Report on the Scientific Efficacy of the Treatment of Multiple Sclerosis using Low Frequency Pulsed Electromagnetic Stimulation Therapy
1 Company & Contact Information

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Purpose of Document

The purpose of this document is to clearly define what low induction electromagnetic stimulation therapy is and the healing effects it has for people with multiple sclerosis.

2 Executive Summary

The Viofor JPS is a highly sophisticated computer driven therapy system, developed by some of the most eminent and respected Professors in the field of energy medicine. It works by installing packets of sophisticated frequencies and patented wave patterns into the body at a cellular level and is not to be confused with unscientifically proven magnets or magnet therapy.

EU-certified as medical apparatus, winner of some of the most prestigious medical innovation awards across Europe (including Eureka Brussels 2005 & Salon International des Inventions Geneva 2004), myriads of clinical trials in various European countries and the USA have shown that significant improvements can be made by people affected by various conditions including of arthritis. To date there has been over 12,000 clinical trials worldwide on magnetic fields and their effect on the human organism.

The reason people wrongly associate our newly launched product into the UK market, to magnet therapy is because that industry is well established in this country, the products are cheap and can therefore be marketed by anyone whether medically trained or not. Whilst there may be some benefit of magnet therapy to people with arthritis, we understand and respect the general scientific communities consensus that there is not enough evidence to support this very “limited” form of therapy. Indeed, our own technicians view this type of therapy as ‘passive’, in other words, all the magnets do is speed up the flow of blood through the body area in contact with the magnet. In contrast, magnetic field energy medicine is an accepted form of study both in the UK and worldwide. There have been countless studies, mostly in mainland Europe and the United States of America, regarding the effect of LFMF on pain relief, and we have numerous scientific papers by eminent scientists to back up our equipment specifically.

The development of pulsating LFMF (low frequency magnetic fields) was until recently restricted due to the lack of technology to deliver the package of complex waves and frequencies at the required speed. The latest micro-chip technology has opened an exciting new world of possibilities with the Viofor JPS using the same powerful microprocessor as used in the state of the art Euro-Jet fighter.
3 Important Note: Electromagnetic Stimulation Therapy in Relation to Magnetic Therapy

Due to the naming of electromagnetic waves in the nineteenth century, there is often some misconception to the layman regarding the relationship between magnetic therapy and electromagnetic stimulation therapy. It is important that the reader distinguishes between these terms. To clarify:

**A magnetic field**: is a static force found in the region around a magnet. Magnetic therapy, of which Viofor JPS is not, purports to use the static fields that a magnet creates. There is little scientific evidence that any healing effects penetrate the human organism to any significant degree, other than aligning the polarity of blood particles to improve blood flow speed.

**An electromagnetic field**: is the field of force associated with electric charge in motion, having both electric and magnetic components and containing a definite amount of electromagnetic energy.

The Viofor JPS system does not contain any solid-state magnets thus the treatments do not employ static magnetic fields in any way. This document explains the science and practice of Low Frequency Magnetic Fields (LFMF) used for therapeutic purposes in many hospitals in mainland Europe.

It is also worth noting that when reading scientific articles relating to low frequency electromagnetic stimulation therapy, it is generally accepted that the words “magnetic field” do in fact refer to LFMF when used in this context and not the static magnetic fields associated with magnet therapy.

4 History of Electromagnetic Stimulation Therapy

In 1821, Hans Christian Oersted, a Danish scientist working in France, experimentally showed that an electrical conductor generated power that affected a compass. At the same time, the Frenchman André Ampère explained that the electrical current generates a magnetic field. In 1864, James Clark Maxwell, a Scottish physicist, formed equations that constituted a scientific foundation for magnetic field theory. All the equipment to generate and use electricity and electromagnetic waves, including the equipment for magneto therapy is designed based on this theory.

Over recent decades, medical attention focused on non-invasive treatment methods and much has been learnt about the impact of electromagnetic fields in the treatment of a wide range of ailments, including injuries and chronic diseases. Along with developments in mathematics, physics and technology has resulted a new generation of medical devices which has significantly widened the effectiveness of variable magnetic fields in medicine. The Viofor JPS System is at the forefront of this new generation.

Developed over the past fifteen years in Europe by the world’s leading authorities in the application of electromagnetic fields in medicine, it is a breakthrough in the treatment of pain and helps to reverse the symptoms of many major conditions.

Conventional electromagnetic therapy systems utilise much higher induction levels with repetitive wave patterns at a set frequency; the high induction levels quickly activate the body’s defence
mechanisms and the body tends to adapt to the repetitive stimulus, reducing the effectiveness of the treatment and bringing the practice of magnetotherapy into disrepute.

In comparison, in electromagnetic stimulation, induction levels are much lower, wave patterns are complex and variable and frequencies are combined to create a complex pattern – thereby generating a slow-changing, low induction magnetic field that is tuned to work with the body’s natural resonating frequencies, speeding up the body’s natural healing process without forcing the body into recovery.

The Viofor JPS is so effective that it is now widely used within the health systems of many European countries, including Germany and France.

