Healing with Electromedicine and Sound Therapies

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Part One

Introduction

In the 1960s, counterculture hippies were urging us to give peace a chance (great advice). To expedite that process, it was helpful to have "good vibrations"—considered so important, the Beach Boys wrote a catchy song with that title. It was easy to tell who had good vibes and who didn't. An optimistic, considerate person was considered "high frequency," while a pessimistic, disagreeable individual was "low frequency." Not surprisingly, everyone wanted to be around the folks who had good vibes.

Colloquialism aside, saying that someone is "high frequency" is based on legitimate science. Every molecule, cell, living body, and object is comprised of energy that manifests as physical matter. Some of that energy is detectible as frequencies that belong to one or more radiation bands in the electromagnetic spectrum. And these frequencies correspond to biochemical and biological processes in the body.

In the healing arts, there are different ways to affect matter. With conventional medical care, the chemical, functional, and/or structural change in organs, glands, and other tissues are created either through biochemical manipulation (through drugs) or physical manipulation (such as surgery). With electromedicine therapies, healing is achieved by working with the electromagnetic radiation (emissions) and related energy fields that form, and are emitted by, physical matter. Broadly speaking, electromedical devices produce and focus specific frequencies that can be in the form of electromagnetic fields, electrical current, magnetism, visible light, heat, or other energy.

Although electromedicine is widely used in Europe, it is less known in the United States. Few people in developed countries would question the use of the ubiquitous transcutaneous electrical nerve stimulation (TENS) unit, which emits small amounts of electrical current to manage pain. And magnets embedded in the insoles of shoes, also for pain management, are now a regular item in consumer catalogues. But electricity and magnetism are primarily used diagnostically in hospitals—such as with the standard electrocardiogram (EKG or ECG) to assess the health of the heart and with magnetic resonance imaging (MRI) to show the inside of the body. Most medical professionals (and the lay public) are not inclined to take advantage of less popular electromedical devices because they do not understand how they work. And those who do use the equipment might talk about "frequencies" or "energy" without a full grasp of what these actually are or the science behind the technology.

Fortunately, receptivity to electromedicine is increasing. Health professionals are expanding their practice (and their success rate) with safe, holistic technologies. The general public is beginning to recognize and request electromedicine as an effective and valid treatment modality. In this article, I will explain what "frequency" and other terms mean as they are applied to the electromagnetic spectrum; review electromagnetic energy in living systems; explore several types of electromedical modalities; and discuss a related modality: sound therapy.

Electromedicine Throughout History

Healing with electromedicine is not new. From electricity (lightning) and static electricity (friction) to magnetism (lodestone), from the sun (for its far infrared and ultraviolet radiation) to visible light (for its different colored wavelengths), humans have used electromedicine for healing since ancient times. The therapies were first based on natural phenomenon,

but about the early 1800s, electrical current began to be harnessed—first for providing light and then for more sophisticated needs, such as for telegraphing messages over long distances and running machines in factories. By the 1900s, electrical power was common in the home as well as the workplace.

Given the healing properties of many forms of energy, it did not take long before numerous electronic devices invented for medical treatments were considered mainstream. In *Electrotherapy and Light Therapy with Essentials of Hydrotherapy and Mechanotherapy*, published in 1949, Richard Kovács describes an impressive array of electronic equipment, most of which had already been in use for half a century. This equipment utilized alternating current, direct current, low frequencies, high frequencies, static electricity, diathermy, infrared rays, ultraviolet rays, and ultrasonics. Modern electromedicine practitioners will recognize some of these devices as forerunners of those used today—if not *the* machines still being used, since some devices have not changed much in 100 years. Some of this equipment included Georges Lakhovsky's multi-wave oscillator, the Violet Ray (which utilized Nikola Tesla's coil), Edgar Cayce's wet cell, and Dr. John Harvey Kellogg's electric light cabinet. The conditions treated were virtually unlimited: muscular aches and pains, skin conditions, gynecological problems, some heart conditions, respiratory ailments, gastrointestinal disorders, acute and chronic infections, and degenerative diseases.

