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## A SHOCKING REMEDY

### Pain patients are getting jolts of relief

After years of battling intense pain from a uterine disorder, this is what Lee Kramer's life has come down to:

Multiple surgeries.

Excruciating diagnostic tests.

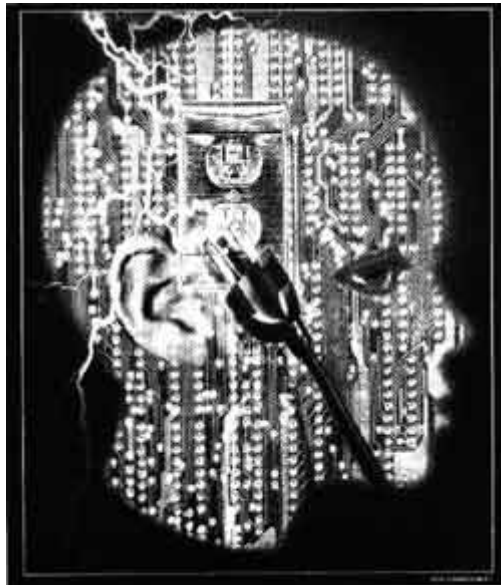
Massive doses of estrogen.

Heavy dependence on narcotics and antidepressants, accompanied by wild mood swings and suicidal feelings.

A two-week hospital stay last April to curb her mounting dependence on methadone and other painkillers

She has amassed \$100,000 in medical bills and is still in pain from her endometriosis, a condition caused by abnormal growth of uterine tissue.

"I was in chronic pain for so long, between the endometriosis and the surgeries, that my system got stuck in the 'on' position," said Kramer, a 40-year-old mother of two who, despite her troubles, exudes a kind of level-headed good cheer.



*"I think we're at a very exciting juncture in medical history. We're starting to look at the human organism as a bioelectric system, not just an anatomical structure. I think it's going to be some years before we know the full ramifications."*

*- Dr. Leanna Standish, Bastyr College*

Relief -- fleeting though it is -- has come from an unlikely source: a pocket-size microcomputer that sends imperceptibly low frequencies of electric current through her abdomen.

"I would put that Alpha Stim on and the pain would stop immediately," Kramer said. "It saved my life. I'm not kidding." The Alpha Stim 100, developed by a California neurobiologist, is part of a growing arsenal of bioelectric devices designed to curb pain and promote healing. Long used in sports medicine and physical therapy, bioelectric treatments are still considered of dubious value by much of the medical establishment.

But that view is changing amid predictions that electricity could be a vital force in curing disease and treating pain. Some practitioners are convinced that futuristic-sounding applications -- limb regeneration, reversal of spinal-cord injuries, cures for cancer and AIDS -- will be sparked by a new understanding of the body's electrical circuitry.

"I think we're at a very exciting juncture in medical history," said Dr. Leanna Standish, research director at Bastyr College, a naturopathic school. "We're starting to look at the human organism as a bioelectric system, not just an anatomical structure. I think it's going to be some years before we know the full ramifications."

Standish, who has a doctorate in neuroscience, is on the advisory panel of the National Institutes of Health's Office of Alternative Medicine. Congress established the office last fall to promote research in unconventional

therapies ranging from acupuncture to herbal teas. Standish said bioelectromagnetic approaches will be among the areas studied.

Already she and a colleague, Barbara Brewitt, have submitted a grant proposal to evaluate the effectiveness of bioelectromagnetic medicine in treating people who are HIV-positive.

Few would dispute that drugs can be an invaluable tool, but some health-care practitioners say electromedical therapies are safer and often more effective.

"The basic structure of the body is bioelectric," said Dr. Frederic Taylor, an anesthesiologist at Swedish Medical Center who has a private, part-time practice called Seattle Pain Consultants.

Although Taylor uses conventional anesthesia during surgery, he said he treats 99 percent of his pain patients with pulsed electromagnetic therapy, including electro-acupuncture and, more often, the microcurrent Alpha Stim.

"I rarely do injections anymore," Taylor said, "because I don't have to."