5 How Viofor JPS Works

5.1 Magnetostimulation in Rehabilitation

[Professor Tadeusz Mika - Academy of Physiotherapy, Medicine – Physical Education, Warsaw]

In recent years, there has been great interest observed in the therapeutic application of pulsating, extremely low frequency magnetic fields – ELF MF. They are fields of frequency from 3 to 3000 Hz and intensity equivalent to induction = 10 mT. Recently, due to interesting therapeutic results, attention has been drawn to magnetostimulation. It is the term defined by Prof. A. Sieron. We can observe here an analogy to laser therapy, which uses low power radiation, so-called laser biostimulation or low energy laser therapy. Values of magnetic fields used in magnetostimulation are comparable to the Earth field intensity, i.e. 70 μT.

The effect on the living organism is not yet fully explained. Biological effects are said to be due to extremely low currents, so called Lorentz powers, induced in the tissue during pulsating magnetic field flow.

They cause:

- increase in the permeability of semipermeable membranes
- increase in the membrane and/or ion vibration energy
- effect on electrosomatic physiological processes
- effect on neuronal processes by accumulation of very small potentials

There are estimated to approximately 1000 publications on the physiological and clinical aspects of magnetotherapy and magnetostimulation. It is believed that magnetic fields used in magnetotherapy cause:

- Ca2+ penetration into the cell
- stimulation of c AMP formation
- increase in protein absorption
- increase in overall transportation through cell membranes
- stimulation of prostaglandin E formation
- increase of DNA content

As a result, magnetic fields have analgesic, anti-inflammatory and anti-swelling effects. They also increase oxygen utilization and cellular respiration. In addition, they increase blood flow in arteries and capillaries and accelerate wound-healing process.

The above mentioned effects of magnetic fields suggest clearly positive results in rehabilitation, especially in Parkinson’s disease, SM and motor system pain syndromes. Currently, based on Sandyk’s research, it is believed that such effect is due to modulation of neuron activity as well as effect on pineal gland and melatonin secretion. Clinical analysis of the above data by Professor Sieron et al. promises positive effects of magnetic fields application in the above mentioned diseases.

One of the most interesting areas of magnetostimulation is its effect on bone healing. It has been started by Bassett & Becker [1962], who observed in his work the positive effect of magnetic fields
on bone fracture healing. He states that the very weak currents that occur during application on piezoelectric substances, such as collagen, stimulate activity of the hemogenic cells. This mechanism is especially important in case of bone immobilization. Magnetic fields act similarly to mechanical forces produced by muscles and affecting collagen. Incidentally, it has not been established yet whether such effects are the result of magnetotherapy and its effect on system piezoelectricity, or if they are caused by improved blood supply and oxygen distribution.

Consequently, magnetotherapy and magnetostimulation are widely applied in bone fracture treatment and osteoporosis. Analysis of these disease processes by Professor Sieron et al., based on medical records of patients exposed to such therapy, indicated a positive effect of magnetostimulation on the above indicated diseases.

It should be added that there is a modern generator of such fields, which is produced by Med & Life Poland Ltd. under the name of Viofor JPS. Its design is based on the principle of biological system resonance with pulsating magnetic fields. The apparatus automatically generates fields of frequencies resonating with biological objects.

One crucial effect cannot be omitted when analysing therapy with the use of slow-changing magnetic fields, namely, the effect of organism soothing. It makes such form of therapy applicable not only due to its physiological but also psychological considerations. In other words, it is also useful in psychological rehabilitation. It is extremely important in patients, whose stresses are the result of disability or invalidism.

Despite the lack of strict contraindications to such form of therapy, there is a need, however, to be cautious in case of certain diseases. According to comparison by Gruener, contraindications include: pregnancy, active tuberculosis, thyrotoxicosis, acute coronary failure, unstable angina pectoris, serious viral, bacterial and mycotic infections, as well as electronic implants regulating functioning of various organs. Relative contraindications include active neoplastic disease, despite the fact that recent results of research in this area are very promising.

Data on certain mechanisms of pulsating magnetic field effect on organisms, especially its resonance action, as well as indications, show that it is a method of physical medicine of 21 century with great prospects for the future. One of its main benefits is the possibility to limit medication, especially non-steroid anti-inflammatory medicines, whose long-term application may affect digestive system.

Bibliography:

8. Warnke U.: Der Mensch und die 3 Kraft (elektromagnetische Wechselwirkung) POP Acad Verl Saarbruecken 1992

5.2 Design Parameters of the JPS Viofor System

Report By: Prof. ZW. (dr hab.) Feliks Jaroszyk
Karol Marcinkowski Medical Academy – Poznan Poland
Electromagnetic fields, between frequencies of 0 Hz to 1000 Hz, are called ELF (extremely low frequency).

Electromagnetic waves of this frequency cause neither ionisation nor induction.

For ELF fields it is advisable to treat electric and magnetic fields separately.

Variable magnetic fields, contrary to variable electric fields, are characterized by low suppression coefficient when interacting with biological objects. Due to this fact, magnetic fields are used in medicine (magnetotherapy, magnetostimulation).

In magnetotherapy magnetic field induction is approximately a thousand times higher than the induction of magnetic field used in magnetostimulation.

