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Dedication

This booklet is dedicated to all who take responsibility for their lives and their health. I thank my loving family for their support. Thank you to my daughter, Lesley, for her ability to listen to her heart—as an editor and in life.

Statement of Limited Liability

The information provided is for educational purposes only. It is not intended as medical advice. Readers must use their own discretion in determining what is right and true for themselves.

Other Publications by Sharing Health From the Heart Inc.

Sharing Health From the Heart Newsletter

This newsletter features spiritual survival skills and steps to help regain or maintain health in these rapidly changing and health-challenging times.

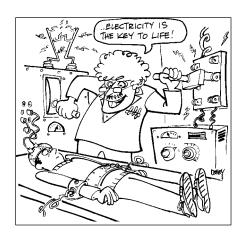
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NABLE to sleep on a hot, muggy summer night, I switched on the television. A movie, Mary Shelley's *Frankenstein*, had started. Professor Waldman, I discovered, was a medical scholar who had been censured for his rebellious ways—he had diverged from accepted academic research. Played by John Cleese, his face loomed on the screen as he explains to Victor Frankenstein, a medical student, played by Kenneth Branagh: "For thousands of years the Chinese have based their medical science on the belief that the human body is a chemical engine run by energy streams." He goes on to explain how they "...insert needles like these

into the flesh at various key points to manipulate these electric streams." The enraptured Frankenstein marvels, "I see, so electricity is the key."

The Chinese have known about and worked with the body's electrical nature from an intuitive basis. What, I wondered, has modern science discovered about the flow of electricity in the body? In addition to the blood stream, the nervous system and the lymph system, what evidence is there for an invisible river of electrons that provide life and health?



The Electrical and Electromagnetic Nature of the Body

Despite the fact it is a fight for scientists to gain recognition and acceptance for their work in proving the electrical nature of the body, there are numerous patents filed, papers published, books written, and web pages devoted to the subject. The research of the following scientists stood out for me. Each breaks new ground in better understanding how our bodies work to keep us alive and well.

Jacques Benveniste, M.D., a French scientist states: "Life depends on signals exchanged among molecules." Obviously these signals travel at speeds beyond

our comprehension. As Benveniste points out, however, the current accepted theory states that molecules communicate only when a 'key' or molecule finds the right 'keyhole' molecule. A key must be put in the right keyhole in the same way we unlock a door. Finding the right keyhole allows the molecule to pass along information or, in other words, create a chemical reaction. He had been a scientist for many years before he realized the absurdity of this theory—it suggests a random and cumbersome process that would be far too slow to account for the speed of reactions in the body. Benveniste's research is based on the fact that molecules vibrate—a fact known for decades. These vibrations he has discovered are the tools of the trade—the communication system by which biological functions are controlled. These vibrations create electromagnetic signals. Water functions as the medium through which high-speed transmission of messages between molecules is possible. "We can now understand," says Benveniste, "how millions of biological molecules can communicate at the speed of light." In addition, identifying the specific electromagnetic frequency for different molecules allows modern science to diagnose and heal using sound or light to produce the specific electromagnetic frequencies needed—a discovery that continues to be ignored by established medicine.

Electrical currents produce magnetic fields which then produce an electromagnetic frequency. As a result, the terms electricity, electrical current and electromagnetic fields are often used interchangeably.

Another leading scientist, Robert O. Becker, M.D., broke new ground with his research in healing using electricity. He started by proving the electrical nature of the nervous system and the brain. In The Body Electric, he states: "Our work on nerves and the brain was leading toward a whole new concept of life whose implications only gradually became apparent."2 Then came his electrifying news that bone healing and growth were set in motion by a tiny charge of electricity. Becker found all the functions of life could be explained by electricity. The crystal structure is a key to understanding the electrical nature of cells. Becker explained, "The electron microscope has shown us crystal-like structures of previously unsuspected complexity in all living cells..."3 He went on to describe a system hidden within the biological structures of the body for electrical transmission. For example, the sheaths surrounding the nerves are not merely insulation as described in established biology but are "real wire" that "reach into each area of the body to create a normal electrical environment around each cell, or a stimulatory one when healing growth is needed." Becker states boldly "those embarrassing little oddities that the chemical-mechanistic theory could not explain are beginning to be understood by...this new paradigm."