Given the wide applications of such equipment over half a century ago, what seems remarkable is not the abundance and range of devices, but rather the resistance to electromedicine today. Of course, the invalidation of electromedical therapies by the medical mainstream—and laws passed to suppress the use of such devices—drove these modalities out of the public's immediate consciousness. Electromedicine as a valid treatment modality has met with derision and skepticism from practitioners and laypeople alike. But electromagnetic fields are successfully used for diagnostic purposes, with the understanding that living organisms are energy-based. If all sorts of electrical, thermal, and magnetic devices (as well as the acoustic-based ultrasound) are used for testing, why can't they just as easily be used for healing?

As might be expected, the pharmaceutical industry has taken advantage of people's ignorance and resistance to any modality that seems new and strange, for if the benefits and track record of electromedical devices were widely publicized, drug companies would lose billions of dollars each year. There is little effort by mainstream media to educate consumers, since it depends on considerable revenues from the advertising of drugs.

Unlike drugs, each of which can be used only one time by one person and for just one or two conditions, the many electromedicine modalities that have emerged in the last century

- are non-invasive,
- support the body's innate ability to heal, instead of substituting for its natural functions,
- are fairly easy to use, by laypeople as well as professionals,
- can be utilized over the course of a lifetime (since they address many conditions),
- can be used with more than one person, and
- are relatively inexpensive, considering their range and scope.

How and why do electromedical devices work? Whether one is a health care provider or a seeker of health services, understanding the science behind electromedicine can make the difference between discerning good vibrations from bad. The best place to start is with a discussion of the EM spectrum and its related component, sound.

The Electromagnetic Spectrum and Sound

EM Spectrum Defined by Its Particles and Their Effects

The electromagnetic spectrum (or EM spectrum, sometimes also called EM waves) is the term used for many different energy oscillations that comprise our known universe. As shown on the chart of the EM spectrum at the end of this article, these different oscillations with different characteristics range from the slower-moving, lower-energy electrons of electrical current to the faster-moving, higher-energy photons of visible light and other waves.

It's common to think of the various EM energy bands as unrelated phenomena that are separate from each other, since we perceive them differently with our senses (when we can perceive

them at all). We see visible light as color, we feel far infrared radiation as heat, and so on. But all these energies are sequentially connected to each other as a *continuum of waves* in the EM spectrum. The nature of the particles depends on how fast they are moving and the qualities that they exhibit.

Humans perceive most of the EM frequencies *indirectly* through their *effects*, rather than directly perceiving the frequencies themselves. We label and differentiate EM waves from each other, according to how they manifest physically. By harnessing the waves with various electrical devices and some passive (non-electrical) materials, we can produce tangible physical phenomena. For instance, we access frequencies on the radio spectrum with an antenna, which transmits and receives radio broadcasts. An X-ray machine utilizes certain radiation on the X-ray band, which allows us to see inside the body, and so on.

The existence of an EM field includes both electric and magnetic fields. An EM field has certain properties, electrical fields have other properties, and magnetic fields possess yet others. Electrical and magnetic fields can be separated from EM fields as their own distinct energies. They can also exist in EM fields in varying proportions.

Frequency, Wavelength, and Amplitude

All the energies in the EM spectrum have different frequencies. The term *frequency* pertains to the number of cycles per second (CPS) at which a wave vibrates or moves. (The designation "CPS" has now been replaced with hertz, or Hz.) Waves also have different *sizes* or *lengths*, with various terms used to measure the length such as micron, angstrom, nanometer, and meter. (The waves shown below are *sine* waves. Different shaped waves will be discussed later.)

Wave is a ***movement of energy*** *along a directional axis*.

Frequency is a ***rate of oscillation*** measured by the ***number*** of wave cycles per unit time (usually in cycles per second, or hertz).

Wavelength is the ***length*** or ***distance*** between ***two identical points*** on the wave (which comprises ***one complete wave cycle***). This is described with different terms of measurement, depending on the size of the wave.

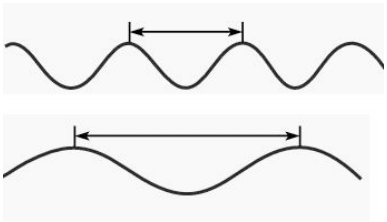
Amplitude is the point of ***maximum intensity*** of the ***signal*** (usually regarded as the highest point on the wave). It is comparable to turning up the volume on a radio.