Biological action of variable magnetic field is the result of three basic effects:

1. Electrodynamic interaction of this field with ionic currents in organism.
2. Ionic cyclotron resonance of cations and anions in bodily fluids.
3. Magneto-mechanical interaction of the magnetic field with particles with uncompensated magnetic spins.

It should be noted that bodily fluids, namely: blood, lymph and intercellular fluid are ionic conductors of the electric current.

The new system VIOFOR JPS uses both types of electrical signals (including magnetic) and their combinations in order to utilize the three above-mentioned basic mechanisms of variable magnetic field absorption by living organisms.

In the MRS 2000 system, developed based on the research by Prof. Ulrich Warnke, only one type of electrical signal was used. The ionic cyclotron resonance mechanism activating ion transport through cell membranes was not used.

Above-mentioned mechanisms: electodynamic, magneto-mechanical and ionic cyclotron resonance, are involved in interaction with liquid crystalline structures, which are the component of many membranes and cell organelles. Such interaction causes changes in ion permeability through ion channels. The change occurs in the ion distribution intra-and extracellularly. It causes changes in static potential differences within both organelles and cell membranes of living biological systems.

VIOFOR JPS equipment, in its application, meets the requirement of simultaneous functioning of three (1,2,3) mechanisms of interaction of variable magnetic field with the living organism. Compared with previous magnetostimulation methods, it causes increased ion transport in cell membranes and organelles.

This way, VIOFOR JPS turns magnetostimulation development in a new direction and is viewed as an indisputable success of Polish science and technology.
5.3 Requirements for the Safe Application of Magnetic Fields In Medicine

The development of medical application of variable magnetic fields has been very dynamic recently. Apart from indications regarding the application of magnetic fields, the most important aspect for now is the need for safety requirements both for patients and medical personnel. The information presented below on the safe application of magnetic fields comes from scientific literature and from personal, clinical experience of the authors of the present article, who have used magnetic fields for 15 years in hospital and clinical treatments.

The safety requirements for the application of magnetic fields in medicine include:

- patient and personnel protection against electric shock
- protection of operators of magnetotherapy and magnetostimulation equipment against harmful effect of magnetic field
- contraindications of magnetic field application for certain diseases
- contra-indications due to possibility of side effects

The Viofor equipment has no danger of electric shock. Electric current transformation inside the equipment for magnetostimulation is such that, even in case of coil perforation and short-circuit with the patient's body, it will not be harmful.

In typical circumstances, the harmful exposure of the operators of magnetotherapy and magnetostimulation equipment to magnetic fields is minimal. This is due to the fact that magnetic field induction decreases hyperbolically with the distance from the source. Therefore, the exposure of equipment operators to magnetic field occurring during manual parameter setting and pushing the start button is irrelevant from a medical point of view. Additionally, modern equipment can be operated through the remote control, which completely eliminates the operator's exposure to magnetic field.

The safety of magnetic field effect, similarly to other physical aspects and pharmaceuticals applied in medicine, is the derivative of:

- known negative effect
- possible negative effect
- lack of knowledge of negative effect

The possibility of application of magnetic field in medicine is the result of basic biological effects that are the subject of clinical and experimental research. They include the following effect:

- analgesic
- improvement of tissue oxygen utilization
- vasodilatation
- regeneration
- relaxation
- antispasticity

The mechanisms of biological effect of magnetic fields influence the potential side effects of their use.

The possibility of negative effect of magnetic field on human body has to include the contraindications that are most often described in medical literature:

- pregnancy
- neoplastic disease
- active tuberculosis
- juvenile diabetes
- alimentary tract bleeding
- serious viral, bacterial and mycotic infections
- electronic implants
- metal implants
6 Manufacturers Information

6.1 About Med & Life

Med & Life is the manufacturer and distributor of Viofor JPS

Company Name: Med & Life Sp. z o.o.
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Managing Director: Irena Osiak

6.2 Med & Life and the Viofor JPS System

Med & Life Poland Ltd has been promoting magnetostimulation in Poland for several years. Scientific and clinical research have been conducted in order to analyze the influence of slow-changing magnetic fields generated by MRS 2000 on living matter. Magnetic field induction generated by MRS 2000 is slightly larger than the horizontal component induction of geomagnetic field. Med & life Poland Ltd. has invited renowned Polish specialists to its Scientific Board that coordinates scientific and clinical research programs.

The member of the Board are, in the alphabetical order. Assistant Professor Stainslaw Grabiec Ph.D. (biophysics – Polish Academy of Sciences, Warsaw), Prof. Feliks Jaroszyk (biophysics – Medical Academy, Poznan), Prof. Tadeusz Mika (physiotherapy, medicine – Academy of – Physical Education, Warsaw), Prof. Janusz Paluszak (physiology, medicine – Medical Academy, Poznan), and Prof. of Medical Science Aleksander Sieron (medicine, physical medicine – Slask Medical Academy, Katowice.) Three times a year, members of the Scientific board give plenary lectures at State symposiums for doctors and physiotherapists dealing with scientific and clinical research in magnetostimulation.

The results of the research have laid grounds for further development of equipment for magnetostimulation as well as its methods of application.