Modern medicine is ignoring an important key not only to better understand how the human body functions but also a key to better help it to heal. Franz

The Electrical and Electromagnetic Nature of the Body

Morrell, M.D., a German researcher, inventor and author, also proposes an electromagnetic system to explain how the body can transmit large amounts of information extremely fast. How much information? Morrell says: "In a single cell the amount of information being transmitted per second is so great that it would take a hundred years to read if it were printed."

A contact in Europe surfaced with more evidence of the electrical river in our bodies. By e-mail he sent a news story from *Science & Vie*, a French magazine, stating: "White cells (leukocytes) kill bacteria and pathogenic fungus by electrocuting them." This research came out of Switzerland. The researchers did manage to get details of their discovery printed with a letter published in *Nature*.

The next researcher that stood out reminded me of what I was taught in high school science—that the exchange of sodium and potassium across the cell membrane created a pump that is an essential function to sustain life. A physicist in Greece, Panos Pappas, Ph.D. reminds us what we are *not* taught. Pappas explains how the pump hypothesis is not complete, as it does not account for the differing amounts of sodium in relation to potassium going in and out of the cell. What, then, is the missing ingredient? The missing ingredient is electricity! The rapids get rougher here, as mainstream science does not accept transmutation—one element being changed or transmuted into another. Both a French and a Japanese scientist, Louis Kervran and George Ohsawa, proved that sodium can be transmuted into potassium with the addition of oxygen and…electrical energy!

I was struck by Pappas' sense of wonder and awe as he explains how electricity sustains life and creates the chemical reactions our bodies need. After tracking a trail of reactions in the body, Pappas exclaimed, "This makes understandable the wisdom of positioning the adrenal gland on the top of the kidneys." It seems God knew what It was doing after all! Or as Daniel L. Kirsch, Ph.D. and Fred N. Lerner, Ph.D. sum up: "Atoms are bonded electrically. Further in our rudimentary training we learned that there are voltage potentials across the membrane of all cells. They do not, however, speculate on the staggering significance of these facts." Researchers with open minds who are willing to go beyond established laws and theories are getting closer to understanding God's grand design for how we fit in the river of life.

The Body's Use of Light and Sound to Generate Electricity

A LL religions agree—there is a life-force that sustains us. It's called the Holy Spirit, the Divine Mother, the Qi or Chi, the Eck TM , the Force and other terms. Most scriptures describe this forming-power as Light and Sound. Like many

others, I enjoy the uplifted feeling and insights that comes from experiencing this Light and Sound of God inwardly using contemplative techniques.¹⁰ How does this Light and Sound, however, manifest physically?

Let's start with Hertz and his discovery of the "photoelectric effect." This effect means that light interacts with matter to create electricity—when light strikes a substance, electrons are discharged. Later, Einstein proposed that we receive light as tiny particles called photons. The photon is both a particle and a wave that travels at the speed of light. Light radiation from the sun comes in varying wavelengths or frequencies. The energy or electrical potential of photons varies according to the frequency of the radiation they carry.¹¹

We absorb photons with their varying frequency or degrees of energy directly from sunlight and to varying degrees from plants depending on their health or nutrient content. Photons from the sun are absorbed not only through the eyes but also the skin. Research confirms the existence and importance of the acupuncture points and meridians for conducting light to the body. And...the acupuncture points and meridians have also been proven to be more electrically conductive than surrounding tissue.^{2,11}

I was excited to learn that light produces electrical currents in the body that, in turn, produce electromagnetic fields. I found it even more intriguing to discover that the reverse is also true—electricity generates photons so our bodies emit light! Biophotons is the term used to describe light emitted by the body. DNA is us. It is the blueprint found in every cell that makes each of us unique. It stores the information needed to generate new cells that form our liver or our heart or any part of us. DNA can absorb, store and then re-emit light—it is the body's electrical transformer.¹²

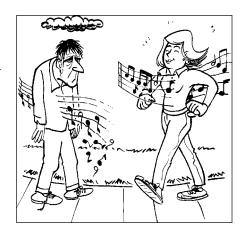
Fritz Popp, Ph.D., a German researcher, is the leader in biological photon research. A photon, he says, is a process rather than a particle. It is an electromagnetic field that can be measured. His measurements show the millions of reactions within a cell each second can only be explained by the speed of light—neither thermal radiation or chemical reactions can account for the work done by the cells. "Photons are the real regulators of our biological systems," he says.¹³ One photon can trigger one million reactions in one second and the reaction rate increases with the number of photons available. Healthy cells glow with the dance of biophotons. Biophotons, explains Popp, substitute for the sun during the hours when we're not exposed to it—they can deliver an equivalent intensity! As one researcher states: "We are in a very literal sense light beings as ancient mystical teachings profess."¹¹

