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An Introduction to Energy Medicine

The Study of Energy in Living Organisms is Redefining the Medicine of the Future

Written by Carolyn Waygood, ND, CNHP, Board Certified Doctor of Naturopathy

Abstract: This presentation provides an introduction to energy, definitions of basic terms, a fundamental scientific explanation of energy medicine, and discusses how energy in the human body may be used to achieve greater health, or effect dis-ease.

A Primer on Energy

Before diving into the topic of Energy Medicine and how it relates to the human body, it is important to become familiar with some basic “energy terms”. Although it is NOT imperative that you clearly understand the information provided in the next few paragraphs in order to grasp the efficacy of energy medicine, it may help you to better understand it. Let’s begin with a discussion of *energy*. There are many forms of *energy*, and energy can shift between forms, but it is never destroyed. These premises are called the *First Law of Thermodynamics*. Energy is just “there” – like taxes – and its existence is permanent.

The fact that energy can change forms is of great benefit to us. For energy to become *electricity*, it may undergo many transformations before it can power the light bulb in your home. A car transforms the *potential energy* trapped in gasoline into various types of energy such as heat and mechanical movement. Coal and natural gas power plants use the chemical potential energy trapped in fossil fuels to create heat and electricity. Wind turbines change the energy of wind into electrical energy. So you see, all that energy was “there” – present, for example, in gasoline - waiting to be converted and used.

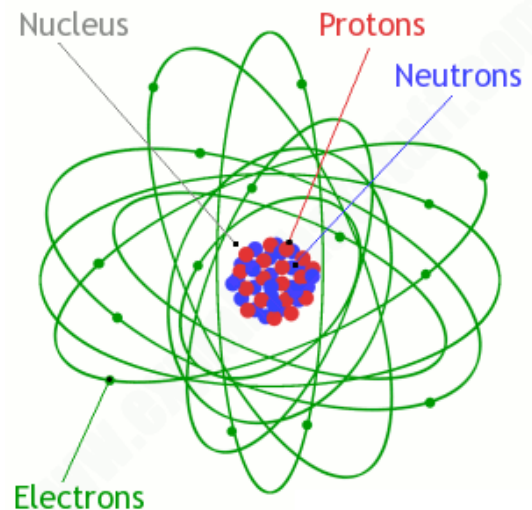
Two Classifications of Energy

Although there are many specific *types* of energy, the two major *categories* of energy are *Potential Energy* and *Kinetic Energy*.

Potential Energy is any type of stored energy. It can be chemical, nuclear, gravitational, or mechanical. An airplane sitting on a runway, a car parked in your garage, gasoline held in the gas tank, or a coiled spring such as a slinky all have *potential energy* because if started, moved, or uncoiled – they will produce energy. But the energy produced by these

stationary things – the *movement* produced by activating potential energy – is called *kinetic energy*.

Kinetic Energy is found in movement. An airplane flying or a car moving along the highway each have *kinetic energy*. Even the tiniest things have kinetic energy, like atoms vibrating when they are hot. Energy falls into the category of “Kinetic Energy” by virtue of it being in motion, so you can think of kinetic energy as being the *energy of motion*. There are many forms of kinetic energy - *vibrational* (the energy due to vibrational motion such as when a string is plucked on a guitar), *rotational* (the energy due to rotational motion such as a spinning top), and *translational* (the energy due to motion from one location to another such as a car moving from point A to point B). Since we’ll be discussing a form of energy called “Electricity” in this paper, it’s important to note here that *electricity* is *kinetic energy* (it moves) measured by the flow or movement of electrons between atoms.



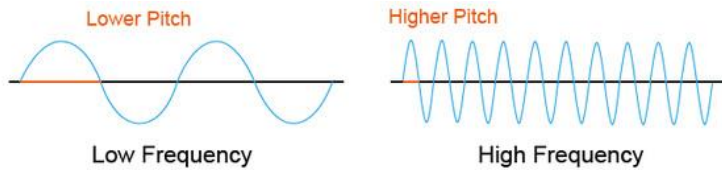
Take note that all things (a.k.a. “matter”) is made up of atoms, and atoms are made up of smaller particles, called protons (which have a positive charge), neutrons (which have a neutral charge), and electrons (which are negatively charged).

Electrons orbit around the center, or nucleus, of atoms, just like the moon orbits the earth. Some material, particularly metals, have certain electrons that are only loosely attached to their atoms. They can easily be made to move from one atom to another. When those electrons move among the atoms of matter, a current of electricity is created, sort of like the wake of a boat moving through the water. When electrons pass from atom to atom, they create an *electrical current* in the form of a “wave”.