We can state that the period of research with the use of MRS 2000 has also been a “prenatal” stage of the new method and its apparatus, later known as VIOFOR JPS.

At this point, it is important to stress that VIOFOR JPS is the pioneer in the field of the new generation equipment for magnetostimulation. Although it utilizes technology of MRS 2000 (mainly in method of application) it differs greatly from its predecessor.

The abbreviation JPS is formed from initials of the authors of magnetostimulation method (Jaroszyk, Paluszak, Professor Sieron) which was further used in the generating-steering apparatus VIOFOR JPS.

Best polish specialists in electronics have participated in design and build of VIOFOR JPS. Prof. Janusz Paluszak, and Prof. Aleksander Sieron represent both general and clinical science.

Prof. Janusz Paluszak has thoroughly analyzed JPS signals and their biochemical-physiology influence on a living organism.
Prof. Aleksander Sieron has presented application methods of JPS signals and has thoroughly analyzed clinical aspects of their influence on a living organism.

Mr. Waldemar Deka, P.Eng., M.Sc., has supervised the project and design of the apparatus generating signals according to JPS method.

Mr. Jaroslaw Osiak, Vice-President of Med & Life has also been deeply involved in the development of VIOFOR JPS apparatus.

VIOFOR JPS system consisting of the apparatus and the magnetostimulation method of its application has been prepared for patenting according to regulations and requirements of Polish patent Bureau.

6.3 Product Certifications

**CE 0120**

MDD 93/42/EEC - certificate of conformity with the demands of European Union Directive on medical devices, allowing Viofor JPS System to be CE 0120 marked.

**EC conformity** for therapy and rehabilitation:

- Viofor JPS System Standard with magnetic field, with or without light source (medical product class IIa – Annex IX, Rule 9)
- Viofor JPS System Classic with magnetic field, with or without light source (medical product class IIa – Annex IX, Rule 9)
- Viofor JPS System Clinic with magnetic field, with or without light source (medical product class IIa – Annex IX, Rule 9)
- Viofor JPS System Delux with magnetic field, with or without light source (medical product class IIa – Annex IX, Rule 9)
- Viofor JPS System Light with light source, with or without magnetic field (medical product class IIa – Annex IX, Rule 9)
- Viofor JPS System Laser with or without magnetic field (medical product class IIb – Annex IX, Rule 9)

conform to the essential requirements and the guidelines of the Council Directive 93/42/EEC – Medical Devices and with harmonized standards:
- EN IEC 60601-1 “Medical electrical equipment” with the supplements and linked standards

Med & Life has implemented the Quality Management System according to ISO 9001: 2000/ ISO 13485: 2003 under the surveillance of the Notified Body nr 0120, SGS United Kingdom Ltd Systems & Services Certification.

6.4 Product Awards
The Viofor JPS System has won many awards and honours in Poland as well as abroad. We present the most important of them:

- **Polish Product of the Future 2000**
  award in category: product of the future for Viofor JPS System

- **Award in category: rehabilitation equipment**
  for Viofor JPS system on VII Rehabilitation Equipment and Equipment for Disabled Persons Fairs “Rehabilitacja” in Lodz.

- **Polish Invention of the Year 2000**
  for magnetostimulation JPS method, awarded by World Foundation Health-Mind-Health and International Awards Capitule

- **Gold medal**
  during the 50 World Exhibition of Inventions, Research and New Technologies „Brussels Eureka”2001 in Brussels

- **Gold medal**
  during 101 World Salon of Inventions „Concours Lepine” in Paris

- **Gold medal**
  on the fairs „Ideas-Inventions-News” IENA 2002 in Nurnberg

- **Gold medal**
  on International Fairs of Inventions and New Technologies „Invest-Technology” in Warsaw

- **Medal**
  on the fairs „INTARG-Katowice 2002”

- **Main prize in the competition Polish Product of the Future 2002**

- **Gold medal with merit**
  on international exhibition INNOWACJE 2003

- **silver medal**
  on the International Exhibition of Inventions 2004 in Geneve

- **Golden Aesculapius**
  on Poznan International Fairs SALUS’2004

- **gold medal**

- **silver medal**
7 Scientific Trials – Articles Specifically Relating to Viofor JPS in the Treatment of Multiple Sclerosis

7.1 Effect of variable magnetic field on motor impairment and quality of life in patients with multiple sclerosis

Wiadomosci Lekarskie, Warsaw, Poland. 2002;55(3-4):136-43
PMID: 12181997 [PubMed - indexed for MEDLINE]
Brola W, Wegrzyn W, Czernicki J.