"What about the body's use of sound?" I thought. "Remember the universe was created by sound. Very shortly the scientists will be saying this," Richard Gerber, M.D. reminded us in 1988 with the publication of *Vibrational Medicine*. Sound

The Body's Use of Light and Sound to Generate Electricity

absorbed through the ear or the skin is also translated into electromagnetic fields. We think of sound and light as separate phenomenon but they're simply the same energy—detectable at different frequencies and wavelengths. Light in frequencies above, below and within the visual spectrum is both absorbed and emitted by the body. So too is sound both absorbed and emitted from above, below and within the audible range. "Small sophisticated tuning forks." That's how one researcher described the DNA in a cell. Dr. Glen Rein, a biophysicist, describes experiments with a composer who brought the infrared light spectra of DNA into the audible range. Apparently when DNA sequences are converted to music it sounds musical. Live blood cell analysis and other measurements proved this music to have a greater healing effect on the body than Gregorian chanting.

Just as we emit light, we all emit sound as well—to varying degrees depending on our health. If you care to apply the discipline and practices of The Qigong masters in China you have a high level of sound at your command. Research proves their discipline and practices result in sound signals from their hands one hundred times more powerful than the average person and one thousand times more powerful than those who are ill.¹⁷ The Book of Sound Therapy reminded me again of God's grand design in the bodies we use. "The human being is…likened



to a very complex, unique, and finely-tuned musical instrument...the body continually broadcasts the frequencies of physical, emotional, mental and spiritual life."¹⁸ Research shows when missing sound frequencies are restored, the body heals. The author of *The Book of Sound Therapy* also traces the value of chanting as having "therapeutic powers by establishing and maintaining the tuneful harmony between human and heavenly existence."

Electricity as Nourishment

How does light and sound as electrical nourishment work? Disease I discovered does not start with vitamin deficiencies. I now understand that chemical deficiencies be they hormonal, vitamin or mineral show up at a later stage. The body's first signal that all is not well is vibrational or electromagnetic. Damaging

frequencies are stored in cells. These damaging waves may build up unnoticed for years. Chemical changes begin to appear later. Bacteria, viruses and other pathogens take hold. It took me many years to recognize that my unhealthy lifestyle—poor diet and lack of exercise, emotional and mental stress, and environmental pollutants were aging my body faster than necessary. I now realize this lifestyle was creating damaging frequencies that could be detected long before physical symptoms erupt.

Drugs are often the treatment of choice when disease is diagnosed. W. Langreder, another German researcher warns, however, "They [drugs] act in the body by suppressing damaging waves from a sick organ and forcing them into healthy tissue." In other words, 'damaging waves' are created by the body's electrical response to stresses. These damaging waves are stored and build up until a physical symptom or illness erupts. If we suppress these damaging waves with drugs rather than release them by stimulating the body to heal itself, they "move first to the jawbones, which steer them on to the teeth." Tooth decay is an early warning signal of disease. From there he warns, "A chain of complaints follows which neither the patient nor the doctor connects with the earlier allopathic [drug] therapy—the seemingly quick healing that has, on the contrary, caused the problem."

To restore health, the flow of energy in the cells in the form of electromagnetic waves or oscillations must be re-established. This is not usually an instant process. Time and patience are necessary to coach the body back to electromagnetic equilibrium for health. Better-known therapies that work to balance the body electrically or energetically to allow for chemical balance are: acupuncture, homeopathy, applied kinesiology (muscle testing), chiropractic, lymphology, accupressure, massage, Bach flower remedies, aromatherapy, color therapy, nutritional products brimming with photons, and many bio-electric devices.

History of Electro-Medicine

HISTORY came alive for me when I read that electric fish were the earliest recorded form of electro-medicine. I wondered how many people over the ages had rejuvenated themselves accidentally and then deliberately by a run in with an electric eel. I'm sure such encounters could have been fatal as well. The ancient Roman physician, Scribonius Largus, in 46 AD, 'cured' headache and gout by having patients stand on a wet electric torpedo fish. Or. Norm Shealy reports, "Intermittently the electric fish was used for a variety of illnesses until about 1745 when 'artificial' electricity began to replace the less controlled natural source."

