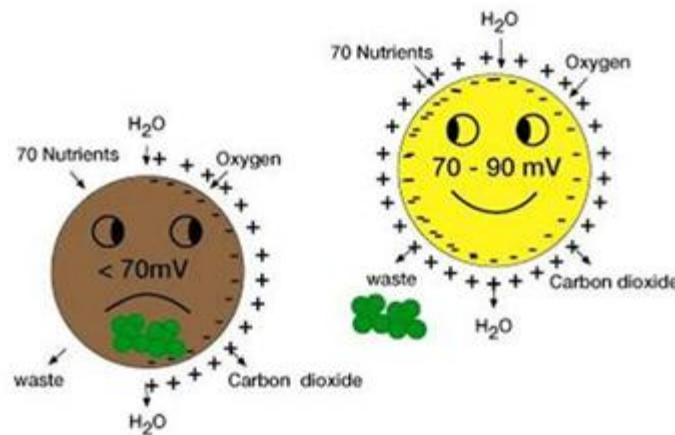


Research indicates that in general, magnetic therapy works because of the electromagnetic nature of the body. Every cell in our body consists of electrically charged particles that are either positive or negative ions. All are directly affected by exposure to external magnetic fields.

PULSED ELECTRO MAGNET FIELDS (PEMF) can affect the body at both microscopic and at overall levels. If the PEMF can be placed to influence a section of blood vessel carrying the fluid flow, then the flow at that place will be improved locally and there will be an improvement in the alignment of the molecules,

Magnetic Field Therapy (MFT) is one of the world's oldest forms of healing. The first documented references to MFT in medicine were made over 6000 years ago and make MFT one of the most traditional methods of medical treatment.

MFT was used widely for healing by the ancient Greeks, Romans and in particular the Egyptians as well as the highly advanced cultures of Central America. It was central to the medical models of Paracelsus and Messmer.



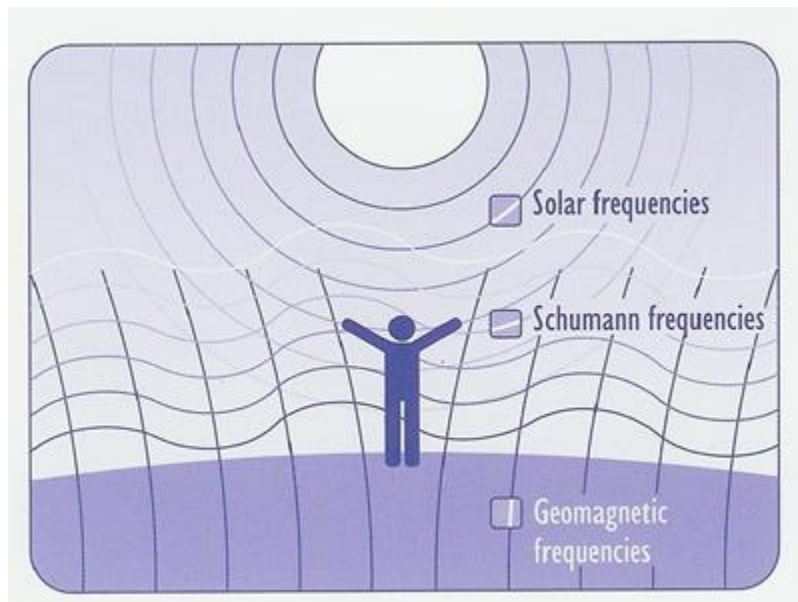
Bio-magnetic healing is a therapy that is now sweeping the US because it helps the body heal itself. Used in ancient Egypt and rediscovered by NASA for the astronauts, magnet therapy has also been successful in providing relief for the complex issues of WRULD. (Repetitive Strain Injury (RSI) is one of the curses of modern technology; Work Related Upper Limb Disorder (WRULD) may be a newer label for the syndrome but the symptoms are the same: pain, numbness, tingling and skin sensitivity)...

*From clinical experiments, we know that Pulsating Magnetic Fields can reduce pain sensations almost immediately. This is due in part to the increase in the oxygen partial pressure in the terminal tissue and the increase in the local perfusion and velocity of the capillary blood flow alleviating the accumulation of metabolites due to small vascularization and blood flow (transmitted by the sympathetic nervous system).*

As stated Magnet therapy was used in Ancient Egypt and rediscovered by NASA, lining the astronauts suits to avoid them being adversely affected by removal from the earth's natural magnetic field. Not only does the modern environment shield all of us from much of the natural geomagnetic field, but also research shows that over the last century it has declined 5 per cent. Yet it is fundamental for our health and well being. Iron makes up about 4 per cent of our blood content. Magnets attract metal: so placed on the body they increase the blood flow in a specific area.

## [The Development of MFT and Its Applications](#)

Electromagnetic fields are the basis of all life. The earth possesses [a magnetic field](#) which is the prerequisite for the survival of all life forms. The human body, like every other organism, functions by way of a finely co-ordinated network of electromagnetic fields and forces. These regulate most bodily functions and keep them in their natural equilibrium.



The [natural magnetic field of the earth](#) is dipolar with a strength of 0.5 Gauss or 50 micro Tesla ( $\mu\text{T}$ ). Although we do not actually feel this magnetic field, it influences the daily lives of humankind and nature in a decided way. We know for example that very many animals are dependent on the earth's magnetic field for their sense of direction (bees, termites, ants, beetles, migratory birds, storks, sharks, skate, turtles, whales etc).

*Lately reports have been appearing in the media about the earth's magnetic field.*

*They mainly concern progressive pole variation and the related weakening in intensity of the earth's magnetic field.*

## COMPENSATE

[Schumann Resonator](#)

[Understanding Colloidal Silver](#)

[Understanding Blood Electrification](#)

In 1998 the University of Frankfurt provided sensational proof for the first time that pigeons oriented themselves by using the earth's magnetic field. Their outstanding sense of direction can be accredited to small magnetic crystals in their bills (carrier pigeons). The same natural magnetic crystals can also be found in the brains of humans.

In principle all functions of the human body are based on electro-chemical-magnetic phenomena. The Nobel Prize winner "von Klitzing" describes the magnetic component of the body as the most effective one.

**At the University of Giessen scientists successfully proved that even magnetic fields of the lowest intensity (in the picotesla range) have an undeniable effect on the well-being of humans.** Similarly, the natural phenomenon of weather systems is an example of the effects of even low intensity magnetic fields

## Science and the Study of Magnetic Field Therapy

There have been more than 3000 studies made on MFT - clearly more than have been made on aspirin.

