after all, the typical pattern of scientific discovery. First, a phenomenon is observed. Let's take lightning for example. This powerful force was feared and not understood. In order to make this unexplainable force fit into the belief systems of the times, an explanation was created and passed down through the generations. Since these cultures didn't know anything about the sudden discharge of atmospheric electricity (the word "electricity" wasn't even coined until the 1600's), this phenomenon was attributed to the gods. Almost every primitive culture had a god of lightning and/or thunder: Raiden, Zeus, Thor, and Chak are just a few examples. But as time passed, science and reason caught up with the mythology and eventually replaced it.

I propose a similar chain of events is occurring with electromedicine and the power of microcurrent. But this isn't a new discovery by any means. Aside from the ancient Chinese and Greeks, there's been much more "recent" application of this technology. In the 1700's a British surgeon named Charles Kite invented an electrical cardiac defibrillator. This caused an uproar in the Christian community and Dr. Kite was accused of raising the dead and therefore performing the work of the Devil. The practice was abandoned for some time out of fear of the unknown, although today thousands of people are saved by modern defibrillators.

There are many other examples in history of the use of electricity in medicine and psychology. This is amazing to many because this type of technology perfected by Dr. Kirsch has been called "new" and "revolutionary" (even by myself in the title of this article), yet one of the first books written on this topic was penned in 1780.

If electromedicine has been around for ages, then why haven't more people heard of it? This is largely because electromedicine was dismissed in the early 20th century by the American Medical Association. Although at one time a person could graduate from med school with a degree in electromedicine, the AMA wanted to know why and how it worked. Electrotherapists could demonstrate therapeutic results, but because of a lack of specific technology at the time, they couldn't show exactly how electricity lead to changes in the body. Largely because electromedicine wasn't understood, it was dismissed and wasn't allowed to be taught in medical schools. (Perhaps not coincidentally, the subject of nutrition was also frowned upon.)

That's the official story.

Some have also pointed to the emergence of the pharmaceutical industry during this time, a burgeoning industry controlled by some of the most powerful names in the country. Was electromedicine dismissed because it was a questionable practice? Was it dismissed because of the trend at the time to "modernize medicine" with synthetic drugs? Or was it in fact dismissed because it worked well and therefore threatened the pocketbooks of those in control of the new pharmaceutical gestapo?

The Electromedicine Messiah

Despite the dismissal by what some call the "medical mafia," electromedicine continued to be researched and applied. Various adaptations of the technology were used to treat stress, abort withdrawal symptoms in drug and alcohol addiction, alleviate pain, and speed healing just to name a few of its uses. Doctors and scientists in other countries, as well as a few mavericks in the States, knew the technology couldn't simply be dismissed by what they felt was a close-minded and undereducated AMA committee. Work in electromedicine and electrotherapy continued.

Beginning in the early 70's, Dr. Daniel Kirsch began to make headway in the electromedical field. He began by studying acupuncture and was in fact one of the first non-Asians to practice it in the US (which was illegal at the time because acupuncture was considered surgery). He also published the first English language book to organize acupuncture by the diagnostic classifications used in Western medicine and is credited with modernizing electroacupuncture.

Later, Dr. Kirsch attended chiropractic school for a time and eventually graduated from City University Los Angeles with a doctorate in neurobiology. It's this eclectic background that lead him to where he is today — the founder of Electromedical Products International and the acknowledged leader in the electrotherapy industry.

Again the US government, this time through the Food and Drug Administration (FDA), attempted to squash the technology. Some believe this was because of the powerful influence of the now enormous pharmaceutical industry, who, for obvious reasons, is threatened by the non-drug technology. (This isn't hard to believe for those involved in the nutritional supplement industry.)

After years of constant struggle, Dr. Kirsch finally sued the FDA causing them to back down. Today, his technology, the Alpha-Stim device, is used in every major country in the world, although the US is still the only country where a prescription is required. (For now.)

The Technology

Although the original machine was the size of a desktop computer and ran several thousand dollars, the new devices are small and economical, at least compared to the cost of long term drug therapy. There are two types of Alpha-Stim devices currently on the market: CES, and a device that has both CES and MET capabilities.