History of Electro-Medicine

By the 19th century electricity was used extensively in health spas and as part of medical treatments



It continued to thrive into the 20th century. I enjoy a dose of electricity as a result of this era every time I visit Disneyland. Two devices from earlier in the century attract me with the headline, "Electricity—The Silent Physician" and one states further, "Electricity is Life."

Researcher, Georges Lakhovsky, actually had hospital cooperation in the eastern United States for his work with electricity in the early part of the 20th century. He published a book, *The Secret of Life*, in 1935 to describe the variety of disease conditions that were cleared in humans, animals and plants with his Multiple Wave Oscillator. He affirmed, "the cell, essential organic unit in all living beings, is nothing but an electromagnetic resonator, capable of emitting and absorbing radiations of very high frequency."²² As the medical cartel closed in, his research ended.

Many years later, Robert C. Beck, D.Sc., a distinguished physicist, brought Lakhovksy's Multiple Wave Oscillator to public attention. It became known among those who continued to research electricity for health as the 'Beck antenna'. In a paper published in 1963, Beck reported: "Within this multiple-wave range of frequencies, every cell in the body can find its ONE resonant frequency and absorb energy at its own natural wavelength." ²³

Independent of Lakhovksy, Royal Raymond Rife, was having phenomenal success in the western U.S.—clearing cancer in California with a bio-electric device. Barry Lynes summarizes his story for us in *The Healing of Cancer*: "In association with the University of Southern California, a number of clinics used Rife's technology to cure terminal cancer during the period 1934–1938. Some of the leading researchers in the country and leading physicians in Southern California participated." On May 6, 1938 the *Evening Tribune* in San Diego featured an article titled, "Dread Disease Germs Destroyed by Ray, Claim of S.D. Scientist," by Newell Jones. Despite a sub-title that heralded a new era: "Cancer Blow Seen After 18-Year Toil by Rife" the research came to a sudden end. Laboration out about the Rife cancer cure...the entire program was destroyed within six months. ... Rife was hauled into court and the treatment was effectively quashed."

What gave the AMA such power? Why did research with electrical health devices have to go underground? In the U.S. up to the 1920's, medical training was available from a variety of schools offering differing specialties including the use of electricity. Under the guise of protecting the public, the "Flexner Report" prepared by Abraham Flexner of the Rockefeller Institute was commissioned. This report recommended commercial medical schools be closed and that university medical schools adopt a standard curriculum. This curriculum did not include electro-medicine. Dominance of the surgical and pharmaceutical approach to health was soon established.

Despite peer censure, leading scientists have continued to pursue electricity for health throughout the twentieth century. Björn Nordenström, a medical doctor in Sweden is one—he has been using electricity for cancer patients. He has a prestigious reputation as a former Chairman of the Nobel Assembly and the inventor of the needle biopsy. In 1983 he published a book titled *Biological Closed Electric Circuit Clinical, Experimental, and Theoretical Evidence for an Additional Circulatory System.* He says, "...all living systems contain numerous functioning electrical circuits. ...These circuits exist in all bodily functions and...determine the well being of the body."

Today, Russian scientists are considered the leaders in electro-medical research. The "Kremlin capsule", an electronic pill that activates in the stomach is supposed to be the secret to keeping aging and ailing former Soviet leaders and present Russian leaders alive.²⁷ Information on the Internet states: "It makes possible drugless, non-traumatic, non-chemical, non-toxic, non-allergic treatment. No negative consequences or side effects have been observed." The one draw back, as I see it, is retrieving the launch capsule once it is expelled with feces.

Environmental and Food Factors

BEFORE examining bio-electric devices further, let's look at environmental influences and foods that are helpful or harmful to the body's electrical systems. Dr. Fritz Popp, father of bio-photon research, has developed a system to measure whether a food or substance is toxic or to what degree a substance is beneficial to the cells. The greater the capacity of the food to store light, the greater the value to our health. As an example, Popp used his testing method to compare eggs raised by two different methods. Free-range eggs are considered superior because the chickens are allowed to live naturally—to wander and to feed on greens as well as grain. The industry producing eggs for the mass market, on the other hand, keeps chickens caged and unable to move about. In his testing he did not find any difference in the chemical composition of the eggs—nutrients appeared to be equal. He did, however, find that the free-range eggs transmitted more light.¹³ This means they provide a greater benefit to the body electrically. Ultimately, then, the free-range eggs provide more chemical nourishment for the body as well.