Figure 1: Key EM Wave Definitions

The peak of the wave is the highest point on top. The trough of the wave is the lowest point on bottom. The length of a wave is often measured peak to peak. (See arrows in diagram below.) Technically, however, any portion of the wave can be used as a reference point, as long as the measurement addresses one complete cycle (peak to peak, trough to trough, etc.).

As the number of waves within a given space—in other words, their *frequency—increases* in number per second, their size becomes *smaller*. And as the number of waves *decreases* in number per second, their size becomes *larger*. Put another way, the higher the frequency (cycles per second or CPS) or oscillation rate of a wave, the smaller the wavelength. The lower the frequency (CPS) or oscillation rate of a wave, the larger the wavelength. "A homely comparison to visualize this," Kovács analogizes, "may be a motley army of giants and dwarfs, all under orders to reach the same goal simultaneously; in order to do so the giants step out leisurely, while the dwarfs run and take hundreds of steps for each one of the giants."[1]

In the example below, the frequency of the top wave is higher than the frequency of the bottom wave, because the distance is shorter between the peaks of the waves. The wave forms in this example are simple sine waves.



In order from slower-moving to faster-moving, frequencies in the EM spectrum include radio waves, microwaves, infrared light, visible light, ultraviolet light, X-rays, and gamma rays.

Electric Fields and Magnetic Fields

So far, I have been discussing electromagnetic radiation from the EM spectrum. Electromagnetic *radiation* (radiant energy) and electromagnetic *fields* (non-radiant spaces in which energy exists) operate somewhat differently. Both come from electromagnetic sources. However, energy that *radiates* exists separately from its source. It travels away from its source, and it continues to exist even if the source is turned off. EM *fields* are not projected out into space. They no longer exist when the energy source is turned off.

Static electricity and magnetism are both static fields that share a complex and intimate relationship with each other. An oscillating electric field generates an oscillating magnetic field, and an oscillating magnetic field generates an oscillating electric field. Each exists at right angles to the other. Most importantly, when *movement* is introduced to either a static electrical field or a magnetic field, they become *electromagnetic* fields. This will be important to remember when we later examine a number of different electromedical devices.

Sound

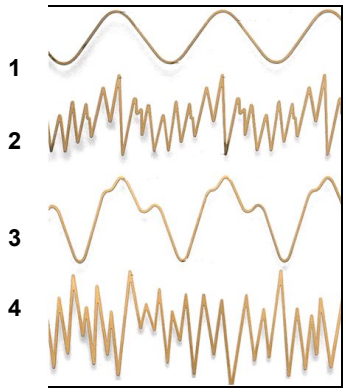
The EM spectrum is often compared to sound, since the two phenomena share many of the same features. Sound is comprised of mechanical pressure waves in a compressible medium such as air or water. Put another way, sound is created when an object moves with enough force to displace (compress) the surrounding air (or other medium capable of carrying these waves). We hear many of these waves (air currents) as audible frequencies (sound), because after the air reaches the ear, it minutely moves the eardrum—a delicate drum-like membrane—and sends the oscillations to the brain, where they are then decoded into the noise of traffic, spoken words, a barking dog, music. The waves of sound could be created by a pen dropping on a desk, someone's vocal cords being moved in speech, or a violin string being plucked.

The frequency of a wave (expressed as cycles per second) that applies to the EM spectrum also applies to music (a subset of sound). The pitch of a note depends on its cycles per second. A *lower frequency*, or an oscillation rate of *fewer* CPS, is *slower-moving* and produces a *lower tone*. A *higher frequency*, or an oscillation rate of *more* CPS, is *faster-moving* and produces a *higher tone*.

The feature of cycles per second can be more easily understood and perceived with music than with random sound (noise). Noise—as well as some harsh electronic music—is comprised of *disorganized waveforms*. This disorganization manifests acoustically as indistinct, muddy pitches. Music, on the other hand, is comprised of *organized waveforms*. This organization manifests acoustically as distinct, discernible pitches. The difference between music and noise can be seen on an oscilloscope—a testing device that shows visually what we hear acoustically—with real-time pictures of wave forms (Figure 2). Noise, or random sound, on the oscilloscope appears as irregular wave forms, while music or pure tones appear as regular wave forms. In Figure 2, in the examples of music, all the instruments are playing the same note.