CES — A.R.T. for your Brain

CES (cranial electrotherapy stimulation) treats a variety of ailments, but because of legal restrictions, the manufacturers are only allowed to say that it effectively treats anxiety, depression, stress, and insomnia. To receive a "brain treatment," electrode clips are placed on the earlobes for an average of twenty minutes three times per week. The user may feel a slight tingling sensation but often feels nothing at all.

Some users report feeling light (or heavy then light), as their anxiety fades away. Unlike drugs used to treat mood disorders, the mind is left alert while the body is relaxed. Dr. Kirsch uses the analogy of having a Type-A mind with a Type-B body. (Type-A personalities are usually creative, hard working go-getters, but often suffer from stress-related ills. Type-B's are more relaxed and laid back but tend to live with their parents until their 30's.)

Anxiety reduction is usually felt during the first treatment although the effects are cumulative over time. Depression and insomnia are usually controlled, if not cured, in two to three weeks. Users also report feeling more energetic, focused, and, well, good. Although not its primary mechanism of action, microcurrent treatment increases natural endorphin output.

Studies are still ongoing in many of these areas, but people are noticing marked improvements in the treatment of ADD, phobias, and drug and alcohol addiction (including prescription drug addiction) using CES. Users also report an increased ability to learn, concentrate and focus. This technology has even been used to treat criminals since some types of crime are considered to be manifestations of anxiety. (Perhaps we should hook Mike Tyson up to one of these things?)

CES can also be used to treat post-traumatic stress disorder. Dr. Kirsch traveled to Kuwait after the Gulf War to train medical personnel in its use. (After the events of September 11th, Dr. Kirsch offered to send as many microcurrent stimulators as needed to New York. The offer became so tangled in red tape that New Yorkers never received the technology. New Yorkers, however, have been clamoring for prescription sedatives and relaxants since the attacks according to a recent article from Reuters.)

While Americans do need a prescription from a doctor or any LMP (Licensed Medical Professional), these are easy to obtain as the technology becomes more well known in the medical community. A dentist, chiropractor and even a certified acupuncturist can prescribe the device. The CES device runs around $500 (US) and can often be rented. Some insurance companies may cover part of the cost.

MET — Pain No More

MET (microcurrent electrical therapy) is primarily used to treat pain and facilitate healing in the body, although the Alpha-Stim MET device also functions as a CES device and comes with ear clips as well as probes and electrodes. The device can treat just about any type of pain, acute or chronic, in the body. The people at the beginning of this article were being treated with an Alpha-Stim MET unit.

Emmitt Smith of the Dallas Cowboys was once spotted using an Alpha-Stim MET device on his hamstring on the sidelines which caused more people to be interested in the device. The Cowboys have several of these devices and have been using them for over seven years along with other pro teams. Many athletes such as Smith use MET to promote healing and CES to relax before a game. MET devices are often used in clinical settings by doctors, physical therapists and chiropractors, but they can also be purchased for home use for around $900.

MET should not be confused with a TENS unit. Pain returns after the TENS unit is turned off and Dr. Kirsch believes these devices can often do more harm than good. Unlike TENS, Alpha-Stim technology is backed by more independent research than any other device in its class.

Bodybuilding Applications: Facts and Theories

Interesting stuff, you may be thinking, but will it make me look better naked? In a roundabout way, yes, I believe it will for the following reasons:

• Stress can be catabolic (muscle-wasting) and decrease Testosterone levels. A reduction in stress and anxiety, something microcurrent technology can do, can keep your hormone levels functioning optimally by keeping the "bad" hormones at bay and the "good" hormones maximized.

• Although unpublished as of this writing, there has been one study on twelve men that showed an increase in Testosterone, DHEA, and IGF-1 levels after using CES. (Future research is planned to study the effects of microcurrent on growth hormone levels and cortisol levels. Researchers are optimistic.)

• MET treatment has been shown to improve protein synthesis, increase blood flow, and increase the transport of amino acids to muscles.

• MET may be the cure for all those aches and pains most bodybuilders live with everyday. Obviously workouts will improve without these annoying shoulder, elbow, wrist and knee pains so common in hardcore weight trainers.

• Microcurrent technology has been shown to facilitate the healing and recovery of injuries. And what is weight training after all, but injury (microtrauma) to the muscle? Alpha-Stim technology may speed up recovery and the results you get from weight training. Just a theory, but it seems logical.