Reporting on Dr. Patrick Flanagan's research in *Towards a New Alchemy*, Nick Begich tells how ingesting raw amino acids, the building blocks for protein, boosted the energy or electrical readings of the acupuncture points dramatically.²⁹ Other foods that boost the energy flow are fresh vegetables and fruit—especially organically grown. The water we drink should still have a high degree of electrical energy. Flanagan, among others, describes water to be the most electrically alive when it's whirling flow has not been impeded and it retains a ready supply of naturally dissolved colloidal and ionic minerals. Raw foods are superior to cooked because of their photon energy. This has also been proven with Kirlian photography, which is another method to measure light emission.³⁰ The late German researcher Hans Nieper, M.D., speculated: "...the electrically active beta-carotene possibly plays an important role in the effectiveness of the raw foods." Supplements with beta-carotene, he reported, did not have the same effect with Multiple Sclerosis patients as the raw food. With a dependence on processed foods and synthetic food supplements, it's easy to see how modern diets lead to electrical starvation.

Flanagan also noted that emotional states cause our electrical readings to fluctuate widely. And, here's some of the environmental factors that interfere with the electrical activity of the body: synthetic clothing; indoor air from synthetic carpeting, drapes and upholstery; electric saunas, forced air heating and electric baseboard heating; cigarette smoke; aluminum; and building materials that shield or distort the natural energy fields from the earth and the universe. Long term exposure to metal toxins such as mercury interferes with the electricity of the cell as well.

Table 1: Electrical Measurements of the Human Body

Healthy cell: At least 70 mV (milliVolts)

Diseased cell: 15 mV range

Nerve cell at rest: -70 mV changes up to

+40 mV

Cell membrane electrical potential: = 2,000 Volt power line

Fat: two layers one millionth of an inch thick make up cell membrane:

Insulating quality is vastly more efficient than all man-made materials.

Body walking beach/forest: 20 mV: beneficial negative

ions

Body in a thunder/lightning storm: Difference in potential

from feet to head: from normal 260 V/m to 20,000 V/m so can attract lightning.

DNA resonates at: 50 + billion Hz

(50 + GigaHertz)

Body cells resonate at: 1,520-9,460 kHz

or 1,520,000 Hertz & up

Number of cells in the body Each cell is kept separate

is approximately 100 trillion: by a watery fluid.

Cell renewal rate: 7–10 million per second

Water transmits electromagnetic 10

information:

10,000 water molecules for every protein molecule.

Water content of body: – brain: 90% water,

− body: 70%+ water

Cellular water is different in that it is composed of liquid crystals:

66.6% of the body's
water resides inside cells
33.3% of the body's
water resides outside cells

Environmental and Food Factors

Not all electricity, of course, is beneficial. Considerable evidence exists that power lines, transformers and appliances transmitting or using high voltage, 50 or 60 cycles per second, alternating (AC) current emit harmful extra-low-frequency (ELF) waves. This type of electricity does not occur in nature. Most bio-electric devices for healing, on the other hand, work to duplicate the natural electricity of the earth and the body to help generate healing.^{3,32}

Electro-Therapy Devices

I've learned that many of the electromagnetic devices used by established medicine for diagnostic purposes, such as the electroencephalogram (EEG) to measure brain wave activity and magnetic resonance imaging (MRI) to search for tumors, generate more electricity than the bio-electric devices used as therapies. X-rays, in particular generate ionizing radiation. They are not safe as x-rays actually ionize molecules when they strike the body. These ionized molecules can then form chemical species that can be toxic to the body.

Dr. Becker, truly a pioneer in electro-medicine, stated: "It is now evident that a wide variety of waveforms, pulse shapes, frequencies, and current densities will give considerable pain relief." Two devices in particular have gained FDA approval. One is the TENS (Transcutaneous Electrical Nerve Stimulation) unit used for sports injuries and pain relief. The other is a cranial electrical stimulation (CES) unit. They have proven effective as therapy for addictions and depression. The use of electricity for bone healing is not as widely known. An associate of Dr. Robert Becker, C. Andrew Bassett, M.D., obtained FDA approval for the use of Pulsed Electro-Magnetic Frequencies (PEMF) for healing difficult bone fractures. A pulsed magnetic field therapy device for animals has also been used effectively by veterinarians for many years. IBS Systems Inc., a Swiss company with an office in the US, provides many case studies on healing bone fractures, wounds and diseases using this therapy.