The wave forms of *music* on an oscilloscope show organization, with obvious patterns.

The wave forms of *noise* on an oscilloscope show disorganization, with no discernable pattern.



Music – Symmetry

1. Tuning fork. Very pure sound; prongs vibrate regularly.

2. Violin. Bright sound, angular waveform. Same pitch as tuning fork: peaks of the waves are the same distance apart and pass at same rate as those produced by tuning fork.

3. Flute. Playing same note as first two. Purer sound than that of violin, so its waveform is more rounded.

Noise – Asymmetry

4. Cymbal. Irregular patterns and jagged, random waveforms, no discernible pitch. No regular pattern of peaks and troughs.

Photo courtesy of, and text adapted from, *Dorling Kindersley Encyclopedia UK.*

Figure 2: Comparing Music and Noise Wave Forms on an Oscilloscope

For most people, the acoustic and the visual correlate: music is more pleasing than noise to the ear, and regular waveforms are more pleasing than irregular waveforms to the eye.

Different Shapes of Waves

As illustrated in the diagram of notes played by various instruments, waveforms have different *shapes*. Figure 3 shows some common ones in their simplest form.

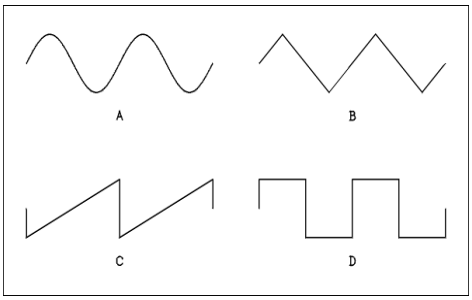


Figure 3: Wave Forms. (A) Sine; (B) Triangle; (C) Sawtooth; (D) Square

The more complex an object, the more frequencies it contains. Also, the more complex wave forms it will have. A useful analogy between simple and complex forms is the difference between plucking a single string (which represents a simple organism like an amoeba) and playing an entire orchestra (which represents a complex organism like a human being).

Symmetry and Asymmetry: The Language of Math and Music

The symmetry of music and the asymmetry of noise can also be described *mathematically*. Mathematically, sound is comprised of random frequencies that have *little or no relationship* to each other. Mathematically, tones or music are comprised of frequencies that *do* have relationships to each other. (A single, true tone will naturally be in symmetry with itself.) The absence of certain mathematical relationships in sound and the presence of those relationships in music explain why sound can irritate the nerves and music can calm them.

Although EM fields and sound transmit frequencies in different ways, the mathematical measurements representing the relationship between electromagnetic frequencies are the same for music. Put another way, the harmonic relationships of each system are governed by identical mathematics. The frequencies of musical tones and the EM spectrum exist in octaves, higher harmonics, and lower harmonics of each other. Thus, musical tones and EM spectrum frequencies have mathematical relationships to some of the other frequencies that are higher or lower. For example, a frequency that is multiplied or divided by two produces a higher or lower *octave* of itself.

As with sound, EM fields possess symmetry and asymmetry. Various electromedical devices can detect the equivalent of either noise or music in the oscillations of cells and tissues in the body. When the oscillations are not mathematically harmonious (which corresponds to noise), there is disease and degeneration. When the oscillations are mathematically harmonious (which corresponds to music), the cells function optimally and correctly.

Pulsed Magnetic Fields

There are many ways to induce an EM field. One way is with magnetism. Although magnetism per se exists in a static state, inducing movement in a magnetic field creates a corresponding movement in the electric field that naturally exists at right angles to it. The result is *electromagnetic* radiation. When this type of EM radiation is created from movement, it is commonly referred to as *pulsed*.

Pulsing a wave means that the signal is “on” for a brief period, then off, then on, then off, etc. Pulsing is independent of the frequency, which is equivalent to a note in music. The pulsing is like the rhythm. Carrying the analogy further, a wave taking up its full cycle of “space” is a whole note. A wave taking up only half of that cycle is a half note. A wave taking up only one quarter of that cycle is a quarter note, a wave taking up only one eighth of that cycle is an eighth note, and so on. Speaking musically, the “on, off, on, off” aspect of the wave could also be regarded as “note, rest, note, rest, etc.”