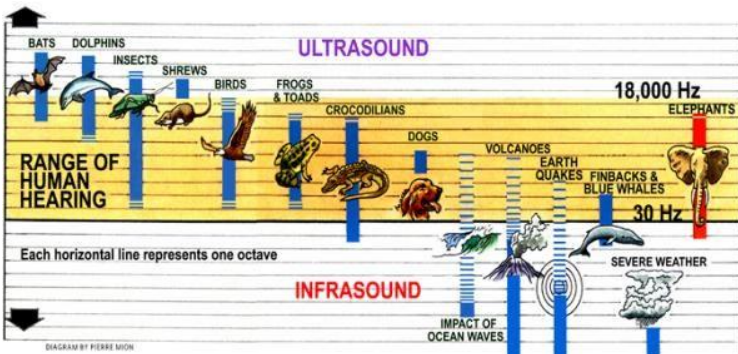
Many Forms of Energy

There are many forms of both potential energy (e.g., gravitational, chemical, and nuclear), and kinetic energy (e.g., motion, thermal, sound, and electric). Some of these forms of energy are described below.

Sound - Sound energy is made when stuff *vibrates* – like strings on an instrument. Like the movement of electrons and electricity, sound moves through space in waves. Sound is generated simply by the movement of air. A whistle is a perfect example of sound energy – the act of pushing air through pursed lips, and having it vibrate against the skin. Sounds have different frequencies and wavelengths that determine the pitch of the sound. Notice the difference in the “waves” below, based on their frequencies.



A healthy young person hears all sound frequencies from 20 Hz to 20,000 Hz (or 20 kHz). This is called the human audible range of frequencies, or *Audio Spectrum*. Below 20 Hz is referred to as *Infrasound*, and is outside the range of human hearing. Frequencies above 20 kHz is referred to as *Ultrasonic sound*, and is also outside normal human hearing. An important note to make is that just because humans can't hear a sound, doesn't mean the sound doesn't exist.

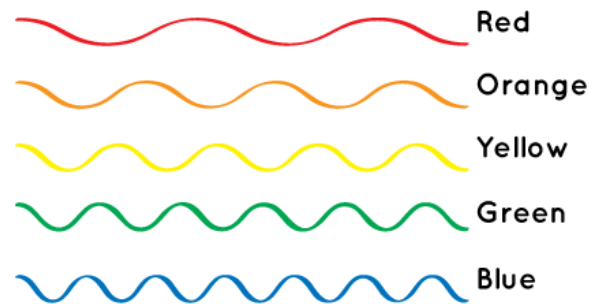


Chemical - Chemical energy is stored in the bonds between the atoms in chemical compounds, such as water (H₂O = hydrogen molecules bonded to oxygen molecules) and table sugar (sucrose) which is made of carbon, hydrogen and oxygen (C₁₂H₂₂O₁₁). This stored energy is transformed when bonds are broken by chemical reactions. Like letters of the alphabet that can be rearranged to form new words, atoms move around during chemical reactions, and they form new compounds with different properties. When we burn sugar in our bodies, the elements are reorganized into “glucose” – a chemical form of energy - which is then used by our bodies to power cells, muscles, organs, and more.

Electricity - Electric energy, as mentioned before, is the energy of moving electrons, the negatively-charged particles in atoms. Electrons can move from one atom to another which creates a “wave” of electricity, called the *electrical current*. Lightening is a strong example of electrical energy.

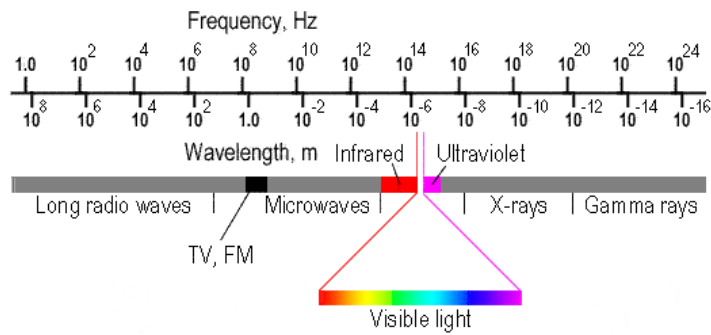
Light – The light from the sun is also energy, as is light from a light bulb, or light from a flashlight. This form of energy is made up of little packets of energy called *photons*. The word "photon" is derived from the word "photo", which means "light". (A photon is the small particles of light, like an atom is the small particles that make up chemicals.) Light also moves through space in *waves*, at a very high rate of speed called “the speed of light” (nearly 1 billion feet per second). Similar to sound, each photon has a specific frequency and wavelength. The frequency and wavelength determines the color of the light, whereas the frequency and wavelength of sound determines the pitch. Notice the difference in the light “waves” below, based on their color.

Visible Light



Earth's most important energy source is the Sun. Sunlight consists of the entire electromagnetic spectrum. The human eye can only see a small fraction of the total light spectrum from violet to red. This "Visible Light" corresponds to a wavelength range of 400 - 700 nanometers (nm). Like the Audible Spectrum of sound, the human eye is not capable of "seeing" light with wavelengths outside the visible light

spectrum – but, again, that doesn't mean it doesn't exist. Even though we can't see it, this light exists.