Microcurrent is a successor to TENS -- transcutaneous electrical nerve stimulation -- which was invented in 1967 as a kind of circuit jammer of pain impulses.

Microcurrent works on a different principle somewhat akin to the ancient Chinese theory of ch'i or ki as a controlling energy force.

"It treats the tissue problem itself at the source of the muscle or nerve and allows it to heal," Taylor said. "Seven to 10 seconds is really all you need to begin to have an effect. The effect doesn't stop when you remove the electrode. It's almost like you facilitate a process of change or healing."

Taylor said microcurrent therapy has brought more relief to his patients than all the nerve blocks and painkillers he prescribed in the previous 20 years.

"If you don't do this stuff, you can't believe it," Taylor said. "It is so against what our medical training has been. The only way to get there is to be so dissatisfied with what you're doing that you're willing to try certain things."

Dr. Jeff Summe, a Lynnwood osteopath, said many of his headache and back injury patients have been helped by microcurrent and by another bioelectric therapy called "interferential."

"You get some people who just swear by it; others say they didn't notice any difference," Summe said. "We're all dealing with testimonial type things."

Microcurrent works well with sprains and strains and has "fantastic results" with headaches, said Jack Teague, owner of Northshore Physical Therapy and former director of the pain unit at Swedish Medical Center.

Several patients reported similar results. Nancy Schwarz, a registered nurse, said she used the Alpha Stim twice a week for less than a month after a sailing accident aggravated an earlier back injury. She said the treatments left her free of pain, enabling her to begin physical therapy.

Kelly Zitkovich, an accountant, uses the device to control back pain stemming from 12 years of competitive gymnastics. Once bedridden and strapped to a back brace, she is completing five years of physical therapy and now leads an active life. The Alpha Stim has become her main pain-control tool, she said, and its effects seem to be cumulative.

The University of Washington Pain Clinic, however, rejects microcurrent therapy as unproven.

"We don't use witchcraft," said clinic director Dr. John Loeser.

Loeser, a physician, dismissed the success stories. "You can have all sorts of opinions and testimonials," he said. "There are all sorts of people who believe a specific thing may have worked."

Because such testimonials are not supported by scientific evidence, Loeser said he wouldn't prescribe microcurrent even as a last resort, although the UW clinic does use conventional TENS therapy. He added that while pain control is elusive, it is a myth that vast numbers of patients aren't helped by conventional remedies.

In West Seattle, former Boeing engineer Jim Suzuki is marketing 10 microcurrent models aimed at relieving pain, healing wounds and increasing blood flow. Virtually all are exported to Asia, Europe, South America and Saudi Arabia, regions where Suzuki said bioelectric medicine is far more accepted.

"We're famous everywhere except Seattle," said Suzuki, president of Micro Current Technology Inc. and its sales arm, Biotherapeutic Computers.

Suzuki said he worked at Boeing for 30 years, developing, among other things, a "fault-isolation" system for the Cruise missile and electromagnetic pulse equipment for the Minuteman missile.

He said his units, which range in price from \$500 to \$6,000, have been approved by regulatory agencies in Japan, South Korea and Hong Kong, but were turned down by the FDA for unspecified reasons.

No one has stronger feelings about the FDA than Daniel L. Kirsch, chairman of Electromedical Products International and creator of the Alpha Stim 100. The prescription device, which sells for \$695 and rents for \$150 a month, is distributed locally by Therapeutic Resources in Mill Creek.

"If the electrical system in the body isn't properly functioning, then the body will fall into a disease state," Kirsch said. "The right applications of electricity can augment the body's ability to heal itself."

Kirsch, whose device has long had FDA clearance, is fighting the agency's effort to halt a specific application called cranial electrotherapy stimulation (CES), used in treating headaches, anxiety, depression and insomnia.

The procedure is far simpler than the name suggests; the user simply attaches dampened ear clips and sets the timer for 20 minutes.

The only sensation is a slight sting on the earlobe and, in some users, a slight wooziness if the controls are turned too high.