Some of the research and its results are listed below together with explanations for the impact of MFT. Research is being constantly updated and extended.

### Scientific Proof

The efficiency of pulsed electromagnetic field therapy has been proved and demonstrated in many different ways over the years.

- Dark field microscopy proves that clustering in the erythrocytes can be cleared. This leads to: improved viscosity of the blood, improved blood flow, enlargement of the surface area, increased oxygen levels and reduced risk of thrombosis.

- Bone density measurements reveal a significant increase in bone density after treatment over a fairly long period of time.

- Infrared thermography measurements show a warming of the skin caused by improved circulation or rather a widening of the capillaries.

- The measurement of the skin conduction potential at acupuncture meridian points (PROGNOS) method records the regulation of energy in the body.

- A combined bio feedback measurement demonstrates the optimisation of a large number of bodily functions after only a few minutes of treatment with pulsed magnetic fields.
- Photoplethysmography measurements indicate on average a 45% improvement in circulation in the area of microcirculation and an average increase of 25% in blood oxygen levels.

*After considerable experimentation on himself, friends, acquaintances and a few individuals diagnosed with AIDS, all reaped some health benefit. Dr Beck soon, however, realized that the blood might be cleared of viruses or other pathogens but these same pathogens could be temporarily hiding in the lymph system. To create the necessary microcurrents in lymph and tissue to neutralize viruses and other pathogens, he developed a magnetic pulse generator. Pulsed magnetic fields create microcurrents in lymph and other tissue. Externally applied magnetic pulses to the lymphatic system, the spleen, kidney & liver, help neutralize germinating, latent and incubating parasites of all types, helping to block re-infection. This speeds up the elimination of disease, restores the immune system, and supports detoxification. Permanent magnets, no matter how strong they are, will not produce the same results as the pulsed fields of Bob Beck's device, which produces induced back-emf currents.*

### [Magnetic Pulser](#)

#### **Regenerating Function - Bones**

- Osteoporosis particularly after the menopause (referring to both prophylaxis and therapy)
- Sudeck's disease (post-traumatic osteoporosis)
- Status after bone fracture and fissure; status post surgery on the skeletal system where, for example, bones have been set using screws or pins.
- Status after implantation of endoprosthesis (to prevent slackening)
- Development of pseudoarthrosis (false joint) after unstable fractures

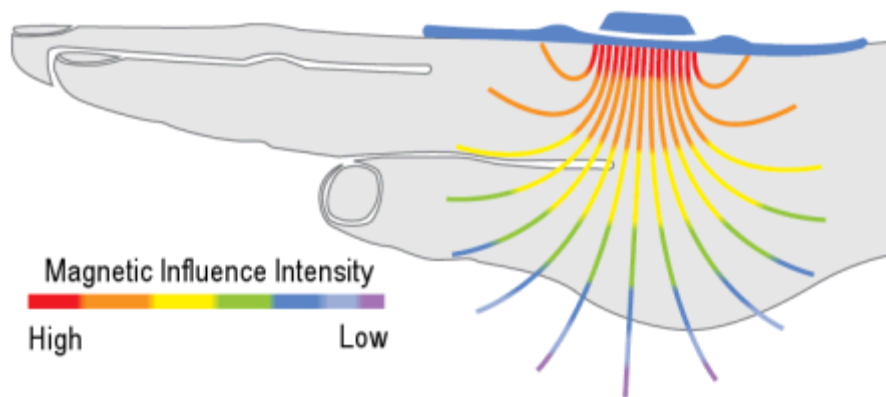
*There are generally two different methods of magnetic therapy application, those who expose the body to only the north (negative) pole and those who use low gauss strength simultaneous exposure to both the negative and positive poles. Magnetotherapy practitioners who exclusively use the north (negative) pole suggest an exposure intensity*

*of 2,000 to 4,000 gauss, an intensity not recommended for a dual or bi-polarity applications. The placement is generally simple and straight forward, with the magnet being placed directly on the area being treated, like applying a band-aide. In contrast, magnetotherapy practitioners who promote the use of spatially alternating magnetic poles generally employ magnets that are made with some sort of spatial pattern of alternating magnetic polarity such as concentric circles or a checkerboard pattern.*

*The duration of treatment is very important. The longer a magnet is applied to the injured or painful area, the more quickly it heals and the greater the symptom relief. Close to twenty four hours a day application is sometimes suggested, if possible. The duration of treatment is dependent upon the persistence of symptoms.*

### **Regenerating Function - Soft Tissues**

- Trauma following accidents with or without the skin being broken
- Burns
- Pressure sores (decubital ulcer)



### **Relaxing Function - Calming the Autonomic System**

- Neurodystonia (imbalance of the nervous system eg. attacks of perspiration)
- Sleep disorders
- Prophylactic relaxation effect to counteract everyday stress
- Stress in the general sense of the word, particularly after long periods of physical effort ("distress")
- Concentration difficulties
- Neuroses

### ***How Do Magnetic Fields Affect Cells?***

*All cells in the body share common components, regardless of their type. One of the common constituents of all cells are ions. Ions are positively and negatively charged particles that conduct electro-magnetic pulses from within the cell. The electro-magnetic pulses allow the cell to function. Without ions, a cell can not live.*

### **Increased Oxygen Supply**

- In aerobic cell respiration (increased stamina in athletic performance)
- In anaerobic cell respiration (more rapid regeneration as a result of expulsion of lactates and faster incorporation of glycogens into muscle cells)
- General increase in metabolism owing to increase in combustion processes within the cells (mitochondria)

### **Improved Circulation**

- Circulatory problems: in vascular disease caused by diabetes and sclerosis (arteriosclerosis), in varicose veins with ulcers
- Accelerated absorption of bruises (haematomas)
- Expulsion of lymph oedema

*Magnetic fields . They will attract many different types of metallic particles. The blood contains iron and when therapeutic Magnetic fields are placed on the skin the magnetic field penetrates through the skin and into the surrounding tissues and blood stream. The iron in the blood is attracted to the magnetic field, this causes movement within the blood stream and the increased activity causes the blood flow to improve.*

*The increase in blood flow is localized to the area where the magnets are placed, unless the Magnetic fields are placed directly over a major artery such as the radial artery (the wrist pulse point) or the carotid artery (the pulse point in the neck). When Magnetic fields are placed over a major artery, there is a much larger perfusion of blood flow so the magnetic field is carried further around the body.*