Many of the pulsed magnetic fields that are used in electromedical devices have a “rhythm” comparable to only an eighth note, because the wave is “on” for only a brief period. But that brief period is long enough to induce movement in the body. The movement of the EM radiation in the body translates into ion transport, increase in blood and lymph flow, and more. Any frequency can be pulsed.

In Figure 4, the bottom line shows a “lag time,” or interval

when the wave is at rest, before it resumes its upward-moving cycle.

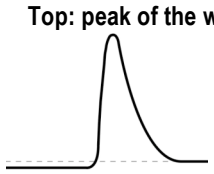


Figure 4: Wave Lag Time

Figure 5 shows two waves in succession. Here, the "lag time" or rest interval between the waves is easily seen. Note that there is no trough to the wave because it has been truncated.

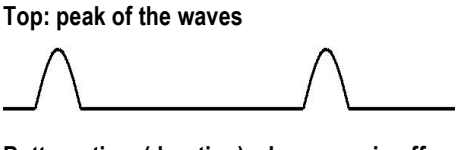


Figure 5: Two Waves

Pulsed electromagnetic radiation induces therapeutic results, which is why it is used. Some electromedical devices using pulsed EM fields will be discussed later.

The Electromagnetic Body

Energy in Living Systems

Electromagnetic waves can be used for diagnostic purposes because living organisms are energy-based. Historically, most cultures have erroneously regarded the body solely as a mechanical and biochemical organism. But every cell in the body is a transmitter and receiver of electromagnetic information. The following are examples of how human beings, animals, and plants contain and respond to EM fields:

- During migration, monarch butterflies, locusts, and even blindfolded birds navigate flawlessly. Salamanders and turtles also use magnetic fields to navigate. We now know that magnetite, a highly magnetic mineral, is found in the tissue and brains of insects, birds, reptiles, and amphibians.
- Bacteria use their magnetic sense to burrow deeper into the mud. We now know that magnetite is also present in bacteria and protozoa.
- Many kinds of fish are able to follow each other in organized formations ("schools") due to the magnetic fields generated by the magnetite in their bodies.
- The whiskers of dogs, cats, and other animals are now recognized to function as antennas, due to their sensitivity to electromagnetic fields.
- In plants, the sharp points of leaves, as well as pine needles and the blades of some species of grass, act like antennas for electrical signals.
- Melatonin, a hormone that (among other functions) helps induce sleep, is produced by the pineal only in darkness. We now know that the pineal gland, deep inside the brain in the skull, is exquisitely sensitive to light.
- Stingrays find food because they can detect normal, minute amounts of electrical discharge or magnetic fields emanating from their prey.
- Fish, dolphins, and whales use both the earth's magnetic fields and sonar (sound) for navigation and communication.
- The behavior of some animals has long been used to forecast earthquakes. Cattle stampede, birds sing at the wrong time of day, mother cats move their kittens, snakes seek shelter. B. Blake Levitt writes: "It is now thought that [the animals] are reacting to changes in the earth's magnetic field, as well as to electrostatic charges in the air—long before the quake actually occurs or registers on even the most sensitive instruments."[2]

In his article, "The Electrical Properties of Cancer Cells,"[3] medical doctor Steve Haltiwanger describes how the body partly functions as a living electrical circuit. Various cells and tissues are conductors (allow for electron flow), insulators (inhibit electron flow), semiconductors (allow for electron flow in only one direction), capacitors (accumulate and store charge, later to release that charge), and so on. Cells transmit and receive energy, and each has its very own frequency with which it oscillates. Since magnetic and electrical waves exist at right angles to each other, magnetic fields applied to the body also create biological changes. We now know that in humans, the sinuses, some other bones in the face, and various tissues in the body contain magnetite.

Not only is every cell in the body a transmitter and receiver of electromagnetic information, it is these various *electromagnetic frequencies that precede and correspond to biochemical functions*. For example, healthy cells oscillate at higher frequencies than do unhealthy cells like cancer. The lower frequency of cancer is

reflected by (and causes) the aberrant biochemical reactions within the cell. Put another way, the biochemical differences between normal healthy cells and cancer cells correspond to the differences in the electrical properties of each. The same holds true for magnetic fields. Magnetic fields correspond to biological activity. A change in the magnetic field means a change in the cells, either positive or negative.