I was able to contact Dr. Benjamin Lau, a medical researcher at Loma Linde University. He conducted research on sports injuries in the 1980's using a Pulsed Magnetic Field device. Despite the fact he was getting promising results, he could not get funding to continue the research.³⁵ That was the fate of Dr. Robert Becker's research as well. He reported in *The Body Electric*, "The lab ceased to exist on New Year's Day 1981."²

Despite the lack of research funds for electro-medical research, both Robert C. Beck, D.Sc. and Hulda Regehr Clark, N.D., Ph.D. have persevered. These two researchers stand out as they've brought the benefits of bio-electric devices directly

Table 2: Outputs of Electro-Therapy Devices

Micro-current technology (Beck): 50–100 μA in blood.

Patent #5,188,738: up to 100 μA
Pacemaker: 100 μA

Wound healing experiments: $200-1,000 \mu A$ FDA approved for Bone Growth: $10 \mu A DC$ CES devices: $10 to 500 \mu A$

TENS devices: 60 µA with shorter pulse

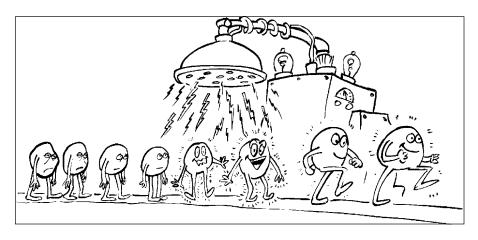
to public attention. Both also have brought bio-electrical healing into the home with instructions on how to build devices. In her best-selling books, Dr. Hulda Clark provides information on how to build a Zapper. In The Cure for HIV/AIDS, Clark stands bravely before entrenched medical opinion: "Electricity can now be used to kill bacteria, viruses and parasites in minutes, not days or weeks...learn to build the electronic device that will stop it immediately. It is safe and without side effects and does not interfere with any treatment you are now on."36 The Zapper emits a frequency that is lethal to pathogens but safe for the human body. Clark explains that the human range of frequency or bioradiation is from 1,520 to 9,460 kHz. The pathogen range of frequency is much lower—from 77 to 900 kHz. "Fortunately for us we can work on zapping pathogens in the lower ranges without affecting humans in the upper range. ... I have seen no effects on blood pressure, mental alertness, or body temperatures. It has never produced pain, although it has often stopped pain instantly." Clark adds, "Zapping does not kill shielded organisms such as those that may be in the middle of your stomach or intestines." She provides a detailed health protocol including the use of herbs to rid the body more completely of pathogens to regain health.

Robert C. Beck, D.Sc., a retired physicist, risked his reputation as a distinguished scientist to bring the benefits of micro-current and pulsed magnetic field devices to the public. Beck's achievements include the invention of the flash bulb, a miniaturized SQUID device that measures minute amounts of electromagnetic radiation and research on the brain leading to the Brain Tuner, a CES device. The avenue of research that caught Dr. Beck's attention was quickly blocked—the only remaining printed evidence of the micro-current research of Steven Kaali, M.D. and William Lyman, M.D. at Albert Einstein College of Medicine is US Patent Number 5,188,738 filed in 1993. Again, electricity proved "to render the bacteria, virus, parasites and/or fungus ineffective to infect or affect the normally

Electro-Therapy Devices

healthy cells while maintaining the biological usefulness of the blood or other fluids."³⁷ On a CBC radio broadcast Dr. Lyman explained the level of current was considered safe as it was about the same as pacemakers which have been used safely for many years.³⁸

After discovering this patent, Beck applied his inventive genius to develop a non-invasive device to pulse micro-currents into blood. He designed a device to not only overcome the natural impedance of the skin, but to also produce enough voltage to create the necessary microcurrents in the blood, to ensure there would not be undue heat and to ensure the blood would not be ionized. The blood electrification device evolved to two electrodes placed over the arteries (pulse points) on the wrist. At these points the arteries come closer to the surface to better allow the electricity to reach the blood.