Modern treatment of multiple sclerosis (SM) takes into consideration the current stage of the disease, symptomatic treatment and modification of the course of the disease. The most promising method of management is immunotherapy. It is, however, effective only in some cases, in patients with low degree of disability, and it is rather expensive. In view of some recent reports concerning the possibility of utilisation of variable magnetic fields in the treatment of SM, the study was undertaken to evaluate the effectiveness of impulses generated by magnetic field obtained by means of VIOFOR JPS stimulator. The study was carried out on 76 subjects with long-term history of clinically confirmed SM. The mean duration of the disease was 8.5 years, and the mean age of the patients 37.8 years. The patients were divided into two groups: the study group and the controls. In the study group the patients were exposed to magnetic fields generated by VIOFOR JPS. Magnetic stimulation was not applied in the control group. The progress of the disease according to EDDS and the quality of life according to Testa and Simonson Questionnaire were assessed on admission and after 21 days of stimulation. No significant differences between the groups were found with respect to motor impairment evaluated using the EDDS score (6.2 at the beginning of the study and 5.1 after 21 days; in the control group --6.1 and 5.6, respectively). The quality of life was found to be significantly better in the group exposed to magnetic field stimulation than in the controls (p < 0.01). Particular variables contributing to the physical, psychological and social component of quality of life were analysed in detail. The most significant difference was observed with respect to the improvement of mental condition of the patients (alleviation of depression, elimination of anxiety, better emotional control), as well as to the decrease of muscle tone, dysaesthesia and painful sensations. No side effects were observed in any of the cases. The obtained effects encourage us to recommend magnetic stimulation as a method supplementing symptomatic treatment of patients with multiple sclerosis.

7.2 Successful treatment of multiple sclerosis with magnetic fields

PMID: 1305621 [PubMed - indexed for MEDLINE]
Sandyk R., NeuroCommunication Research Laboratories, Danbury, CT 06811.

The present communication concerns a 50 year-old woman with a 15 year history of chronic-progressive multiple sclerosis (MS) in whom extracranial application of picoTesla magnetic fields (MF) produced a dramatic and sustained improvement in disability. In contrast, administration of melatonin (3 mg, P.O.) produced in this patient a rapid exacerbation of disability which was reversed subsequently by treatment with MF. It is hypothesized that the therapeutic effects of picoTesla MF involve the mediation of the pineal gland which is known to act as a magnetosensor. The report demonstrates, for the first time, the remarkable efficacy of weak MF in the symptomatic treatment of chronic-progressive MS and underscores the pivotal role of the pineal gland in the pathophysiology of MS. If confirmed by a larger cohort of patients, extracranial application of picoTesla MF may prove as an extremely efficacious, nonpharmacological modality for the treatment of MS.
7.3 Successful treatment of an acute exacerbation of multiple sclerosis by external magnetic fields.

PMID: 8083029 [PubMed - indexed for MEDLINE]  
Sandyk R, Derpapas.  
NeuroCommunication Research Laboratories, Danbury, CT 06811.

A 55 year old woman with multiple sclerosis presented with a 5 week history of an exacerbation of symptoms. Prominent among these symptoms was trigeminal neuralgia, migraine headaches, blurring of vision, and ataxia of gait. While treatment with carbamazepine (Tegretol) (800 mg/d) and oral prednisolone (15 mg/d) over a 4 week period produced no improvement in symptoms, externally applied magnetic fields (MF) (7.5 picoTesla; 5 Hz) placed over the scalp for a 7 minute period on three different days resulted in a complete resolution of symptoms within two weeks of initiation of treatment. Partial relief of the neuralgic pain and headaches was obtained immediately after completion of the first treatment indicating that resolution of symptoms was related to the effects of MF and not to a spontaneous remission. This is the first report demonstrating the clinical efficacy of pico Tesla range MF in rapidly resolving an acute relapse of MS.

7.4 Resolution of longstanding symptoms of multiple sclerosis by application of picoTesla range magnetic fields.

PMID: 8063544 [PubMed - indexed for MEDLINE]  
Sandyk R, Iacono RP.  
NeuroCommunication Research Laboratories, Danbury, CT 06811.

Recent clinical reports have suggested that treatment with extremely weak magnetic fields (MF) in the picoTesla range is an efficacious modality for the symptomatic therapy in patients with multiple sclerosis (MS) during the remission and exacerbation periods of the disease. The present communication concerns a 64 year old woman with a 22 year history of MS of the chronic-progressive type who presented with a longstanding history of ataxia of gait, weakness in the legs, difficulties with swallowing, loss of bladder control, blurred vision, diplopia, chronic fatigue, and cognitive impairment. In this patient two 30 minute treatments with MF on two separate days resulted in a dramatic improvement of symptoms. Specifically, the patient experienced marked improvement in balance and gait as well as increased strength in the legs to the extent that she was able to abandon the use of a walker within 48 hours after initiation of magnetic treatment. In addition, there was complete resolution of diplopia, bladder dysfunction, and fatigue with improvement in mood and cognitive functions. The report attests to the unique efficacy of extremely weak MF in the symptomatic treatment of patients with MS including those patients with a chronic progressive course of the disease and supports the hypothesis that dysfunction of synaptic conductivity due to neurotransmitter deficiency specifically of serotonin rather than demyelination underlies the neurologic deficits of the disease.

7.5 Progressive cognitive improvement in multiple sclerosis from treatment with electromagnetic fields.

PMID: 9134447 [PubMed - indexed for MEDLINE]  
Sandyk R.,Department of Neuroscience, Touro College, Dix Hills, NY 11746, USA.