At the invitation of Kuwait's public health minister, who was concerned about stress and trauma created by the Persian Gulf War, Kirsch last fall conducted a three-day seminar for 400 doctors and wound up selling 300 of the devices.

CES also is used by some Seattle practitioners.

"It's very similar to meditation," said Taylor, the anesthesiologist at Swedish. "If I'm really, really tired and can't go to sleep, I'll put it on for 20 or 30 minutes and fall asleep."

However, the FDA acting on the findings of a 1979 panel that CES has not been proven effective, is pressuring manufacturers to produce long-term clinical studies documenting their claims. "If they are not able to do that," said FDA spokeswoman Sharon Snider, "they will have to come off the market."

Kirsch, former clinical director of the Center for Stress and Pain-Related Disorders at Columbia-Presbyterian Medical Center in New York, believes the FDA is hostile to nondrug therapies.

He plans to move his operations to Europe next year if the agency suppresses CES, even though he could continue to market the Alpha Stim in the United States as a pain-relieving TENS unit.

"First they went after vitamins, and they're going after CES, and TENS will be next," Kirsch said. "So the only thing left will be drugs."

Standish, the Bastyr research director, prescribes CES for HIV positive patients suffering from depression, anxiety and chemical dependency. "There's lots of research showing efficacy in (those) three areas," she said.

Still, she chided manufacturers for failing to do more research on microcurrent's effectiveness in pain management and healing, "Alternative medicine research is horribly underfunded," she said, "but that is no excuse not to start small."

The future of pain relief probably lies in a global approach that mixes the best of East and West, said Richard Weiner, executive director of the nonprofit American Academy of Pain Management in Modesto, Calif.

"My suspicion is that neither drug nor electric (therapies) will be the answer," Weiner said, "but that the blending of modalities is a better approach."

## Using electricity for healing dates back to very early days

By Cecelia Goodnow  
P-I Reporter

Radical as it sounds today, bioelectricity has been used in the West since A.D. 46, when a Greek physician promoted the health benefits of standing on a wet beach near an electric eel.

By the 19th century, more than 10,000 medical practitioners in the United States were using bioelectric devices, according to "Innovations in Pain Management," the textbook of the American Academy of Pain Management. Sears, Roebuck & Co., for instance, advertised an electric belt in 1902 designed to cure a smorgasbord of ailments.

An example of such Edwardian gadgetry appears in the new film version of "The Secret Garden." One scene shows servants vigorously hand-cranking electrical current to the legs of the bedridden boy, Colin, in an attempt to stimulate his circulation. Electrotherapy fell into disfavor after 1910, when a Carnegie Foundation report by Abraham Flexner concluded it had no scientific basis.

A 1985 book called "The Body Electric," by orthopedic surgeon Robert O. Becker (with Gary Selden), revived interest in the concept of electricity as an "animating force" in physiology.

Becker, who experimented with limb regeneration in salamanders and rats, predicted electricity could lead to new approaches in cancer research, treatment of fractures and ultimately regeneration of human hearts and spinal cords. He also warned of the potential health hazards of products and technology that disrupt the Earth's natural electromagnetic field. Support for the bioelectric premise also comes from Dr. Bjorn Nordenstrom, former chairman of the Nobel Assembly, who has theorized that the body's blood-circulation system works closely with a system of "biologically closed electric circuits." "A sad fact and mystery of modern 'science' is that the medical community has barely taken notice of these remarkable theories," says the academy's pain-control textbook. "Few practitioners are even aware of the works of Becker or Nordenstrom."

Alpha Stim creator Daniel L. Kirsch, who co-wrote the textbook's electromedicine chapter, said Nordenstrom was reviled by his peers and eventually suffered a stroke after publishing his bioelectrical model.

In 1991, however, two German scientists, Erwin Neher and Bert Sakmann, won the Nobel Prize in medicine for research on electrical currents in cell membranes. Their work made it possible to detect electrical currents of a trillionth of an ampere, leading to the discovery that "ion channels" play a role in cystic fibrosis and diabetes.