The lower the energy, the longer the wavelength and lower the frequency – with red having the longest wavelength and violet having the shortest. The reason that sunlight can hurt your skin or your eyes is because it contains "ultraviolet light", which consists of high energy photons. These photons have short wavelength and high frequency, and pack enough energy in each photon to cause physical damage to your skin if they get past the outer layer of skin or the lens in your eye.

Electromagnetic Energy - Electromagnetic energy is the same as light energy – but you can't always see it. Even though radio waves transmit sound, they are a completely different kind of energy, called *electromagnetic energy*. This type of energy can take the form of visible light, like the light from a candle or a light bulb, or invisible waves, like radio waves, microwaves, x-rays and gamma rays. Sometimes physicists refer to electromagnetic radiation as being exposed to tiny packets of light energy called photons. Since each photon has a characteristic frequency, wavelength, and energy level, exposure to electromagnetic energy can have different effects on the human body.

Heat – This type of energy is measured by temperature. Heat energy is created when tiny atoms within a substance vibrate. We can't see individual atoms vibrating, but we can feel the energy their vibration creates as a rise in temperature. This is sometimes called thermal energy. Consider boiling a hot cup of coffee or tea. As the coffee is heated, "thermal energy" or "heat energy" is generated by the vibration of the molecules in the coffee. As the molecules heat up – their vibratory rate increases, and when it cools down, their vibration slows down.

So we all can agree – **Energy** is everywhere, in many different forms, made up of tiny particles called **atoms** (or **photons**, in the case of light) that **vibrate** at different rates or **frequencies**, and travel through space along paths called **waves**. These are just a few of the terms we use when describing **energy**. What's interesting is that we know so much about all these different

forms of energy, from chemical to electromagnetic, but we know very little about our own *Human Energy*! Let's take a look at the human body, and the role energy plays there.

The Human Body, Matter, and Energy

Some people, like orthopedic doctors, look at the human body as a network of bones & joints, attached by muscles, tendons, and ligaments. An Endocrinologist sees the human body as a network of glands and organs carrying out specific functions, such as the pancreas, lungs, and liver. A Cardiologist sees the body as a complex network of arteries and veins connected to the heart, and the smaller blood vessels that connect arteries to veins called capillaries. A nutritionist might look at the body as a balance of carbohydrates, fats and proteins, together with the right amount of chemical compounds such as calcium, potassium, sodium, and phosphorous. But when you get down to the substance of the human body – *the matter* – we're all made up of tissues, comprised of cells, composed of microscopic organelles made up of atoms.

Atoms are the basic units of matter and the defining structure of, well, EVERYTHING! At one time, the atom was the smallest particle known to man. However, recent science has proven there are smaller particles (we call these "sub-atomic" particles) that make up the atom. As mentioned earlier, atoms are made up of 3 smaller particles called protons, neutrons and electrons. Protons and neutrons are heavier than electrons and reside in the center of the atom within the nucleus, while the smaller, lighter, and more mobile electrons are found in the orbitals surrounding the nucleus.

We talked about atoms when discussing energy earlier, and specifically the activity or vibration of atoms, and their subatomic particles. The vibration of each atom is a representation of kinetic energy, since the atom is in motion (it's vibrating). As we discuss the human body, and the atomic and sub-atomic particles that comprise our human "matter", we must remain aware that these atoms are also in a constant state of motion. Each cell is vibrating at a specific frequency (or rate). The *Law of Nature* states that *everything* has a vibration, and science has proven that healthy cells vibrate within narrow ranges called their "natural or resonant frequency". When healthy, each cell of our body vibrates at the frequency it was designed to.

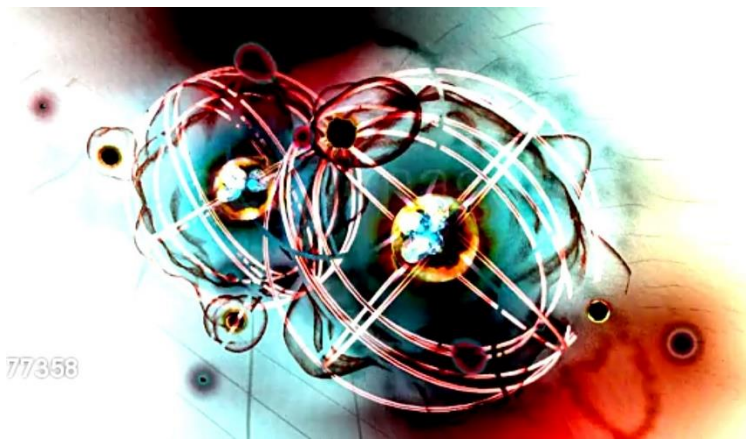
Are you beginning to see the link between the human body and energy, vibration, and frequency? At this point, we should agree that we're talking about VERY small things (*sub-atomic particles*) that make up the human body, that *vibrate* at very

specific *frequencies*. These premises lay the foundation of Energy Medicine.