Later, realizing the lymph holds about 10 times the amount of viruses and bacteria as blood, he invented a direct current pulsed magnetic field device to use on lymph node sites. The strength of the pulsed magnetic field is geared to create the same level of microcurrents in lymph and tissue as the blood electrification unit. This level as stated in the patent is 50 to 100 microAmperes of current. Beck states: "There are no known side effects since milliAmpere currents applied to skin are much lower than those in FDA approved TENS, CES and muscle stimulators which have been in safe daily use for many years." Beck does not sell any devices. Instead he publishes how to build the devices. He also recommends a company that manufactures the devices for those who are not technically proficient.³⁹

How the Devices Work

Bafter the use of Beck's devices that I realized they must have been doing more than rendering pathogens ineffective. With the threat of germ warfare and increasing reports of contrails from high-flying aircraft creating respiratory infections, I don't want to minimize the importance of having a device to inhibit viruses and other pathogens. A bio-electric device in the first aid cabinet is a great idea.⁴⁰ To regain health, however, the immune system must also be stimulated to allow the body to heal itself. In *The Body Electric*, Becker explains: "On earth, all entities formed within the 10-hertz discharge." 7.83 Hz is a more exact reporting of the earth's pulsating magnetic field—often referred to as the Schumann effect. Becker continues, "...it can be used to restore normal circadian rhythms to humans cut off from the normal fields of earth, moon, and sun." The frequency of each square wave emitted by Beck's electrification unit is half of the earth's 7.83 Hz frequency. Each complete wave, then, emits the same frequency as the earth.

An article about the use of microcurrents in sports medicine in the *Alternative Medicine Digest* summed it up this way: "...they seem to recharge the cellular 'battery,' which in turn leads to healing." I found evidence for three more ways that electricity restores health. Dr. Flanagan explains that blood and all cellular fluids must have a high enough negative charge or Zeta Potential to keep cells and all particulates in suspension. If they don't, the various particles will clump together and form sludge. He explains that very few health professionals are aware of Zeta Potential and its importance to health because it is studied only within colloidal chemistry. Live blood cell analysis with a darkfield microscope before and after a microcurrent protocol shows improvement in the shape and strength of the cell membrane with less clumping and a better flow of the cells. It appears Zeta Potential is boosted.

Another benefit relates to the production of ATP (adenosine triphosphate). It is the molecule formed in the cell that is crucial to giving the cell and the body energy to function. Aerobic respiration (oxygen) results in the production of hundreds of thousands of ATP molecules each minute in a typical cell. U.S. Patent Number 5,133,352 for the treatment of Herpes I and II states: "Low voltage electrical current actually recharges the energy level of the cell which changes the biochemical working of the cell at micro levels. This has been shown in recent studies to increase ATP energy production by up to 500%, and increased protein absorption into the cell between 30 and 40%."⁴² Perhaps this is why individuals suffering from CFS (chronic fatigue syndrome) often report dramatic improvement in their energy level with blood and lymph electrification.

Electroporation explains why protein and other nutrient absorption may be enhanced. Electroporation occurs when microcurrents are applied to the body—cell walls become more permeable allowing nutrients to pass in and out more readily.⁴³ This is a plus, of course, when beneficial nutrients are present in the blood stream. On the other hand, it can be a threat if potentially toxic substances are circulating in the blood. I know my skin broke out in pimples after I ate several chocolate chip cookies while wearing the blood electrification unit. For that reason, Dr. Beck issues a warning to avoid the use of caffeine, prescription drugs, alcohol, and nicotine when using the electrical protocol. It is also wise to ensure that vitamin and mineral supplements are from completely natural sources.

Yet another explanation by physicist, Gary Wade, details how microcurrents and a pulsed magnetic field are effective. They create ultrasound frequencies in the cell membrane. This sound disarms viruses and bacteria but is beneficial to the cell. The level of ultrasound produced is safe, he explains, as it is one billionth of the ultrasound used in diagnostic medical equipment.^{44,45}

As we feed the river of electricity within, improved circulation, increased oxygen levels in the blood, and an alkalizing effect on the cells are also ways research is proving the body is helped.⁴⁶ I like the way Michael Hutchison puts it in Mega Brain Power, "the electrical impulses themselves, if delivered in the proper form and at the proper intensity, must be like the purest nutrient."⁴⁷

The Electrical Nature of the Earth

The physical body would die without the nourishment of electromagnetic waves of light and sound. This has been illustrated by tests with rabbits that were kept in Faraday cages that block any incoming electromagnetic radiation. They died in three to six weeks.