*When the body's blood flow, oxygen level is increased, nutrients and hormones are distributed to the organs and tissues much more effectively and quickly. Your organs have a fresh rich supply of oxygen and nutrients to nourish them. Plus the tissues also gain oxygen, healing nutrients and hormones including endorphins, which are the body's natural pain killing hormone.*

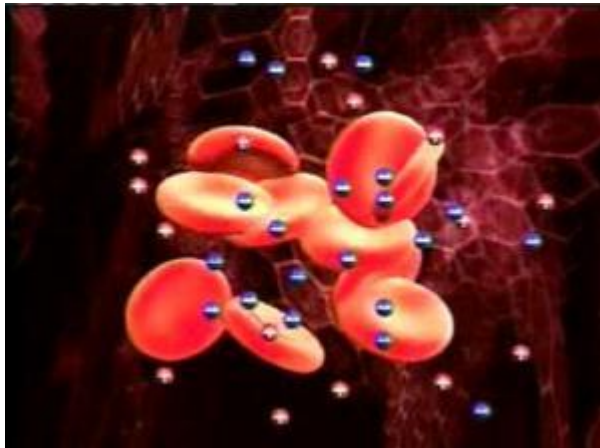
*If you have an injury or ailment which is supplied with regular fresh oxygen, nutrients and endorphins then your injury or ailment will heal*

*much faster and the pain will be reduced by the body's own pain killing hormones (endorphins).*

### **Pain Alleviation in Bones and Joints**

- Degeneration of the spine and the bones and joints in the arms and legs (knee, hip, elbow and shoulder etc)
- Rheumatic joint inflammations (eg. polyarthritis)
- Inflammations leading to stiffening in the vertebrae (eg. Bechterev's disease)
- Joint injuries (eg. from sport)

In a normal healthy cell, the ions are distributed around the cell with all of the positive ions on one side and the negative ions on the opposing side. The ions which live outside of the cell in the tissues will align with those inside of the cell so that opposing poles are together with the cell membrane between them (see diagram of healthy cell below). This allows fluid, oxygen and nutrients (fluid exchange) to move freely in and out of the cell, while maintaining the natural balance within the cell (homeostasis).



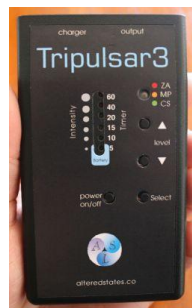
In a diseased (injured) cell, the positive and negative ions do not stay on opposing sides of the cell. They are disrupted and scatter randomly around the cell. At the same time the ions on the outside of the cell membrane also become scattered as they try to find their opposing pole, this results in cellular imbalance. Extra fluid from the tissues outside the cell is able to penetrate the cell which in turn pushes vital nutrients, hormones and electrolytes (salts) out of the cell. The cell's ability to function is greatly reduced and cellular degeneration begins, which if not corrected will lead to the cell dying.

## **Pain Alleviation in Soft Tissue**

- Non-articular rheumatism (fibromyalgia)
- Connective tissue injuries (eg. post-surgery, scar pain)
- Migraines

*The term Magnetic Resonance Stimulation Therapy refers to pulsating magnetic fields of a low frequency with a maximum intensity of 5 Gauss (equivalent to 10 times the strength of the earth's magnetic field). Our experiences in the practice and the following reports refer to Magnetic Resonance Stimulation Therapy.*

*However on this website we use the generic term Magnetic Field Therapy mostly because this term is more familiar to readers.*



## Magnetic pulsers

*The PMF therapy is a heatless therapy, therefore, all implants (except heart pacemakers) can be treated. Hospitals use PMF therapy to accelerate the healing of patients with pins and bone plates because no damaging heat is produced in the implants. Fractures can be treated even through a plaster cast, since magnetic fields permeate all materials*

## **Darkfield Microscopy - Blood Diagnostics**

Darkfield blood diagnostics give us an overview of the body's individual environment and thus its tendency to become ill. It allows for conclusions to be drawn on the individual's state of the health and possible causes of disease.

### **The Process**

A drop of blood is taken from the patient's finger and immediately looked at (therefore in its living condition) under a special dark field microscope. With the help of a video camera the picture is projected onto a monitor and discussed with the patient. The



patient experiences a real time view of the therapy's effectiveness.

The procedure gives a valuable picture of the "internal state" of the patient's immune and metabolic systems. Detailed information is available about the PH balance, the oxygen saturation levels of the red blood corpuscles, the degree of oxidative stresses, hydration of the cells and inflammations. Furthermore we can identify the effectiveness of the blood corpuscles (and any immuno-deficiencies) and the status of the liver and kidneys. Damage caused by environmental poisons, toxins eg. heavy metals becomes visible.

Professor Dr G Enderlein's observations of the micro-organisms living in blood (1872-1968) provide valuable information on the body's individual environment.

With the help of immune-biological medicine, decontamination measures and by regulating one's environment (nutritional advice, rebalance of the bowel flora), disease processes can be influenced and the immune system can be stimulated. Amazing results can be achieved particularly with chronic illnesses.

The effectiveness of MFT can be seen by taking a blood sample before and after MFT and observing the differences between them.

Broad Spectrum, Good Results

Medical Tribune author Dr Grebe tests pulsating magnetic field therapy.

Medical Tribune Report

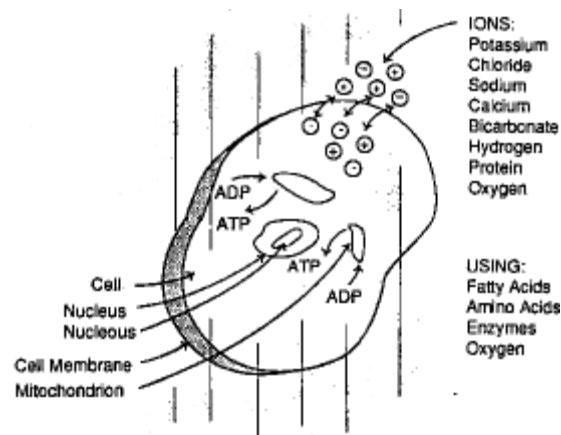
WIESBADEN - many individual health practices need to be....

Manche Individuelle Gesundheitsleistungen (IGeL) erfordern ein erkleckliches Sümmchen an Investitionen. Und die Einsatz- und Abrechnungsmöglichkeiten müssen gründlich ausgelotet werden. Gut, wenn man bei der Entscheidung auf die Erfahrung von Kollegen zurückgreifen kann. Dr. Wolfgang Grebe ist den MT-Lesern seit Jahren als Abrechnungsexperte vertraut. Auch auf dem Internistenkongress stellte der niedergelassene Internist und Co-Autor unseres Gebührenhandbuchs wieder IGeL vor. Eine davon hat er frisch und erfolgreich in seiner Praxis etabliert: die pulsierende Magnetfeldtherapie.