Looking Beyond Atoms to Energy

Most of us are comfortable looking at something in 1 or 2 dimensional pictures like a linear chart, or a photograph of a friend. But the world around us is really 3-dimensional, and it is often difficult to think in a 3-dimensional way.

The way we look at something is important. Medicine has always looked at the human body as matter; bones, muscles, organs, and the smaller cells that make up these parts of the body. However, modern science is now enabling the medical community to see there's more to the human body than just atoms and sub-atomic particles. Using highly sensitive, state-of-the-art instruments, we can now see and measure the ENERGY that ties all matter together!



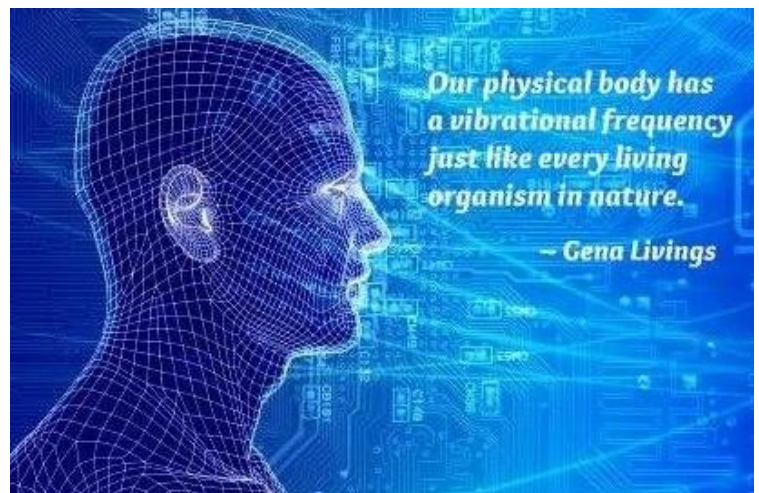
If I could show you the 3-dimensional image of an oxygen atom above, you'd see a very active sphere twisting and turning in space, with tiny particles revolving around its center in all sorts of different directions and at different speeds – causing sparks of light flashing about that the naked eye can't see, and generating sound at levels our ears can't hear. There would be so much energy being conducted throughout this tiny molecule that our primitive senses (sight and sound) wouldn't be able to distinguish. Now imagine every atom of every cell inside you dancing a similar sub-atomic waltz. This is the energy that's inside of you!

Here's where our discussion starts to get mind-blowing, so I don't want to lose you. It's at this stage of our discussion where it becomes important to note that different types of cells in our bodies, from cardiac cells to bladder cells, have different natural frequencies, which means they vibrate at different rates. Science has also demonstrated that when a cell is unhealthy, its natural vibratory rate, or frequency, is altered. Research has also shown us that frequencies external to our

cells can either positively or negatively impact the natural or resonant frequencies of our cells. Here are a few examples of how energetic frequencies can impact the human body.

- Helicopter pilots in Vietnam reported difficulties and had accidents when a certain rotor speed caused vibrations in the aircraft that coincided with the resonant frequency of a part of the human eye.
- In the late 50s and early 60s, the US Army did research on using frequencies as a tactical weapon - for example inducing diarrhea as a way of demoralizing enemy troops.
- There is a low frequency sound, the *frequency response of the bladder*, which can cause people to feel the need to urinate.
- The Soviets have been using energetic frequencies, called the "Moscow Signal", since before the Cold War (circa 1952), aimed at the U.S. Embassy, to cause adverse health effects in Americans employed there. In 1976, the *Globe* reported on it, resulting in the U.S. State Department allocating a 20% "hardship allowance" for serving in an "unhealthful post".
- More recently (late 2016), an "Acoustic Attack" using sonic devices operating outside the range of audible sound in Havana, Cuba caused many U.S. State Department employees to suffer a variety of physical symptoms which resembled concussions.

The existence of human energy is not a new discovery – although, today, we are just able to measure and quantify it through state-of-the-art devices. And since we live in a world where "Seeing is Believing", both science and medicine are just now beginning to believe and understand the impact energy has on human health, and disease.



Traditional Chinese Medicine seems to be the first people who really understood the energy flow within the human body, and mapped it using a pathway of meridians. The Chinese referred

to human energy as Qi (pronounced *chee*), and somehow determined that our energy flows through this meridian or energy highway, accessing all parts of the body. Acupuncturists have identified many points along these meridian paths where our energy often becomes blocked, leading to ill health. Using needles to stimulate these points, our energy can be “unblocked” to flow freely which restores health. Although this practice is thousands of years old, today’s highly sensitive equipment is now proving these theories are in fact true!