Harmful Effects of EM Radiation and EM Fields

In the last century, medical doctor and stress pioneer Hans Selye observed that when bodily tissues are subjected to repeated, intense input—whether chemical (environmental pollutants, adrenal "fight-or-flight" hormones) or mechanical pressure (bruising)—the body perceives it as stress. It responds by tightening the envelope of membranous fascia that surrounds the muscles. This, in turn, causes significant biochemical malfunctions, not the least of which is the disruption of the cell membrane. Other stressors that can disrupt cell integrity include the actual puncturing of the cell membrane, and microbial infection. Cell permeability for the proper materials is key. If glucose, other nutrients, and beneficial hormones cannot efficiently enter the cell, and if wastes cannot completely exit, microbes can proliferate and degenerative disease can occur. To Selye's list of stressors, I would add destructive EM radiation and EM fields.

It has been known for decades that electrical fields can damage cells. B. Blake Levitt writes:

> Direct current (DC) is the steady flow of electrons in one direction. Alternating current (AC) is an electron flow that changes strength and alters direction within a certain cycle; the AC field collapses and reappears with its poles reversed every time the current changes direction....Direct current creates a steady magnetic field. But with alternating current, each time the direction of the electrons is reversed, or flipped, a powerful magnetic field is created that fluctuates at the same frequency.[4]

Another reason these fields are dangerous is that the waves are *coherent*. Although the sun constantly transmits naturally-occurring radio frequencies, microwaves and other EM fields, this radiation is generally *diffuse*, whereas alternating current is *concentrated. Concentrated radiation is not natural.* For example, you need to purposely harness, focus, augment, and direct a bombardment of electrons to turn on a light bulb. In *Electromagnetic Man: Health & Hazard in the Electrical Environment*, Cyril Smith and Simon Best write:

> It is just over 100 years since electricity generation started; 60 years since radio transmissions and 40 years since radar and telecommunications entered our environment. [The book was published in 1990.] Like natural fields, man-made fields are limited by the physical properties of the environment. Unlike natural fields, they are highly coherent and can interfere with our bio-signals.[5]

The harmful effects of some EM fields are many and varied. Jacqueline Krohn and colleagues explain that in the many studies

> …exposing cells and animals to ELF [extremely low frequency] fields…electric workers and their children have a higher risk of brain tumors. The incidence of childhood leukemia is higher in children who live near power lines that carry high voltage. Power-line exposure has also been associated with an increased incidence of suicide.
>
> These studies support the hypothesis that ELFs act as a cancer promoter. ELF fields interact with the cell membrane and can affect hormones, calcium exchange, and tissue growth. It is postulated that the ELFs suppress the production of melatonin, a cancer inhibitor, by the pineal gland.[6]

The effects of ELF fields is more than mere "postulation," as other researchers have corroborated. Smith and Best cite formal published studies linking the following maladies to extremely low frequency, electromagnetic fields:

- Allergies
- Autoimmune disorders, such as lupus erythematosus and multiple sclerosis
- Birth defects and genetic abnormalities
- Cancers of various types, including brain tumors and leukemia
- Emotion and mood changes, including higher percentages of suicides
- Eyestrain and headaches
- Fatigue and sleep disturbance

- Heart attacks
- Hormonal abnormalities
- Infectious disease increase
- Lowered fertility, miscarriages, and pregnancy problems, including stillborn children
- Nervous system disorders, including confusion, convulsions, dizziness, hyperactivity, and memory loss
- Stress increase and intolerance[7]

The harm from EM fields and EM radiation also depends on the proximity of the person, animal, or plant to the source of the energy. A milligauss is a unit of measurement of the strength of an electromagnetic field. According to tables from the Environmental Protection Agency reprinted in Levitt's book, a blender from six inches away emits between 30 and 100 milligauss; an electric can opener six inches away emits between 500 and 1500 milligauss; a hair dryer six inches away emits between one and 700 milligauss; and a ceiling fan 12 inches away emits between three and 50 milligauss.[8] Some sources maintain that even two milligauss is enough to disrupt a person's biological function and that the maximum emission a person can safely absorb is only one milligauss. This is why there is a high rate of illness among people living near major power lines, cell phone towers, electrical generators, and similar disruptors.