Further Information:  
[www.Medical-Tribune.de](http://www.Medical-Tribune.de)

*In Canada, government licensing even recognizes the use of a magnetic bed as a medical device. With the use of static magnets,*

*the north pole (south-seeking pole) of the magnet has different healing qualities than the south pole. North pole therapy is generally described as "contracting, healing, alkalizing" while south pole therapy is described as "stimulating." Having said this, a wealth of studies translated from Russian and Japanese, as examples, do not differentiate between north and south pole for effective healing.*



Magnetic Field Therapy (MFT) permeates all cells, enhances ion exchange, normalizes circulation, and increases the oxygen utilisation of the cell.

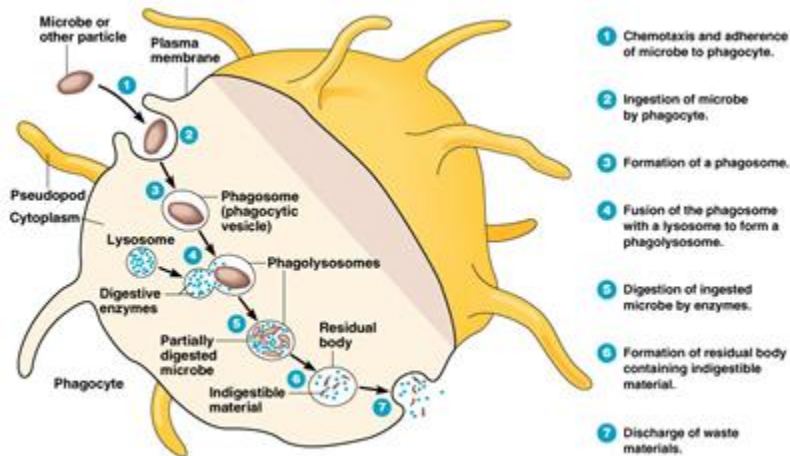
Normal cell potential = about 90 MV (millivolts)

Inflammatory condition = about 120MV

Degenerative condition = about 30 MV

## **How Does Magnetic Field Therapy Work with Multiple Sclerosis?**

Pulsed magnetic fields are used in the diagnostic of multiple sclerosis and they can have a role in its treatment as American researchers have recently shown in a study. Weak pulsating electromagnetic fields have a positive influence on fatigue and the general quality of life.



**(a) Phases of phagocytosis**  
 Copyright © 2004 Pearson Education, Inc., publishing as Benjamin Cummings.

PEMFields will also affect the white blood cells that are surrounding the injury and fighting the disease. White blood cells fight infection and disease by engulfing infectious and diseased and consuming them (phagocytosis). During this process the white blood cells release toxins into the blood stream. The body can not detoxify and excrete these toxins safely so they are stored in the tissues as small hard pockets of fluid (cellulite).

When a magnetic field is present in the blood, toxins in the tissues are drawn out as the magnetized

blood passes through the tissues. The toxins are then carried to the liver for detoxification and on to the kidneys for excretion.

For centuries people have tried to use magnets to alleviate pain but so far MFT has not enjoyed complete acceptance in traditional medicine. It is fact that until recently only a few scientifically reliable studies existed. American scientists have now proven that weak pulsating electromagnetic fields could alleviate some MS symptoms.

117 patients with multiple sclerosis participated in the research. For four weeks they were exposed to a daily dose of a weak pulsating electromagnetic field of low frequency. The scientists paid special attention to the effect of the treatment on fatigue, bladder control, spastics and the quality of life.

*Much research and interest is now directed toward the electrical nature of life. Scientists have established beyond any doubt that all living cells are electrical in nature. The functioning of the cells and nervous system of every living being is based on direct current (DC) and pulsed DC energy. Without this energy, there is no life. Each individual cell possesses a positive electrical charge at its nucleus and a negative electrical charge on its outer membrane.*

*This positive-negative polarization allows each cell to function in an orderly and healthy manner. As cells perform their normal bodily functions, this electromagnetic charge wears down. The body attempts to revitalize these "tired" cells by sending pulses of electromagnetic energy from the brain through the nervous system to recharge the cells and strengthen the polarized field.*

*The energy can be diminished or blocked conditions found throughout today's environment, resulting in a host of modern maladies. These can range from headaches and fatigue to tumors and disruption of both circulatory and digestive systems, along with other specific and non-specific ailments.*

Treatment with electromagnetic fields significantly reduced fatigue symptoms and improved the subjects' general quality of life. Mixed results were obtained with spastic symptoms and blisters were unaffected by the treatment.

In the opinion of the authors a treatment with pulsating electromagnetic fields can alleviate some MS symptoms. Thus their data confirm the results of earlier research with smaller numbers of participants. The heads of the research endorse further investigation to clarify whether patients benefit from ambulatory treatment or whether they can profit from the beta interferons of this treatment. (BSMO)

Source: the technical periodical "Alternative Therapies in Health and Medicine" July 2003

Further information:

[www.ms-life.de](http://www.ms-life.de)

### [UNDERSTANDING MAGNETIC THERAPY FOR DOGS](#)

*By Shawn Messonnier, DVM*

*In recent years, therapy for dogs using magnets has gained a large following among some pet owners. It is seen as a safe and simple method of treating various disorders, often producing positive results without side effects or much expense. This type of treatment is often used in conjunction or to replace other therapies include traditional medications, surgery, and of course complementary therapies such as acupuncture and herbs.*

[Great Info](#)

## **Physiotherapy: Magnetic Field Therapy Influences Arterial Muscle Tone**

A study involving rats has shown that MFT affects the muscle tone of capillaries dependant upon their original state.

Around 2000 years ago the Chinese already practised MFT. In the 21st Century the industry generates around 500m US Dollars a year. Only sporadic reporting of MFT's effects mean that only limited evidence of its potential is available.