So too, our earth must be constantly nourished: "Without lightning all life on the planet would die," states Eldon Byrd, a contemporary researcher. "Lightning is the mechanism by which the earth restores itself. ... Earth is like a giant battery or capacitor." In fair weather, electrons are constantly being released from the earth's surface. Lightning is the mechanism that restores the earth's charge to continue to sustain life. The electrical energy of lightning, in turn, creates a chemical reaction to sustain life. It was estimated back in 1936 that one hundred million tons of nitrogen is fixed annually by lightning and carried to the earth's soil by the precipitation of rain, snow and hail. Pitrogen plays a key role in the nourishment plants provide us.

Electricity is essential to the life of our planet and our bodies. Byrd, among others, says the core of our earth behaves like a giant crystal that is a key source of

electromagnetic energy. So too our cells contain crystalline structures to generate electromagnetic energy. Just as the water in the body has a major role in sustaining our electrical charge, so do the oceans of the planet have a major role in sustaining the earth's electrical charge. The earth's average magnetic field intensity has decreased by over 50% in the last 5,000 years and continues to decrease. ^{2,50} Space shuttles have built-in magnetic fields to maintain the health of astronauts while away from earth. The electromagnetic energy of our earth is important to our health and well-being.

Table 3: Earth's Electrical Measurements

Wind: No harm: less than 200 Volts/metre

Caution: 200-1000 V/m

Santa Ana Wind: 500-5000 V/m

Between earth & ionsphere:

Good weather: Billions of Volts up to 50 km above

earth

Thunderstorm: 2,000–20,000 V/m

Forest: 20-200 V/m

Sun's energy at earth: 52–78 GigaHertz: the resonance to

sustain DNA

Health in the 21st Century

Today we are suffering from magnetic field deficiency. Our bodies are starving for electricity. The body's electrical nature has been known for centuries. For hundreds of years, maverick scientists have pursued research about the electrical nature of our bodies to better understand how we can regain our health. These same mavericks have braved the scorn of peers in an effort to make the electrical nature of our bodies known to the world. Research devices are available—some with government approval and some not. Giving our body the electricity it needs requires careful choices in food, changing the environment in which we live and using available bio-electrical devices.

It is up to each of us to take responsibility for our health. It is up to each of us to ask that research on the electrical nature of our bodies and on bio-electric

Table 4: Light a	and Sound Freq	uency Ranges

Range of visible light:

Red to violet, 780-400 nanometer GigaHertz range: increasingly shorter (infinitesimally short $4.00-7.12 \times 10^{14}$ Hz wavelengths and wavelengths.) (I GHz = 10^9 Hz)

increasing energy.

 $2.99 \times 10^{14} \text{Hz}$

Radio 1000 nm: less energy Radio ranges from

100 GHz-10 kHz

Ultraviolet and X-rays Shorter, 250 nm Higher frequency:

greater energy $14.96 \times 10^{14} \, \text{Hz}$

Speed of light 3,000,000 meters/sec 186,000 miles/sec

Range of auditory sound:

20-20,000 Hz or cycles per second

Thunder 20–40 Hz Middle C 256 Hz

Conversation 200-400 Hz

Mouse 3,000 Hz

Ultrasound:

Above 20,000 Hz

therapies be escalated. It is up to each of us to decide what choices we want available.

Our planet appears to have something we do not. It has the ability to sustain itself. The dramatic increase in lightning strikes and earthquakes are considered part of the process of a planet working to rebalance itself. Given the right electrical nourishment, our body also has the ability to restore itself without cataclysmic reactions. Despite the stresses and pollutants man must deal with today to maintain health, if we so choose, medicine for the twenty-first century can be gentler. It will work to stimulate the body's own electromagnetic healing forces.

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Units of Measurement

Distance

km = kilometre (one thousand metres or 1×10^3 metres)

nm = nanometre (one billionth of a metre or 1×10^{-9} metres)

Electricity

Hz = Hertz (a measure of frequency in cycles per second)

kHz = KiloHertz (one thousand Hertz or 1×10^3 Hertz)

GHz = GigaHertz (one billion Hertz or 1×10^9 Hertz)

A = Ampere or Amp (the rate of electrical current)

 μA = microAmpere (one millionth of an Amp or $I \times IO^{-6}$ Amps)

V = Volt (a unit of electromotive force)

mV = milliVolt (one thousanth of a Volt or 1×10^{-3} Volts)

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