It has long been recognized that cognitive impairment occurs in patients with multiple sclerosis (MS) particularly among patients with a chronic progressive course. MS is considered a type of "subcortical dementia" in which cognitive and behavioral abnormalities resemble those observed in patients with a frontal lobe syndrome. The Bicycle Drawing Test is employed for the neuropsychological assessment of cognitive impairment specifically that of mechanical reasoning.
and visuographic functioning. It also provides clues concerning the patient's organizational skills which are subserved by the frontal lobes. Extracerebral pulsed applications of picotesla flux intensity electromagnetic fields (EMFs) have been shown to improve cognitive functions in patients with MS. I present three patients with long standing symptoms of MS who, on the initial baseline, pretreatment Bicycle Drawing Test, exhibited cognitive impairment manifested by omissions of essential details and deficient organizational skills. All patients demonstrated progressive improvement in their performance during treatment with EMFs lasting from 6-18 months. The improvement in cognitive functions, which occurred during the initial phases of the treatment, was striking for the changes in organizational skills reflecting frontal lobe functions. These findings demonstrate that progressive recovery of cognitive functions in MS patients are observed over time through continued administration of picotesla flux intensity EMFs. It is believed that the beneficial cognitive effects of these EMFs are related to increased synaptic neurotransmission and that the progressive cognitive improvement noted in these patients is associated with slow recovery of synaptic functions in monoaminergic neurons of the frontal lobe or its projections from subcortical areas.


PMID: 8727686 [PubMed - indexed for MEDLINE]
Sandyk R., NeuroCommunication Research Laboratories, Danbury, CT 06811, USA.

Electrophysiological studies in behaving animals have shown the function of cerebral serotonin (5-HT) neurons to be altered in association with motor output in both the tonic and repetitive modes and also in relation to an orienting response. Brainstem 5-HT neurons increase their firing rate two to five-fold during repetitive motor activity to facilitate motor output while simultaneously suppressing transmission in sensory pathways. Reciprocally, during an orienting response motor activity is suppressed and 5-HT neuronal activity is inhibited to facilitate transmission of sensory information. These reciprocal changes in 5-HT neuronal activity serve to facilitate brainstem reticular sensory-motor integration which, due to 5-HT neurotransmission deficiency, may be disrupted in patients with multiple sclerosis (MS). For instance, MS patients are unable to process auditory information in the presence of competing ambient stimuli, while under a controlled laboratory environment they demonstrate unimpaired verbal information processing. This report concerns three MS patients who experienced rapid deterioration in balance resulting in falling when subjected, during ambulation, to distracting external auditory stimuli. After receiving a series of treatments with low frequency picotesla range intensity electromagnetic fields (EMFs), which were applied extracranially for brief periods, these patients experienced resolution of these symptoms with ambulation being unaffected by auditory stimuli. It is suggested that application of picotesla EMFs may restore abnormal reticular sensory-motor integration in MS patients with the effect being related to facilitation of 5-HT neurotransmission at both junctional (synaptic) and nonjunctional neuronal target sites.

7.7 Treatment with electromagnetic fields reverses the long-term clinical course of a patient with chronic progressive multiple sclerosis.

PMID: 9352426 [PubMed - indexed for MEDLINE]
Sandyk R., Department of Neuroscience, Touro College, Dix Hills, NY 11746, USA.

It is estimated that 10-20% of patients with multiple sclerosis (MS) have a chronic progressive (CP) course characterized by an insidious onset of neurological deficits followed by steady progression of disability in the absence of symptomatic remission. To date no therapeutic modality has proven effective in reversing the clinical course of CP MS although there are indications that prolonged treatment with picotesla electromagnetic fields (EMFs) alters the clinical course of patients with CP MS. A 40 year-old woman presented in December of 1992 with CP MS with symptoms of spastic paraplegia, loss of trunk control, marked weakness of the upper limbs with loss of fine and gross motor hand functions, severe fatigue, cognitive deficits, mental depression, and autonomic
dysfunction with neurogenic bladder and bowel incontinence. Her symptoms began at the age of 18 with weakness of the right leg and fatigue with long distance walking and over the ensuing years she experienced steady deterioration of functions. In 1985 she became wheelchair dependent and it was anticipated that within 1-2 years she would become functionally quadriplegic. In December of 1992 she began experimental treatment with EMFs. While receiving regularly weekly transcortical treatments with AC pulsed EMFs in the picotesla range intensity she experienced during the first year improvement in mental functions, return of strength in the upper extremities, and recovery of trunk control. During the second year she experienced the return of more hip functions and recovery of motor functions began in her legs. For the first time in years she can now initiate dorsiflexion of her ankles and actively extend her knees voluntarily. Over the past year she started to show signs of redevelopment of reciprocal gait. Presently, with enough function restored in her legs, she is learning to walk with a walker and is able to stand unassisted and maintain her balance for a few minutes. She also regained about 80% of functions in the upper limbs and hands. Most remarkably, there was no further progression of the disease during the 4 years course of magnetic therapy. This patient's clinical recovery cannot be explained on the basis of a spontaneous remission. It is suggested that pulsed applications of picotesla EMFs affect the neurobiological and immunological mechanisms underlying the pathogenesis of CP MS.