Since the ancient Chinese times, others have developed healing modalities focused on healthy energy flow as well, including modalities such as Tai Chi, Qi Gong, and even massage. All have one thing in common: they focus on restoring optimal energy flow throughout the body in order to support the body’s natural healing capabilities. It is here, thousands of years ago, when Energy Medicine began to take form, and led to many healing therapies based on correcting “blocked” or “distorted” human energy.

Before we move forward, these are the facts you should keep in mind;

- *Energy* is everywhere, in many different forms, made up of tiny particles called *atoms* (or *photons*, in the case of light).
- All energy (atoms & photons) *vibrate* at different rates or *frequencies*, and travel through space along paths called *waves*.
- Every atom of every cell inside you has energy, and these cells vibrate at a *natural resonant frequency*.
- External sources of energy, including light, sound, and electromagnetic energy, can affect the resonant frequency of the human body’s cells either in a positive (healthy) way, or a negative (harmful) way.
- *Energy therapies* focus on supporting the optimal flow of human energy throughout the body, and correcting disturbed or “distorted” energy frequencies.
- Extremely sensitive instruments now exist that can detect and measure energetic frequencies throughout the human body, and have validated 1) the existence of human energy, 2) the natural resonant frequencies of different cells, and 3) how external energy can affect the human body.

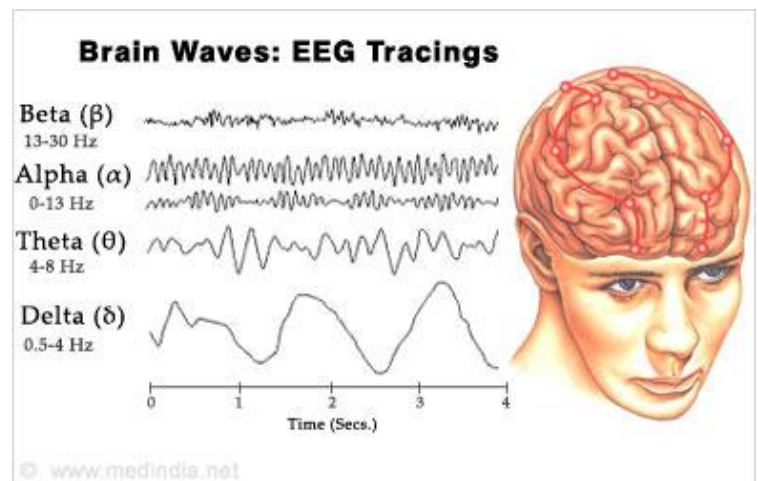
Today’s Energy Medicine

Today’s specialized equipment confirms the existence of human energy, and both the fields of medicine and science are exploring and tapping into the influence energy has on the human body. You may be familiar with an *electrocardiogram* (EKG) - a test that checks for problems with the electrical activity of your heart. An EKG shows the heart's electrical energy activity through lines on paper with spikes and dips called waves. These waveform components indicate electrical events during a single heartbeat.



To determine the frequency at which a heart is operating, you do some math. *Frequency* is denoted as the number of times a regularly recurring phenomenon occurs in one second. Therefore, the number of times a heart beats in one minute divided by 60 seconds equals the frequency of your heart in Hertz (Hz). For example, a healthy adult heart beats about 70 times per minute, divided by 60 implies the heart is operating at 1.16 Hertz.

An electroencephalogram (EEG) is a medical test used to evaluate the electrical activity in the brain. An EEG tracks and records brain wave patterns. We now know that brain cells communicate with each other through electrical impulses, and that there are 5 different frequency ranges of brainwaves called *Beta*, *Alpha*, *Theta*, *Delta* and *Gamma*. Energy is constantly in motion in the brain, even as we sleep, and the brain is consistently producing energetic “waves” in all sorts of frequencies.



Waves within particular ranges of frequencies, like “alpha” or “beta” waves, have various types of biological significance. *Beta* waves, for example, are associated to alertness, focus and have frequencies ranging in higher cycles per second (e.g., 14–28 cycles per second). *Alpha* waves occur when someone is calm and relaxed, and the frequency slows down to about 7–13 pulses per second. *Theta* waves represent a state of very deep relaxation. This is the state used in hypnosis and dreaming, where waves cycle between 4–7 cycles per second. And finally, *Delta* waves occur when you are in a deep sleep, and slow to a frequency of zero to four cycles per second.

It seems at our peak focus and mental capabilities, our brains might hover in the 25–30 Hz range, but in the evening it slows down into light relaxation (10–12 Hz), deep relaxation (6–10 Hz), light sleep (4–6 Hz), and subsequently deep sleep (0.5–4 Hz). The knowledge of brain waves and their relation to sleep has enabled professionals to accurately diagnose *Sleep Apnea*, a potentially serious sleep disorder in which breathing repeatedly stops and starts during sleep. Another specialized piece of equipment called a *Polysomnogram* (PSG) records brain activity, eye movements, heart rate, and blood pressure, as well as the amount of oxygen in your blood, air movement through your nose while you breathe, snoring, and chest movements. A dysfunction in any of these markers can indicate a disturbance in sleep patterns.

