

PEMFs

What is an electromagnetic field, and what are PEMFs?

All energy is electromagnetic in nature, and nothing happens in the body without an electro-magnetic exchange between cells. We are all familiar with ECG (electro-cardiograph) and EEG (electro-encephalograph) tests which measure the electromagnetic activity of the heart and brain, respectively. When electromagnetic activity ceases, your life ceases.

Electromagnetic energy controls your chemistry. Disruption of this energy in cells causes impaired cell metabolism, and if our cells are not healthy, our body is not healthy, in whole or in part. The following is an introduction to magnetic fields, PEMF's and their therapeutic actions.

If you have ever held two magnets together, and felt a resistance between them, then you have experienced a magnetic field. The earth has it's own magnetic field produced by fluxes in the molten core of the planet. The presence of this field is what causes a compass to rotate so that the North pole of the compass is roughly north. A changing magnet field (such as a magnetic field passing through a coil) generates an electric field (which would drive a current in a coil). This forms the basis for many electrical generators and motors.

This is the natural activity of the universe. An electromagnetic field is a physical field produced by moving electrical charges. It effects the behaviour of any other charged objects in the vicinity of the field.

PEMF stands for Pulsed Electromagnetic Fields, which are widely used these days to improve circulation and cell metabolism. The body can become accustomed to nonmoving (or static) magnetic fields (magnets) which generally are unable to penetrate deeply into the body. A pulsed electromagnetic field however, is quite dynamic, is able to penetrate all the way through the body, and creates a cascade of effects within the body.

Its important to distinguish between electromagnetic fields we use for therapeutic purposes and other man-made electro-magnetic fields from power lines, microwave ovens, cell phones, cell phone towers, T.V and all other electrical house-hold appliances. All of which create damage to our bodies.

How do electromagnetic fields affect my body?

As we now understand, electromagnetic fields affects the behaviour of anything with charge in the vicinity of the field. Our bodies are electric-every heartbeat generates electromagnetic waves throughout the blood vessels, stimulating tissues at a cellular level. External electromagnetic fields and the normal electro-magnetic fields of the body interact. So, a magnetic field passing through our whole body will have an effect on each of our 70 trillion cells. As a result, magnetic fields act in basic and fundamental ways on the molecules and tissues. They affect the most basic functions of all cells-human, animal and plant included.

What are some of the basic cell functions, and how do magnetic fields facilitate them?

Some of the basic actions of a cell are to generate energy to eliminate waste, to repair and regenerate itself, and perform its predetermined functions based on the cells type and location in the body. Magnetic fields cause or increase motion of ions (a molecule or atom with an uneven number of electrons to protons, giving the molecule or atom a net positive or negative charge) and electrolytes (minerals in the body's blood and fluids that have an electric charge) in the tissues and fluids of the body.

Its both quick, and easy, to move ions or electrolytes in a living organism using magnetic fields. This movement stimulates a vast array of chemical and electric actions in the tissue of the body, healing them to rebalance or heal themselves where necessary.

All cells need energy to function. Cellular energy requires ATP (Adenosine Triphosphate) and is fundamental to all cell and body functions and is necessary to sustain life itself. ATP regulates cell metabolism by transporting chemical energy within our cells. Low ATP levels cause our cells to be sick, and decrease their ability to heal, regenerate, or function properly. Through the increased motions of ions and electrolytes, magnetic fields help cells increase their energy (or “charge”) by up to 500%.

Why do I need treatment at the cellular level?

Magnetic fields also affect the charge of the cell's membrane, which allows the membrane channels to open. These channels are like doors and windows of a house. By opening cell channels, dietary nutrients are better able to enter the cell, and waste is more easily eliminated from the cell. This helps to rebalance and restore optimum cell function. If you restore enough cells, they will all work more efficiently. Cells of the same type come together to make tissue, and those tissues come together to make organs. So, by restoring or maintaining cellular function, you will, in turn, restore or maintain organ function, allowing the entire body to function better. We know that the body ages over time. Maintaining the function of every individual cell at an optimal level every day is an important part of slowing ageing.