7.8 Therapeutic effects of alternating current pulsed electromagnetic fields in multiple sclerosis.

Sandyk R., Department of Neuroscience, Institute for Biomedical Engineering and Rehabilitation Services of Touro College, Dix Hills, New York, USA.

Multiple sclerosis is the third most common cause of severe disability in patients between the ages of 15 and 50 years. The cause of the disease and its pathogenesis remain unknown. The last 20 years have seen only meager advances in the development of effective treatments for the disease. No specific treatment modality can cure the disease or alter its long-term course and eventual outcome. Moreover, there are no agents or treatments that will restore premorbid neuronal function. A host of biological phenomena associated with the disease involving interactions among genetic, environmental, immunologic, and hormonal factors, cannot be explained on the basis of demyelination alone and therefore require refocusing attention on alternative explanations, one of which implicates the pineal gland as pivotal. The pineal gland functions as a magnetoreceptor organ. This biological property of the gland provided the impetus for the development of a novel and highly effective therapeutic modality, which involves transcranial applications of alternating current (AC) pulsed electromagnetic fields in the picotesla flux density. This review summarizes recent clinical work on the effects of transcranially applied pulsed electromagnetic fields for the symptomatic treatment of the disease.

7.9 Treatment with electromagnetic fields reverses the long-term clinical course of a patient with chronic progressive multiple sclerosis.

Sandyk R., Department of Neuroscience, Touro College, Dix Hills, NY 11746, USA.

It is estimated that 10-20% of patients with multiple sclerosis (MS) have a chronic progressive (CP) course characterized by an insidious onset of neurological deficits followed by steady progression of disability in the absence of symptomatic remission. To date no therapeutic modality has proven effective in reversing the clinical course of CP MS although there are indications that prolonged treatment with picotesla electromagnetic fields (EMFs) alters the clinical course of patients with CP MS. A 40 year-old woman presented in December of 1992 with CP MS with symptoms of spastic paraplegia, loss of trunk control, marked weakness of the upper limbs with loss of fine and gross motor hand functions, severe fatigue, cognitive deficits, mental depression, and autonomic dysfunction with neurogenic bladder and bowel incontinence. Her symptoms began at the age of 18.
with weakness of the right leg and fatigue with long distance walking and over the ensuing years she experienced steady deterioration of functions. In 1985 she became wheelchair dependent and it was anticipated that within 1-2 years she would become functionally quadriplegic. In December of 1992 she began experimental treatment with EMFs. While receiving regularly weekly transcortical treatments with AC pulsed EMFs in the picotesla range intensity she experienced during the first year improvement in mental functions, return of strength in the upper extremities, and recovery of trunk control. During the second year she experienced the return of more hip functions and recovery of motor functions began in her legs. For the first time in years she can now initiate dorsiflexion of her ankles and actively extend her knees voluntarily. Over the past year she started to show signs of redevelopment of reciprocal gait. Presently, with enough function restored in her legs, she is learning to walk with a walker and is able to stand unassisted and maintain her balance for a few minutes. She also regained about 80% of functions in the upper limbs and hands. Most remarkably, there was no further progression of the disease during the 4 years course of magnetic therapy. This patient's clinical recovery cannot be explained on the basis of a spontaneous remission. It is suggested that pulsed applications of picotesla EMFs affect the neurobiological and immunological mechanisms underlying the pathogenesis of CP MS.

8 Scientific Articles – General Trials Relating to the Therapeutic and Analgesic Effects of Low Frequency Electromagnetic Fields

8.1 Double-blind study of pulsing magnetic field effects on multiple sclerosis.

PMID: 9395691 [PubMed - indexed for MEDLINE]
Richards TL, Lappin MS, Acosta-Urquidi J, Kraft GH, Heide AC, Lawrie FW, Merrill TE, Melton GB, Cunningham CA., Department of Radiology, University of Washington, Seattle, USA.

We performed a double-blind study to measure the clinical and subclinical effects of an alternative medicine magnetic device on disease activity in multiple sclerosis (MS). The MS patients were exposed to a magnetic pulsing device (Enermed) where the frequency of the magnetic pulse was in the 4-13 Hz range (50-100 milliGauss). A total of 30 MS patients wore the device on preselected sites between 10 and 24 hours a day for 2 months. Half of the patients (15) randomly received an Enermed device that was magnetically inactive and the other half received an active device. Each MS patient received a set of tests to evaluate MS disease status before and after wearing the Enermed device. The tests included (1) a clinical rating (Kurtzke, EDSS), (2) patient-reported performance scales, and (3) quantitative electroencephalography (QEEG) during a language task. Although there was no significant change between pretreatment and posttreatment in the EDSS scale, there was a significant improvement in the performance scale (PS) combined rating for bladder control, cognitive function, fatigue level, mobility, spasticity, and vision (active group -3.83 +/- 1.08, p < 0.005; placebo group -0.17 +/- 1.07, change in PS scale). There was also a significant change between pretreatment and posttreatment in alpha EEG magnitude during the language task recorded at various electrode sites on the left side. In this double-blind, placebo-controlled study, we have demonstrated a statistically significant effect of the Enermed magnetic pulsing device on patient performance scales and on alpha EEG magnitude during a language task.
8.2 Treatment of spasticity with repetitive magnetic stimulation; a double-blind placebo-controlled study.