(Side note: Speaking of healing and recovery, using Alpha-Stim has also been shown to greatly reduce the time spent wearing dental braces. Instead of being a metal mouth for three years, it's possible to only need braces a year. Identical twin studies on this are going on now.)

• This type of treatment has also been shown to potentiate the effect of other types of therapy. For example, those using CES treatment report needing less anesthetic with dental pain. It may also make some drugs work better. Is it then possible that this technology could make some types of supplementation more effective? There's no answer to that right now, but the possibility is exciting.

Test Driving the Alpha-Stim

The history, current research and testimonials from doctors and patients are fascinating, but I wanted to test it out for myself. After getting a prescription from a chiropractor friend with the diagnosis of stress, I received an Alpha-Stim 100.

The diagnosis of stress wasn't just faked so I could try out the machine. I do have what I call "Type-A Personality Self-induced Stress." That means I'm constantly doing ten things at once and trying to be a

great writer, editor, bodybuilder, father, husband, etc. I demand a lot from myself and I tend to have workaholic tendencies. Yep, I'm one of those guys who gets stressed out on vacation because I can't get near a computer to work.

This was never a problem until I became a father. My problem was "turning off" the frenzied activity of the day when it was time to just be dad in the evening. Basically I was just frazzled by the end of the day.

My first CES brain treatment went pretty well. Most people use 200 to 300 microamperes for CES treatment. I must have missed that part in the manual because I turned it up to max (600 microamperes). I became dizzy and the tingling sensation on the ears became uncomfortable. These effects faded as soon as I turned down the intensity. After twenty minutes I honestly felt totally buzzed, like I'd had a couple of pints of Guinness on an empty stomach or a toke from a "one-hitter." It was kinda nice and I slept like a rock that night.

The second treatment came after a road trip where I'd only gotten about five hours of sleep. It was late and I was feeling exhausted from traveling, but I wanted to get a treatment. So I hooked myself up, clipped the device on my waistband and answered e-mail while "stimming." After twenty minutes I was totally rejuvenated and felt alert and active. I stayed up and wrote a good part of this article instead of crawling into bed, which is what I felt like doing before the treatment.

After a couple of weeks of every other day stim sessions, I've noticed an overall calming effect. I'm alert, yet relaxed. It's as if my brain has been given a boost in work capacity yet my body doesn't feel the usual accompanying tension I get when doing a lot of work. At the electrotherapy training I attended, many attendees talked about a "glass is always half-full" feeling. I began to notice this to an extent. A pile of work and family obligations no longer bugged me. It was easier to say, "Yeah, I have a lot to do, but I always get it done and do a pretty good job." Before, I'd feel a mild panic when I had a lot of work to do.

I found this interesting because this "distance" from life's stress is often reported with those taking anti-anxiety drugs. The problem is that with synthetic drugs, the mind isn't left alert and often the personality is muted. The microcurrent treatments, on the other hand, seem to be giving users all of the good and none of the bad. The effects are also cumulative and longer lasting. Valium can treat situational anxiety but only for four hours. CES treatment can remove the anxiety altogether with no side effects. (About 1 in 500 report a headache after treatments but then again, as Dr. Kirsch says, show me 500 people and I'll show you at least one with a headache.)

I haven't had the chance to play around with the probes much and treat the body, but I am treating my training partner's scars from two shoulder surgeries. Scars can act as bio-resistors in the body's bioelectrical flow which can lead to all sorts of ailments. (Dr. Kirsch once treated a woman for chronic colds by treating her C-section scar, after which she stopped getting sick.)

The Birth of the Anti-Drug?

The results people are getting with microcurrent technology are sometimes hard to believe. Is it placebo effect? Well, although that may be possible with individual use, it's never been found in studies that controlled for the placebo effect. Plus, it's proven to work very well on animals who can't experience the placebo effect.

One thing is for sure. For many types of psychological and physical ailments, Alpha-Stim microcurrent works. And it works better than drugs in many cases with none of the side effects. Given that there were 106,000 deaths associated with FDA approved drugs last year, that over three million children are drugged into a drooling stupor with Ritalin (which has 111 side effects and is passed out like PEZ candy in some school systems), and given that we as a nation are stressed out and chemically dependant, the microcurrent revolution is long overdue.