Healing Effects of EM Radiation and EM Fields

Considering the extent that artificially created, non-beneficial EM radiation surrounds us, it is not surprising that (aside from the contributing factors of poor diet, pathogens, and chemical pollutants) so many people are ill. The good news is, if frequencies can harm, they can also be used to heal. Cells have the ability to positively and healthfully respond to minute electromagnetic stimulus—as long as certain criteria are met. The stimulus must be from the correct region of the EM spectrum; it must further be refined (if necessary) to an exact frequency or combination of frequencies on that EM band; it must be the correct intensity; it must have the correct shape wave or wave packet; it must be administered in the correct amounts; and, of course, it must be accurately and precisely aimed at the target. In electronics, there is a term that refers to the transfer of energy from one component to another through a shared magnetic field: *inductive coupling*. In electromedicine, the response of living cells to beneficial EM radiation is also called inductive coupling. Once the EM fields inside a cell are exposed to EM radiation, the fields within the cell start to move. Along with this energetic process, the corresponding biochemical responses are activated, such as the movement of electrolytes through the cell membrane, excretion of wastes, and so on. Inductive coupling is being utilized in a growing number of extremely effective electromedical devices.

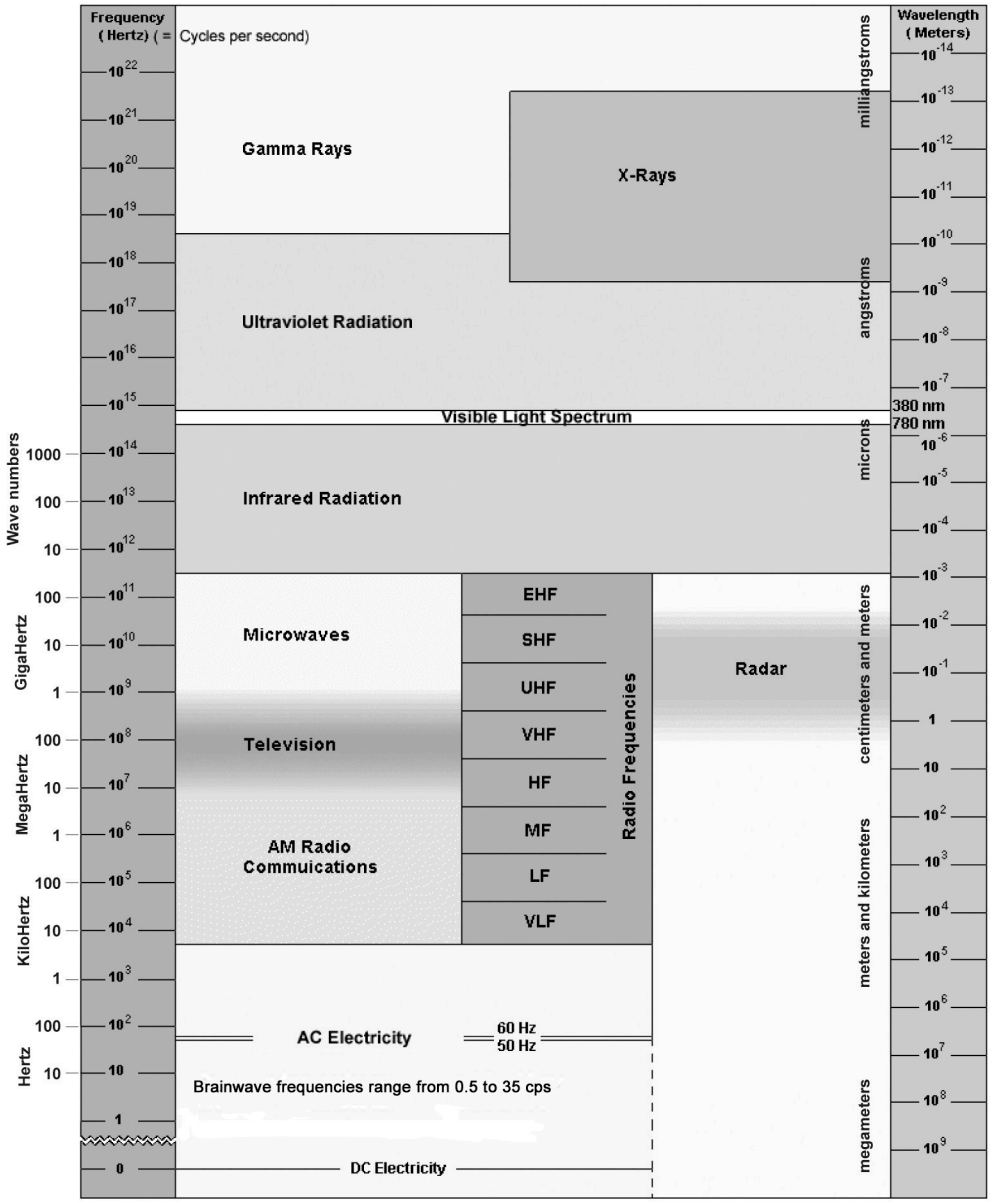
Researchers are discovering that many of the beneficial effects from electromedical devices come from *pulsed magnetic fields* (which by definition become electromagnetic radiation). Pulsing a magnetic field does more than induce movement in the body receiving the signal. Because pulsing by definition means that there is an "off" period to the signal, it ensures that the human or animal receiving the signal does not become resistant to its effects. A good analogy is someone tapping your arm. At first you pay attention; but after awhile, the body becomes impervious to the sensation so it can focus on other stimuli. This is one of the secrets of electromedicine devices that are effective.