Can PEMF therapy protect me from future illnesses?

Cellular “injury”, the state of a cell when it is not healthy, leads to a diseased condition. Magnetic fields protect against cell injury by improving circulation, repair processes, and energy, and increasing special stress proteins into the cells. These proteins are used to prevent cell break-down and general wear and tear, as well as helping speed recovery from injury. Magnetic fields balance cells, tissues, and bodily functions at a very fundamental level, even before damage and problems become obvious to you.

I thought magnetic fields were bad for me?

There are distinct differences in the effects of various devices at various frequency ranges, from extremely low frequencies (ELF's) to very low frequencies (VLF's) to microwave level frequencies, radio frequencies, infrared and ultraviolet frequencies and more. Most magnetic field exposure risk comes from power lines and cell phones, because their particular exposure times or field strengths and frequencies. These frequencies and intensities, known as “electro-smog”, can induce heat in tissues of the body and modify genes and DNA, and therefore can damage cells. The MagnaField system provides great defence against magnetic field deficiency caused by electro-smog.

Can I overdose on a magnetic field?

Low frequency, low intensity magnetic fields have minimal effect on healthy cells. In a healthy cell, these magnetic fields seem to be ignored. A cell cannot make more energy than it is capable of. In other words, it cannot be “overcharged” with PEMF's. Only unhealthy or unbalanced cells need and use the extra energy from therapeutic PEMF's to get better.

How quickly will my illness or health issue improve?

Minor imbalances in individual cells can be rebalanced very easily before they become an obvious problem. Regrettably, most people wait until they have a significant health issue before they seek treatment with

PEMF technology. By this time, some problems have become too deep-seated to reverse, and only symptom control remains possible. It is important to say that PEMF's are not expected to cure disease. Their role is to stimulate the various functions of the body so that the body can better support and heal itself.

Understanding the extent of a health problem will help the individual to have realistic expectations of the time required to produce expected or desired results. If the problem took a long time to get where it is now, PEMF's may take a long time to give the greatest benefit- and may never produce hoped for results if the damage is too great. That doesn't mean they won't work, and it doesn't mean you won't get significant health benefits. We need to respect the body's healing timelines and processes, and work positively with them. When treatment is begun, the order of healing will follow the body's own wisdom of what tissue and symptoms will be cleared first, second, etc. Patience and acceptance of this natural order will aid in the healing process.

Will magnetic fields replace my medication?

While PEMF's will not cure diabetes, heart disease, arthritis, or cancer, they can still make a huge improvement in overall function and symptom relief, and can be used alongside other treatments, including medication, for even better results. In many cases, PEMF's can be used to replace or reduce pain medications and other anti-inflammatories, but they should not be depended on as the primary treatment without discussion with an appropriate health care professional.

They can become a primary treatment once a proper diagnosis and treatment plan are developed and the need for medication is reduced or eliminated.

How often should I do treatments? Daily or only as problems arise?

Magnetic fields selected for treatment simultaneously provide health maintenance, not just treatment. PEMF's used in the home daily would be an important part of any prevention or health maintenance program, in addition to any treatment program. Magnetic therapies are usually complementary to other therapies, and they usually enhance each others benefits.

What are some of the basic beneficial effects of PEMFs on my body?

Increased Circulation

One of the most basic functions magnetic fields have in the body is to increase circulation. When a cell (such as a red blood cell) is injured or ill, it does not hold its ideal "charge". This causes red blood cells to "stick" together, making circulation slow. When a magnetic field passes through a red blood cell, the membrane becomes properly charged, allowing the cell to repel itself and keep itself separate from other red blood cells, thereby increasing circulation. In addition, PEMF's increase various chemicals in the blood vessel walls that cause the blood vessel walls to dilate and thereby increasing the amount of oxygen delivered to the tissues.

Poor circulation makes tissues unhealthy and prone to disease and breakdown. Improved circulation helps tissues get the nutrition and oxygen they need, while expelling the waste they produce. The result of improved circulation is the reduction of swelling and the removal of bruising.