As you can see from the three simple examples above, medicine has acknowledged and has been utilizing human energy data to help diagnose and monitor the human body and our health for decades. However, it is only recently that medicine has moved beyond looking at the energy of the heart and brain. Today, we are finding a wider variety of energy medicine applications in the areas of mental health, bone and wound healing, and even professional sports! NFL teams including the Oakland Raiders and San Francisco 49er’s utilize energetic frequencies to help rehabilitate injured players. The application of specific energetic frequencies made it possible for Terrell Owens, a wide receiver for the Philadelphia Eagles, to recover from surgery and heal torn ankle ligaments and a fibular fracture in six weeks instead of the standard 18 weeks so he could play in the Super Bowl. Both Lance Armstrong (cycling) and Tiger Woods (golf) have turned to energy medicine to recover from injuries, and perform at optimal levels.

The Effects of Frequencies

Energy medicine uses energetic frequencies to successfully modify the structure and function of biological tissue. As of now, the precise mechanisms involved in the beneficial results

of specific frequencies are only partially understood, although research strongly suggests that at least one of the main effects is to stimulate cellular production of ATP, the form of energy used by human cells. The additional supply of electrons that stimulates the production of ATP which is then provided to damaged or dysfunctional tissues may, it seems, stimulate the local healing processes, encouraging tissue regeneration, reducing excessive inflammation and pain, and so enhancing repair.

Other theories regarding the effects of energy medicine focus on the laws of *resonance* or *entrainment*. Just as great music can resonate in your soul, so can oscillating electrical fields resonate deeply into your physiology, biochemistry, and effect your health. And, as with music, it is not the strength of the signal that counts, it is its *frequency*. When there are two tuned violins in the same room and you bow the G string on one of them, the G string on the other violin will begin to vibrate on the other side of the room. The vibrations from the first string travel through the air and resonate with the other G string causing it to vibrate. Using the science of resonance, energy frequencies can stimulate specific cells to vibrate restoring them to their own healthy, natural resonant frequency.

When working with energy medicine, it is important to keep in mind that CURRENT impacts the production of cellular ATP and imparts changes in cell membrane function. On the other hand, it is the FREQUENCY that resonates with certain pathologies and imparts changes in tissues. Think of scar tissue like a crystal glass, where scar tissue is a structure made of collagen that is wound up and twisted with tight bonds keeping tissue shortened and unpliant. These bonds impede the normal range of motion, and pull on surrounding nerves to create pain. When the right frequency is applied, the bonds that hold scar tissue together soften and dissolve, allowing the tissue to relax and lengthen. Like the opera singer who can break a crystal glass, the right frequency can break apart the scar tissue by “shattering” the collagen bonds holding it together.

Similar to scar tissue, there are different frequencies that resonate with different tissues, such as the spinal cord, tendons, and bones. Think of a key fob that opens your car where its frequency is set to resonate with your car only. In a crowded parking lot, your remote key will only open *your* car door.

Using this information, we can then apply the “right frequency” to the disturbed energy associated to the condition being addressed, and let the frequencies repair the disturbance. It may sound pretty basic, but when you consider there are

hundreds, if not thousands of different frequencies flowing through our bodies, the “proper formulation” of the frequencies being applied is very scientific. For example, we know that the frequency 40 Hertz (Hz) reduces inflammation, 30 Hz seems to reduce general pain, and 58 Hz reduces scar tissue. We also know that the frequency 39 Hz resonates with bone tissue, 62 Hz seems to resonate with muscle tissue (*belly* or center of), and 191 Hz resonates with tendons. Energy medicine principles then assume if we apply the frequencies to reduce inflammation (40 Hz) and relieve general pain (30 Hz) to a sore and inflamed tendon (191 Hz), the frequencies can correct the energy disturbance and resolve the problems. Clinical studies have proven this is the case!

Some may wonder why energy medicine principles work “best” on some and not on others. Some people may feel the beneficial effects of energetic frequencies almost immediately, while others do not. It is important to note that blood, water, collagen and lymph all aid in the normal conduction of our electrical current, while inflammation, muscle mass, adipose (fat) and scar tissue, and improper hydration impede electrical conductance throughout the body. It is often the case that a person who is not properly hydrated will not benefit from the healing effects of energetic therapies. This is why EMRO Quantum Retailers should always emphasize the importance of drinking plenty of fresh water before and after application of energy medicine discs.

An Energy Medicine Revolution

Today, a new science is transforming medicine and revolutionizing the way we address disease. *Bioenergetics* is a field of biochemistry that works to understand energy flow through living systems. This is an active area of biological research that involves energy transfer and conversion within the human body, and how disturbances in this energy flow is linked to health disorders. This field is truly where the best of science comes together; Biology, Chemistry, and Physics!