Correctly employed, frequency therapies can increase cell energy, normalize membrane conductivity, lessen oxidative stress, reduce the amounts of inflammatory chemicals in the blood, improve protein synthesis, boost feel-good endorphin levels, restore depleted adrenal function, and enhance immune function. The restoration of these metabolic processes lead to the regeneration of tissue as well as resistance to disease.

"Bigger is better" and "More is better" figure prominently in the Western mindset. The unbridled use of massive doses of many different kinds of drugs and the routine practice of "prophylactic" invasive surgery illustrate this mentality. Another, more humane edict—"Less is more"—reflects what the body usually needs. The exquisite sensitivity of cells to electromagnetic fields of all kinds explains why electromedical devices work—and why the most subtle ones work the best. By "subtle," I mean those energies that subjectively might not be easily perceived, but which are the most compatible with living systems precisely because they are of lower power.

Electromedicine therapies may use many portions of the EM spectrum: electrical current, magnetism, visible light, far infrared (FIR), ultraviolet (UV), and heat in the form of specific FIR wavelengths. In Part Two of this article, I will discuss some therapies that use various EM wavelengths. Then I will explain sound as it relates to the EM spectrum, and explore one use of sound for therapeutic purposes.

The Electromagnetic Spectrum



From *The Holistic Handbook of Sauna Therapy* by Nenah Sylver, PhD.

Notes

1. Kovács R. *Electrotherapy and Light Therapy with Essentials of Hydrotherapy and Mechanotherapy*. Philadelphia: Lea & Febiger; 1949: 310-311.

2. Levitt B. *Electromagnetic Fields: A Consumer's Guide to the Issues and How to Protect Ourselves.* San Diego: Harcourt Brace & Company; 1995: 72-73.

3. Haltiwanger S. The electrical properties of cancer cells. Available at: www.royalrife.com/haltiwanger1.pdf. April 2, 2006.

4. Levitt B. op cit: 47-48.

5. Smith CW, Best S. *Electromagnetic Man: Health & Hazard in the Electrical Environment.* London, England: J.M. Dent and Sons Ltd.; 1990: 45.

6. Krohn JF, Taylor A, Prosser J. *The Whole Way to Natural Detoxification: The Complete Guide to Clearing Your Body of Toxins*. Point Roberts, Washington: Hartley & Marks Publishers, Inc.; 1996: 85.

7. Smith CW, Best S. op cit.

8. Levitt, B. op cit: 254-258.

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Nenah Sylver, PhD, is an internationally published author in the fields of holistic health, electromedicine, and psychology. She gives educational seminars on electromedicine and frequency healing, and has been a featured speaker at Rife conferences. Portions of this article were excerpted from her two most recent books, *The Handbook of Rife Frequency Healing* and *The Holistic Handbook of Sauna Therapy* (both reviewed in past issues of *Townsend Letter*).

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