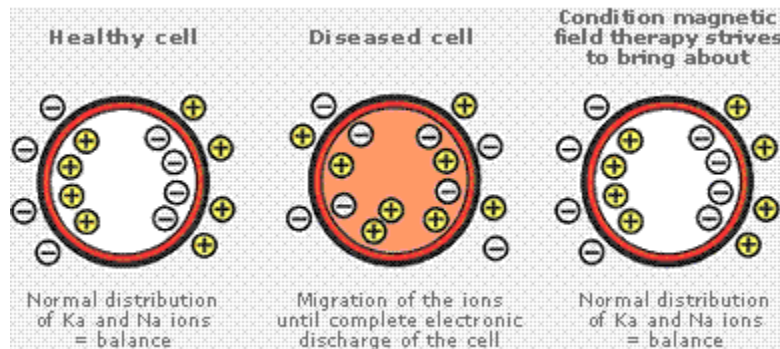
*All magnets have two poles, one positive and one negative. In 1974*

*Albert Roy Davis, Ph.D., noted that positive and negative magnetic polarities have different effects upon the biological systems of both animals and humans. Davis then concluded that negative magnetic fields have a beneficial effect on living organisms, whereas positive magnetic fields have a stressful effect. A positive magnetic pole, with prolonged exposure, interferes with metabolic functioning, produces acidity, reduces cellular oxygen supply, and encourages replication of latent microorganisms. Positive magnetic fields can increase pain due to their interference with normal metabolic functions.*

*Robert Becker, M.D., (Orthopedic surgeon) found that weak electric currents promote the healing of broken bones.*

*Static magnetic fields are produced by natural or artificial magnets. Pulsating magnets are generated entirely by electrical devices. According to William H. Philpott, M.D., of Choctaw, Oklahoma, magnetic fields can stimulate metabolism and increase the amount of oxygen available to the cells of the body. Dr. Philpott pioneered the use of magnetic therapy for psychiatric disorders. The biological value of oxygen is increased by the influence of a negative electromagnetic field, and the field causes the negatively charged deoxyribonucleic acid (DNA) to "pull" the oxygen out of the bloodstream and into the cell. The negative electromagnetic field keeps a cellular buffer system (pH or acid-base balance) intact so that cells remain alkaline; pathogenic microorganisms cannot survive in a well-oxygenated, alkaline environment. Also, magnetotherapy can increase enzyme action because it fosters a favorable environment within cells (mainly a proper pH).*

*A negative magnetic field applied to the top of the head has a calming, sleep-inducing effect on brain and body functions, due to the stimulation of the production of the hormone melatonin. Melatonin is antistressful, antiaging, antiinfectious, anticancerous, and has control over respiration and the production of free radicals (highly destructive molecules that are missing one electron, and readily react with other molecules). Free radicals can lead to decreased efficiency of protein synthesis*



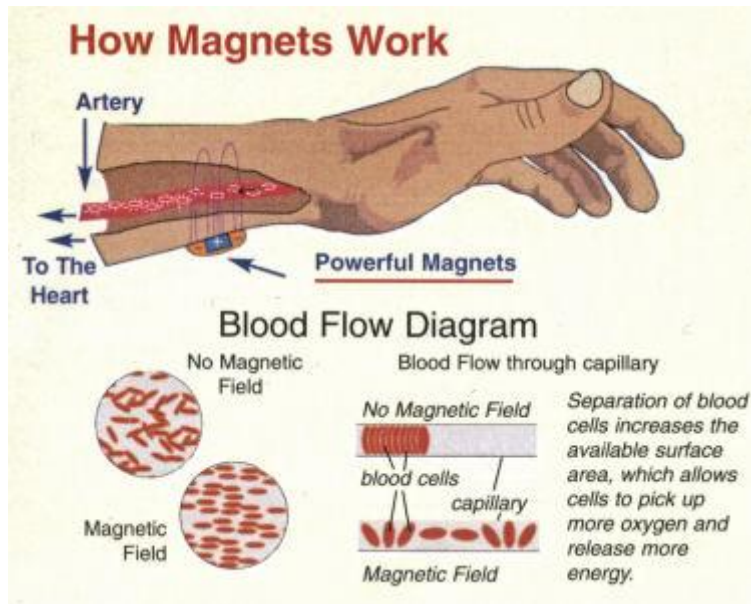
Scientists at the University of Virginia are now examining the effect of static magnetic field therapy on the micro vasculature tone of skeletal muscles. They base the research on the assumption that MFT can improve blood supply by changing this muscle tone and therefore help with injuries, inflammations and other pathophysiological conditions. The scientists measured the changes in capillary width in the spinotrapezius muscle of Sprague Dawley rats which were exposed to 15 minutes of MFT. Before, during and after the therapy the muscles were examined with the aid of scans.

Results showed that originally expanded capillaries contract themselves and contracted capillaries expand following treatment with MFT. From this study we can conclude at the very least that MFT has a certain influence on capillary muscle tone so the therapy is applicable to ischemic (contracted capillaries) and/or edematous (expanded capillaries) conditions.

Source and Further Information:  
Kongress: Experimental Biology 2003

#### Research Results Verify the Effects of MFT on Patients with Diabetes and Poliomyelitis

Bremen. The Greeks of antiquity used magnets to treat their soldiers' injuries and the menstruation pains of their women. Then magnets faded into oblivion as a treatment source. For a while they were even treated with suspicion. Only now have magnets returned to popularity as a method of healing. At the present time 'healing magnets' generate a five billion Dollar industry worldwide with the majority being used in the USA.... and in Germany where the number of devotees is growing.



*Numerous testimonials from individuals who use a magnetic pulse generator on tumors, lymph, teeth and organs support the effectiveness of providing the body with both microcurrents and magnetic therapy. The research studies on pulsed magnetic fields (many conducted in Russia) indicate they are effective in many cases to improve circulation, accelerate tissue regeneration, regulate the nervous system, reduce inflammation and relieve pain. Studies in the US indicate pulsed magnetic fields may help speed the healing of fractures and have proved effective in fractures that would not otherwise heal.*

### **Renaissance in the Use of Magnets Took Place in Japan**

The magnetic Renaissance ended up occurring in Japan in the 1960s where they developed small magnetic plasters of the size of a one mark piece. These are fastened with the North Pole facing downwards onto the skin. These were improved upon with time. For instance the north and south poles of the so called magnetic foils are coiled together alternately in circles. They can be concealed under clothing and long past are the times when patients had to stand on large magnetic blocks. Nevertheless the question remains whether technically refined magnets can actually help.





*When PEMF are placed over an area of inflammation, the magnetic field penetrates through the skin and deep into the tissues and blood stream. Damaged cells will react to the presence of a magnetic field by realigning their ions into the correct position. This begins the process of eliminating the excess fluid from within the cell. Cell damage will stop and healing of the cells will begin over a period of days.*

A recently published study from the USA (JAMA, 283 (2000), 1322-1325) gave rather sobering results. Here 20 patients had magnetic plasters placed on their backs to treat back pain; some of them were treated to placebos. The result; after four weeks both groups were only somewhat better with the magnets performing no better than the placebos. However the research was strongly criticised as the test patients only wore the magnets for 18 hours per week. "the correct application requires the magnets to be worn 24 hours a day on the skin" stresses Dr Michael I Weintraub of the New York Medical College in Briarcliff in the US Federal State of New York.