Those in Bioenergetics believe that disturbances in human energy, whether it be distortions in energy frequencies, or blockages in energy flow, are the root cause of all illnesses. Many believe that conventional medicine often addresses symptoms instead of getting to the cause of the problem and promoting complete healing. Bioenergetics is based on the theory that by correcting energy disturbances – basically re-harmonizing our inner energy frequencies – we can support the body in its natural healing activities. Whether this be through the greater production of ATP, or the vibrational stimulation of resonant frequencies (or both), the specific way energy medicine benefits the human body is yet to be proven.

What we do know is that researchers have now been able to detect and measure body frequencies, and some of those findings are provided in scientific and medical publications. We now know what frequency range our brain works within, and the frequencies of our organs, and even the frequencies of certain pathogens, such as Lyme’s Disease and Malaria. With this knowledge, we can not only restore healthy frequencies to the body, we can also identify harmful pathogens that may be lurking within us. As mentioned earlier, we also have the knowledge and capability to introduce undesirable frequencies to the body that can cause health disorders. The medical application of bioenergetics is just beginning!

Dr. Carolyn McMakin points out in her book entitled *Frequency Specific Microcurrent in Pain Management* that “There are controlled trials planned in medical facilities to study the effects of FSM [*frequency specific microcurrent*] in the treatment of diabetic wounds and peripheral neuropathies, oral and genital herpes, shingles and in postoperative wound healing and pain control and in dental applications including orthodontics, periodontics and post-operative healing. There doesn’t seem to be any end in sight for what can be accomplished by resonance...”.

EMRO Quantum is on the leading edge of this Energy Medicine Revolution, and offers a set of products that address some of our more common health issues such as;

- Improved **Sleep** – for those that don’t have deep uninterrupted sleep,
- Relief from **allergy** symptoms – for those who struggle with sinus issues, sneezing, and watery eyes,
- Relief from muscle and joint **pain** – for those who suffer from periodic or chronic pain,
- Improved **energy** – for those who are tired throughout the day,
- **Back Pain** Relief – which is formulated to address lower back pain,
- Improved **Circulation** – for those who don’t have optimal blood flow,
- Improved **Immunity** – to help support the body’s natural immune defenses,
- **Stress** Relief – for those who feel stressed and anxious, and
- **EMF Defense** – to help defend yourself from electromagnetic frequencies emitted from electrical equipment such as cell phones.



Each energy disc is imprinted with a variety of energy frequencies specifically chosen to address the health issue it was designed to relieve or support. Each disc;

- is especially formulated to address one or more energy disturbances,
- provides immediate & rapid energy assistance,
- is Non Transdermal – meaning there's No drugs or chemicals (nothing enters the body),
- can be used with any other medications (but care should be taken when using topical creams which may affect the adhesion of the discs),
- can be combined with other Quantum discs (for example, Quantum CIRCULATION may be applied over Quantum PAIN for greater relief),
- are clinically tested and proven to be 100% safe for men, women and children, and
- lasts approximately 5 days (the *Cell Phone Defense* disc will last between 1-2 months depending on use).

As the EMRO Quantum catalog of products, and the health challenges they are formulated to address, expands, more and more people will experience the positive effects of healthy resonant frequencies. Although medicine is still primarily driven by prescription medication, there's encouraging signs that the tide is beginning to turn, and the idea of changing and supporting cells at their energetic level is growing. As James Oschman, PhD. A cellular biologist and physiologist with impeccable credentials, notes in his book entitled *Energy Medicine: The Scientific Basis*, "We now know that many of the most common health disorders and diseases are partly or entirely energetic in nature and are therefore difficult to prevent or treat when energy is left out of the equations of life and healing." He reminds us that "skepticism or not, energy medicine is here to stay and is a key part of the medicine of the future".

Prepare yourself for an interesting and enjoyable journey!



DEFINITIONS

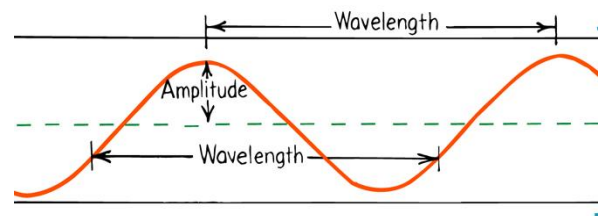
Amplitude: The amplitude of a wave is the distance from the center line of the wave to the top of a crest. Think of a mountain, where the taller the mountain the higher the altitude. With electrical waves, the taller the wave, the higher

(greater) the amplitude. Larger amplitude waves have more energy than smaller waves. Therefore, the greater the amplitude of a wave the more energy it is carrying, or the more electrons are flowing.