Enhanced Muscle Function

Muscle energy, needed for muscles to work, is developed through a process called Myosin Phosphorylation. Myosin is muscle, and phosphorylation is energy (ATP) production. Optimal energy allows muscles to work longer and harder, and recover more quickly from their work. Muscles that are contracted or in spasm are better able to relax, decreasing tension and reducing the pain caused by spasm.

Decreased Inflammation

Inflammation is a cascade of physiologic processes initiated by the body to repair cellular damage in the tissues by increasing blood flow to the damaged area and increasing the number of good inflammatory cells. The process of inflammation is generated and supported by the interaction of a number of immune cell types, with other cell types, like Killer T cells, (KT cells) playing a regulatory role in the cascade effect. Inflammation is a necessary and beneficial process, but it often persists longer than necessary, resulting in chronic inflammation. This is frequently the cause of chronic pain. PEMF's have been found to reduce chronic, damaging inflammation.

Killer T cells are a major regulator of the inflammatory cascade. In bacterial infections, early infiltration of the affected tissues by the white blood cells is followed by the arrival of KT cells, which kill bacteria. In this circumstance, eliminating KT cells can delay or stop healing. Conversely, in trauma induced injury, KT cells are less important in the healing process, and may be harmful if present too long.

In this case, elimination of KT cells can minimise the unwanted actions of inflammation, accelerate healing, and reduce the risk of chronic inflammatory disease. In chronic inflammatory diseases such as rheumatoid arthritis, psoriasis or tendinitis, KT cells support the persistence of the disease, therefore removing them would be favourable to the sufferer.

Research shows that PEMF's can induce the appropriate death of aged, chronic KT cells by actions on the KT cells membrane and key enzymes in the cells. For example, PEMF's affect ion flow through specific cell membrane channels (like those for sodium, potassium, and calcium) which positively affect these enzymes.

Stress Reduction

Stress is a natural part of being human. Normal levels of physical and mental stress is called "eustress" as opposed to "distress". Too much stress is very harmful to the body, and accelerates ageing. Stress is responsible for at least 65-70% of all illness, so stress reduction is paramount to all of us. Stress reducing activities, performed only now and then will allow too much stress-related damage to accumulate over time. Therefore, stress reduction must be a daily activity.

PEMF's have many proven stress-reducing effects. Daily use of PEMF's help wash away the negative effects that stresses have on our body and mind.

Bone Healing

PEMF's pass through our bodies-even the bones-as if the body wasn't even there. PEMF's work to repair bones, whether they are damaged by surgery, injury or disease, and have been found to improve bone regeneration such as occurs with osteoporosis and osteopenia, among other bone destroying conditions.

Blood Oxygenation

Just as a fire cannot burn without oxygen, your cells cannot produce heat and energy without oxygen. Our lungs extract oxygen from the air we breathe. It passes into our blood and is carried by arteries away from the heart to be delivered to the rest of the body, including all our organs. PEMF's help with the process of extracting oxygen out of the air we breathe and help it to be transported into circulation. The absorbed oxygen is then transported through the body to all the cells, where it is absorbed into the individual cells. In

the cells, enzymes and other basic cell energy production processes use the oxygen for cell metabolism, the energy to perform every cell function required for its survival. The metabolism of an organism determines which substances it will find nutritious and which it will find harmful. Proper blood-oxygen levels at the cell level (not just in the blood) allow this process to continue quickly and efficiently. After the oxygen exchange takes place, veins carry deoxygenated blood and metabolic waste away from those same cells and back to the heart for recycling again.

In addition to rebalancing and regenerating the cell, PEMF's also help with many other functions and conditions, some of these include:

- Reducing muscle tension improving tissue healing
- Reducing pain Increasing energy
- Improving clotting factors Slowing development of arthritis
- Stimulating the immune system Aiding cell detoxification
- Improving uptake of nutrients Reducing Blood Pressure
- Helping nerve function Helping liver function
- Improving sleep Lifting depression
- Reducing anxiety Suppresses bacterial infection