Weintraub carried out a study with 24 patients who suffered from peripheral polyneuropathy as a complication of their diabetes mellitus (J Pain Manage 9, 1999, 8). On one foot they inserted a magnetic sole, on the other, a placebo.

### **"Magnetic Feet" Showed Clear Improvement**

A month later the patients' "magnetic feet" were clearly improved. The pain had substantially decreased in comparison to the other foot.

In another American study the magnets were tested on 50 patients. They had had poliomyelitis and now had chronic joint pain (Arch Phys Med Rehabil 78, 1977, 1200). Magnetic foils with alternating polarity led to three quarters of the test subjects having

a clear reduction in their complaints. In Germany the Munich Dr. Michael Kris has worked for some time with permanent magnets and in his opinion "the success rate of this treatment on patients with soft tissue injuries is more than 70 percent".

### **Blood Vessels Expand**

Magnets have a very real pain reducing effect. Physiologically this effect is explained by magnetism expanding blood vessels and improving blood flow. The results of laboratory research have so far revealed no harmful side effects nor are they expected. The World Health Organisation declares static magnetic fields of up to 20,000 Gauss as harmless and magnets used for treatment are only of between 300 and 5,000 Gauss. It is however difficult to acquire these magnets in Germany and they are more accessible on the Internet or through advertisements in women's magazines.

Certainly headlines like "the absolute pain relief weapon from Japan" make the treatment seem less respectable. In addition it is often unclear which type of magnet is being sold. Inexpensive products are usually the simple magnetic plasters which do not always work whereas the Magnetic foils with alternating polarity are substantially more expensive. But their abilities are well documented. They have recently been designated as "LiTai" in pharmacies.

Further information under:

[www.infoline.at](http://www.infoline.at) Studies and Research by the Sportorthopaedic Clinic Bern  
Complementary therapies in the treatment of pseudoarthrosis (Dr. Med. Ottmar Gorschewsky, Dr. Med. Fabian Krause).

### **Magnetic Field Therapy**

The first use of magnetic fields in the treatment of PA is attributed to Basset who published his first clinical results in 1974.

The health benefits of magnetic fields with PA is due to the imitation of the physiological cell potential by the low-frequency alternating current. The cell's own membrane potential is overcome which induces a cellular change so that bone healing can progress. Good conduction conditions for the current applied are needed to guarantee success ie. Deperiostized bones, unstable and atrophied PA worsen because of the higher electrical resistance of the stimulation.

MFT helps where vital fractures are not healing and it also helps to treat calluses.

Contraindications arise from electromagnetic resistance such as proximity to a cardiac pacemaker and ferrous magnetic osteosynthesis material.

*Dr. Robert O. Becker, M.D., one of America's pioneers in the field of research on regeneration and electrical currents in living things, has achieved what have been termed "miraculous" results in healing with biomagnetic therapy. He has gone so far as to speculate that electro-pollution, in addition to causing some cancers, may be contributing to the onslaught of such maladies as Reye's syndrome, Lyme disease,*

*Legionnaire's disease, and AIDS.*

*Kyoichi Nakagawa, M.D., one of the world's foremost authorities on magnetism and its therapeutic effects on the human body, claims that the continuing degrading of the earth's magnetic field, combined with mans electronic environment, is responsible for a broad range of ailments which he labels as the Magnetic Deficiency Syndrome. These ailments include stiffness of the shoulders, back pain, neck pain, uncertain low back pain, chest pains for no specific reason, habitual headache, heaviness of head, dizziness, insomnia for uncertain reasons, habitual constipation and general fatigue*

High-energy dynamic magnetic fields with curve amplitudes of up to 20 Gauss must be applied for up to 10 hours daily. A newer generation, which work by using low-energy dynamic magnetic fields within a static magnetic field with a curve amplitude of only 0.4 Gauss, need only be applied for 30 minutes daily.

Magnetic field therapy is not very common despite supporting clinical evidence in German speaking countries. Healing rates in the treatment of PA in larger clinical studies are between 70-85% (multi-center study in the USA - Orthologic 6'96, S Sattler et al. - Bangladesh Med. Res. Counc. Bull. 4'99).

Source and further information under:  
Sportorthopädie Bern

*Pulsed magnetic fields have proven to help by increasing oxygen in the cells, improving cell metabolism and enhancing mineral exchange. Studies indicate these benefits have helped individuals overcome heart, lung, gastrointestinal, rheumatic and skin diseases as well as overcoming infections and improving immunity. In short, there are many benefits from the use of a magnetic pulse generator.*

## **Sleep Disturbances**

About 26% of the population suffer from sleep disturbances. More than 88 different forms have been identified. More than 50% suffer in the over 60s age group. Alongside a range of medical and behavioural measurements, evidence exists that pulsed magnetic fields can lead to improved sleep patterns and reduced daytime tiredness. A goal of this investigation was to evaluate the influence on daily fatigue of a regular application of magnetic fields. Altogether 150 patients with non-organic sleep disturbances were included, about 75 of whom would use magnetic field treatment for two weeks.

The results were determined on the basis of three internationally valid scales. On the Epworth scale (maximum 24 points) a clear decrease showed of daily tiredness of on average 11.6 +/-1.3 ..... after application of magnetic fields while in the control group (initial level: 11.4 points) no significant improvement was attained. On the Stanford Sleep Scale (Max 7 points) the magnetic field group reached 3.1+/-0.2 points .... From an original 5.3+/-1.1 points. Once again no improvement was noted in the control group (initial level:5.0 points). With the self-evaluation group (max 40 points) the magnetic field group went from an initial 28.2+/-2.2p points.... To a final score of 16.1+/-2.2 points while the control group (start value 26.5 points) showed no significant change. These results prove that magnetic field therapy reduces daily tiredness which leads indirectly to an improvement in sleep patterns. Further polysomnographic investigations confirm this assumption.