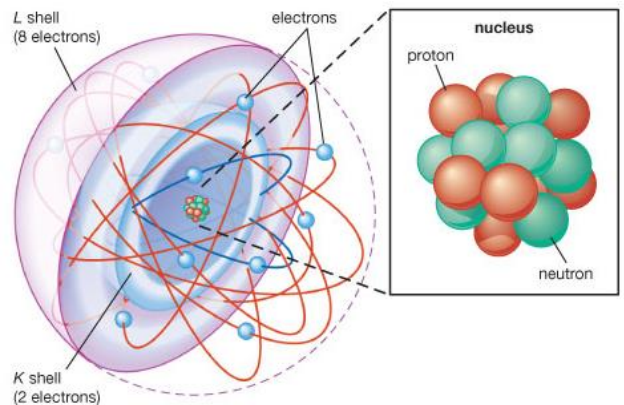
Atom: the basic unit of a chemical element. An element, such as water, is made up of multiple atoms. The chemical formula for water is H₂O which means that every molecule of water has 2 atoms of hydrogen (H) and one atom of oxygen (O).

Bioenergetics: the study of the transformation of energy in living organisms. The biology of energy transformations and energy exchanges within and between living things and their environments. A system of physical and psychological therapy that is held to increase well-being by releasing blocked physical and psychic energy.

Current: Current is created by the movement of electrons from one point to another, or "the flow of charge". As electrons move, they do so in a *wave-like* fashion. Thus the *current* that the movement of electrons create is seen as a wave, sort of like a wake of a boat as it moves through the water. An electrical current is often compared to the flow of water, where both travel in *waves*.



Electron: An electron is a tiny sub-atomic particle (part of an atom) that has a negative charge, whereas a Proton has a positive charge (a neutron is neutral and possess neither a positive nor a negative charge). Electrons circle around (or "orbit") the positively charged nucleus of an atom.

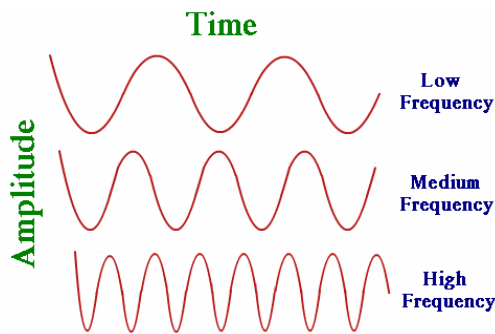


Energy Medicine: Energy Medicine recognizes energy as a vital, living, moving force that directly impacts a humans' health and

happiness. Energy Medicine utilizes techniques from time-honored traditions such as acupuncture, yoga, kinesiology, and qi gong to help facilitate the natural flow, balance, and energy frequency harmonics non-invasively within the human energy system.

First Law of Thermodynamics: The total energy of an isolated system is *constant*; energy can be transformed from one form to another, but can be neither created nor destroyed.

Frequency: The frequency of a wave is the number of waves passing a specific point in a certain amount of time. We normally use a time of *one second*, so this gives frequency the unit of *hertz (Hz)*, since *1 hertz is equal to one wave per second*. However, since radio and TV waves have such a high frequency, we use *kilohertz (kHz)* where 1 kHz = 1,000 Hz) or even *megahertz (MHz)* where 1 MHz = 1,000,000 Hz) to describe these. Think of *frequency* as being the number of pulses (peaks of the wave) per second.



Frequency is where the magic happens in energy medicine, because it is the frequency that creates tissue changes by the impact of resonance.

Hertz: The unit used to measure the frequency of vibrations and waves, such as sound waves and electromagnetic waves. One hertz is equal to one cycle per second. The hertz is named after German physicist Heinrich Hertz (1857-1894).

Kinetic Energy: energy in motion.

Law of Vibration: Anything that exists in our universe, whether seen or unseen, broken down into and analyzed in its purest and most basic form, consists of pure energy or light which resonates and exists as a vibratory frequency or pattern.

Matter: a physical substance in general, as distinct from mind and spirit; (in physics) that which occupies space and possesses mass.

Potential Energy: Energy at rest. The energy an object has because of its existence or position, rather than its motion.

Resistance: As electrons move through space producing a current, there may be inhibiting factors that impede their flow or movement. This inhibitory effect is called *resistance*. Think of a boat moving against a strong tide coming in the opposite direction. This causes resistance.

Resonance is the tendency of a system to oscillate (vibrate) at larger amplitudes in response to being subjected to specific frequencies. Since every chemical bond has a resonant frequency, “amplifying” that frequency to cause a greater vibration can cause the bond to break apart. This is how an acoustic note sung by an opera singer can shatter lead crystal.

Voltage: Voltage is the amount of pressure behind the flow of electrons that is “pushing” them through space. This pressure is measured in “Volts”.

Wavelength: The wavelength of a wave is the distance from any point on one wave to the same point on the next wave along. To avoid confusion, it is best to measure wavelength from the top of a crest to the top of the next crest.