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This study was presented at the 4. International Congress on Geriatric diseases, 17. to 19. May 2001, in Vienna published in ENERMED, 5. Jg., Nr.1, June 2001

Related information and links:

Ä rztewoche

*Pulsed magnetic fields have proven to help by increasing oxygen in the cells, improving cell metabolism and enhancing mineral exchange*

*Through the principle of induction, this magnetic field creates tiny electrical micro-currents in living organic materials that contain an electrolyte such as saline.*

*Pulsed magnetic fields, in addition to the healing qualities of static magnets, produce microcurrents of electricity in body cells and tissue. This was the purpose in the development of a magnetic pulse generator for health.*

## **Treatment of Pain**

Magnetic fields and electric current are related. Each current, and that includes the current in electrical circuits, creates a magnetic field. Each reversal of a magnetic field creates an electrical field. This mutual induction of variable electrical and magnetic fields is the basis of the Maxwell equation in physics. These laws of physics lead to

eg. the fact that moving electrical charges align themselves into a constant magnetic field. Nuclear spin tomography (MRT) is based upon these laws. Moving electrical charges for eg. electrons or loaded molecules produce a small magnetic field and work like elementary magnets which can interact with constant magnetic fields. A variable magnetic field creates an electrical field which in itself exerts a force on resting electrical charges.

Biological procedures are usually achieved through electrical operational sequences for example all nerve information transfers. Important procedures in the cell depend on oxygen and other carriers of energetic charges which are magnetisable. When the organism is ill, however these procedures are often disturbed which leads to metabolism disorders. There is a reduced power supply in the cell and a build up of waste products within the cell as they cannot be effectively removed. Applying a magnetic field allows the electrical operational sequences to realign and poisoned and inactive cells normalise.

The fact that almost all disease affects the cells, our smallest independent biological unit, explains MFT's high success rate. Stimulation of the cells leads to increased metabolism and efficient disposal of wastes and toxins. Toxins can be removed and the healing process is enhanced.

Continuous, non-pulsating magnetic fields do not change inactive charges. Therefore pulsating magnetic fields should be used in treatments. The energy fields work at a deep level which reach all parts of the body like the internal organs or bones which cannot be treated through other methods.

Although more scientific proof of the effects and mechanism of MFT is needed, pulsating magnetic fields of certain frequencies and intensities are very well researched and are proving very successful.

The therapy is used mainly with inflammations and pain and supports wound and bone healing. It is suitable for stabilizing the immune system eg. with infection and metabolism-dependent allergies and in particular for the improvement of the bone and cartilage structure with joint problems after sport and spinal injuries. It is effective in pain alleviation with migraines and headaches, for hormone balance and for the treatment of rheumatic conditions (acute and chronic).

Similarly positive results have been achieved for the treatment of blood circulation disorders which affect the metabolism (eg. with gout and diabetes) and blood pressure. Bronchitis and asthma, vertigo and tinnitus can be treated. Even patients with carcinomas can be treatable with regard to pain therapy.

Many applications and the theoretical bases of MFT have been scientifically proven however not every human responds in the same way. The exact mechanisms of the effect of magnetic fields on the body and optimal therapy doses are still unclear. In all other respects MFT treatment devices fall under medicine product law.

To summarise MFT therapy devices can often be a very useful complementary method to traditional medicine. Unfortunately there are a wide range of therapy devices on the market whose uses are questionable. With magnetic field therapy it is often the case that after the initial therapy complaints could worsen for a short time. These reactions often indicate the beginning of the healing process. It must be mentioned however that aggravated symptoms could also be caused by the progression of an illness and are not an absolute indicator that an improvement has been affected. In principle magnetic field therapies should only be applied under medical supervision since only the physician can assess whether the healing process and/or pain relief has been caused by the treatment or whether it there has been a deterioration.

Source and further information under:  
[www.medicine-worldwide](http://www.medicine-worldwide)

*Human and animal organisms consist of a large number of cells which function electrically. If there is no electrical potential left in the cell, it is no longer viable. These cells have a basic (or rest) potential that is necessary for normal cellular metabolism.*

*Diseased or damaged cells have an altered rest potential. If the ions (electrically charged particles surrounding the cells) move into an area of pulsating magnetic fields, they will be influenced by the rhythm of the pulsation. The rest potential of the cell is proportional to the ion exchange occurring at the cell membrane.*

### **Formation of Melatonin**

The epiphysis (pineal gland) and the hormone melatonin are influenced by electrical fields, magnetic fields and electromagnetic fields.

#### **This leads to:**

The effect of magnetic fields on biological systems is scientifically proven and can thus be effectively used in treatment.

Source and further information:  
Humboldt-Universität zu Berlin

*Magnets appear to heal the body removing inflammation and restoring circulation. By increasing blood flow to a diseased site on the body, increased nutrients become available to speed the healing process. In fracture healing, for example, the use of magnetic fields increases the adherence of calcium ions to the blood clot formed at the site of the*

*break. This allows for the proper formation of the callus that is necessary for fractures to heal properly.*

*In the eastern view of healing, magnets help restore the energy flow of the body to allow healing and proper metabolism. This is similar to one of the theories used to explain the positive affects of acupuncture as well*

## **Effects of MFT**

It was noticed that MFT works in two different ways: on the one hand it works on the individual cell and therefore directly on the different organs, on the other hand it gives the governing organs of the body impulses that can regulate individual organs and the functions of the body. On one hand it provides for the fitness of the individual organ and on the other hand it rectifies malfunctions or poor performance in organ control.

A further positive effect occurs in the cells' Ca<sup>+</sup> ions which, together with a changed pH value, lead to the so-called calcium cascade. Calcium is an essential messenger conductor in the cell. As a consequence of the raised calcium levels the metabolism is stimulated as well as specific cell functions. The following processes are:

- Activation of macro phages, thereby improved waste disposal from tissue and blood and in addition, resistance to pathogens.
- Activation of the metabolism by acceleration of essential processes.
- Production of nitrogen monoxide which relaxes the tissues of the blood vessels and therefore expands them. As an essential component of nitroglycerin it is important in the primary care of cardiac infarcts.
- Optimization of blood pressure. Blood pressure adjustment sensors are found in the brain stem which can positively react to shifts in calcium levels. Blood pressure receptors in the carotid arteries are also positively influenced and narrowing of the vessels is avoided.
- Stimulation of cytokines For eg. explain MFT's very high success rate in the treatment of wounds and in general orthopaedics.
- Reduction in sensitivity when adrenaline and cortisol are administered and therefore lowered stress.
- Activation of insulin secretion in the pancreas.
- Increase in the pain threshold at free nerve endings.

Possible contraindications eg. electrical implants (eg. cardiac pacemakers), epilepsy and pregnancy.

### **Indications of MFT as a Complementary Treatment**

- Orthopaedics: arthrosis, arthritis, torn ligaments, pulled ligaments, ligament disc injury, Bechterew's disease, fibromyalgia, joint replacement, prostheses, sciatica, carpal tunnel syndrome, fractures, osteoporosis, tennis arm, illnesses of rheumatic nature.
- Pain Conditions: migraine, tension headache, phantom pain, palliative care
- Heart and circulation problems: apoplexy, blood circulation disorders, hypertension and hypotension, peripheral arterial blockage
- Pulmology: bronchial asthma
- Stomach and intestine disorders: irritable bowel syndrome, digestive disorders
- Urology: problems in emptying the bladder and remaining urine, irritable bladder
- Neurology: amyotrophic lateral sclerosis, multiple sclerosis, neuralgia, Parkinson's disease, polyneuropathy, restless leg syndrome, increased sensitivity, vegetative dystonia
- HNO: hearing problems, sinusitis, tinnitus
- Psychological affects: bed wetting, depression, concentration difficulties, sleep disturbances, stress
- Skin: Acne, boils, dekubitus, ulcers and gangrene, lupus of erythematoses, psoriasis, burns, sunburn, wound healing, herpes, allergies
- Gynaecology: menstruation complaints, premenstrual syndrome
- Metabolic illnesses: diabetes mellitus types I and II, thyroid problems
- Dentistry: parodontistry, implantology
- Sport Medicine: orthopaedic indications, regeneration in the context of training practices, sleep promotion, muscle strains
- Optometry: blood circulation disorders of the retina, glaucoma
- Veterinary Medicine: movement problems, blood circulation disorders, wound healing, pain, illnesses of the vegetative nervous system

(Source: Physician Weekly Extra April 2000)

You will find further information under the following, very informative Website:  
[www.magnet-resonanz.de](http://www.magnet-resonanz.de)

Magnetic Field Therapy Tested

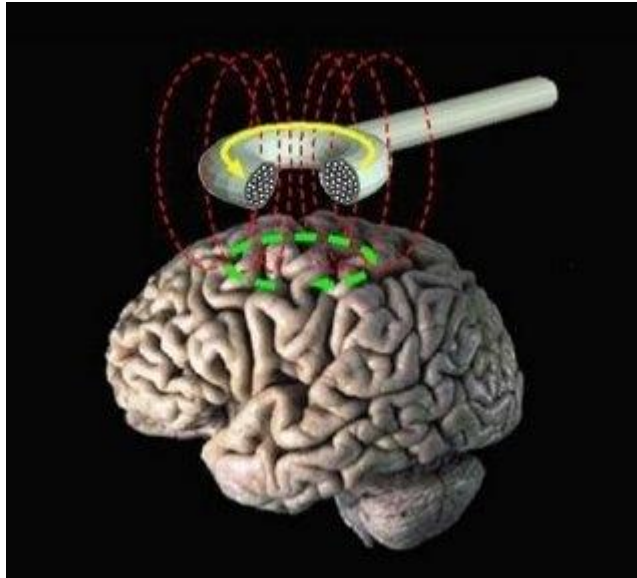
Help or Empty Promises?  
3Sat TV report of 27.5.2004

At the university clinic of Vienna doctors tested the impact of magnetic field therapy.



Physicians and physicists work together to improve the form of therapy. Their first results suggest that the magnetic field devices presently on the market produce very variable magnetic fields (strength and frequency).

<http://www.magnetic-field.info/1195258.htm>



Transcranial magnetic stimulation (TMS)--a safe and noninvasive therapy using a rapidly changing magnetic field to stimulate neurons in the brain--is showing promising results in numerous peer-reviewed studies as a major breakthrough in treating depression in cases that are resistant to any other forms of treatment, including prescription drugs.

## **MAGNETIC FIELD THERAPY**

### **ACTION**

1. Increased blood supply all areas - body & legs

### **BENEFIT**

Reduces Swelling

### **ACTION**

2. New blood vessels (revascularization) form where needed

### **BENEFIT**

Eliminates pain

### **ACTION**

3. Increased circulation of the blood throughout body & legs

### **BENEFIT**

No effect on heart rate or blood pressure

#### **ACTION**

4. 200% increase in oxygen in blood - muscles, tissues skin

#### **BENEFIT**

Injured and inflamed tissues regenerate faster...faster healing

#### **ACTION**

5. Increased oxygen use by all cells in areas treated with pulsating Magnetic Field.

#### **BENEFIT**

Ionic migration = movement of potassium, chloride, calcium, protein through every cell wall.

#### **ACTION**

6. Polarizes in addition to standard polarization, the cell wall/membrane of all cells treated with PMF therapy.

#### **BENEFIT**

Improved energy condition of all cells treated with PMF therapy.

Resistance and body defences against infection and inflammation are optimized.

The extraordinary success of the pulsed magnetic fields is because it improves your circulation so efficiently. The magnetic force stimulates nerve-endings to improve blood flow to injured or swollen joints. It does this by drawing trace elements, for instance, iron, towards the magnets. The human body contains about 5 grams of iron, much of it in the form of haemoglobin which plays a vital role moving oxygen from your lungs around your body. The improvement in blood circulation eases the swelling around injured or deteriorated joints, and thus the pain.

*Cancer cells can be burned up with magnetic pulses  
Cancer can be "burned up" with a new technique that uses magnetic pulses to heat tumour cells until they die. Scientists have found they can surround cancer cells with tiny particles of iron oxide that vibrate when in a magnetic field, causing the cells to heat up.*

*Tests in mice have shown this can raise the temperature of the tumour cells by six degrees above body temperature, around the point when cancer cells start to die.*

*Dr Sam Janes, a clinical cancer scientist at University College London, said: "If you heat cancer cells up to 43 degrees C (109.4F) they start to die. Our natural body temperature is 37 degrees C (89.6F). The technique that we are using, we are able to reach that threshold. [Source](#)*

"Most of the molecules in the human body interact weakly with electromagnetic fields in the radiofrequency or extremely low frequency bands. One such interaction is absorption of energy from the fields, which can cause tissue to heat up; more intense

fields will produce greater heating. "

## **Magnetic Pulser Comparison**

### **Sota Pulser**

■ 6000 Gauss

■ 12 Pulses per min

■ Needs to cool Down after 30 mins uses

■ 360 pulses per session

### **Super Magnetic Pulser Range**

■ 40-75 Pulses per Second

■ Can run for 3 hours continuously

■ 432,000 pulses per session

■ •Recommended as "Strong Magnetic Pulser" and favorite of "Walter Last".\*