PMID: 9050361 [PubMed - indexed for MEDLINE]  
Nielsen JF, Sinkjaer T, Jakobsen J.  
Department of Neurology, Aarhus University Hospital, Denmark.

The effect of repetitive magnetic stimulation on spasticity was evaluated in 38 patients with multiple sclerosis in a double-blind placebo-controlled study. One group was treated with repetitive magnetic stimulation (n = 21) and the other group with sham stimulation (n = 17). Both groups were treated twice daily for 7 consecutive days. Primary end-points of the study were changes in the patients' self-score, in clinical spasticity score, and in the stretch reflex threshold. The self-score of ease of daily activities improved by 22% (P = 0.007) after treatment and by 29% (P = 0.004) after sham stimulation. The clinical spasticity score improved 3.3 +/- 4.7 arbitrary unit (AU) in treated patients and 0.7 +/- 2.5 AU in sham stimulation (P = 0.003). The stretch reflex threshold increased 4.3 +/- 7.5 deg/s in treated patients and 3.8 +/- 9.7 deg/s in sham stimulation (P = 0.001). The data presented in this study supports the idea that repetitive magnetic stimulation has an antispastic effect in multiple sclerosis. Future studies should clarify the optimal treatment regimen.

8.3 Effects of a pulsed electromagnetic therapy on multiple sclerosis fatigue and quality of life: a double-blind, placebo controlled trial.

PMID: 12868251 [PubMed - indexed for MEDLINE]  
Lappin MS, Lawrie FW, Richards TL, Kramer ED.  
Energy Medicine Developments, (North America), Inc., Burke, Va., USA.

CONTEXT: There is a growing literature on the biological and clinical effects of pulsed electromagnetic fields. Some studies suggest that electromagnetic therapies may be useful in the treatment of chronic illnesses. This study is a follow-up to a placebo controlled pilot study in which multiple sclerosis (MS) patients exposed to weak, extremely low frequency pulsed electromagnetic fields showed significant improvements on a composite symptom measure. OBJECTIVE: To evaluate the effects of a pulsed electromagnetic therapy on MS related fatigue, spasticity, bladder control, and overall quality of life. DESIGN: A multi-site, double-blind, placebo controlled, crossover trial. Each subject received 4 weeks of the active and placebo treatments separated by a 2-week washout period. SETTING: The University of Washington Medical Center in Seattle Wash, the Neurology Center of Fairfax in Fairfax, Va, and the headquarters of the Multiple Sclerosis Association of America in Cherry Hill, NJ. SUBJECTS: 117 patients with clinically definite MS. INTERVENTION: Daily exposure to a small, portable pulsing electromagnetic field generator. MAIN OUTCOME: The MS Quality of Life Inventory (MSQLI) was used to assess changes in fatigue, bladder control, spasticity, and a quality of life composite. RESULTS: Paired t-tests were used to assess treatment differences in the 117 subjects (81% of the initial sample) who completed both treatment sessions. Improvements in fatigue and overall quality of life were significantly greater on the active device. There were no treatment effects for bladder control and a disability composite, and mixed results for spasticity. CONCLUSIONS: Evidence from this randomized, double-blind, placebo controlled trial is consistent with results from smaller studies suggesting that exposure to pulsing, weak electromagnetic fields can alleviate symptoms of MS. The clinical effects were small, however, and need to be replicated. Additional research is also needed to examine the possibility that ambulatory patients and patients taking interferons for their MS may be most responsive to this kind of treatment.
8.4 Magnetostimulation in Pain Medicine


Summary
Physical management in terms of analgesic action is used by means of several mechanical and physical methods. Slow alternating magnetic field magnetostimulation with very low magnetic induction is one of very interesting methods. Advantageous biological effects of these magnetic fields acting on live organism, broaden its use in physiotherapy and caused its use in pain medicine. In the publications there are shown the results of investigation indicating increase of blood flow and decrease of muscle tension during the magnetostimulation. These effects caused usage of magnetostimulation for managing the pain syndromes common in the course of many nervous, bone-and-joint, blood and metabolic diseases. Occurrence of the special resonance frequencies connected with the acting of alternating magnetic fields on biological objects, is a background of the ionic cyclotron resonance theory. Polish scientists, authors of this method, conducted comprehensive biotechnical and clinical analysis of the original Viofor JPS device in which one can use electrodynamic effect of alternating magnetic field on body ions currents, ionic cyclotron resonance of cations and anions of the body fluids and magnetomechanic action of magnetic fields on particles with non-compensated magnetic spins. Because of theses effects it come to changes in distribution of ions in intra- and extracellular compartments and differentiations of quiescent potentials. These cause advantageous increase of ion transport in cellular membranes and organellas. 5 years experience of the authors with managing the chronic pain patients with Viofor JPS device, was presented in short review of acquired analgesic effects, emphasising algesiologic action of magnetostimulation.

8.5 Analysis of the Therapeutic Efficacy of Magnetostimulation provided by Viofor JPS System in Selected Diseases

[Aleksander Sieroń, Karolina Sieroń-Stoltny, Tomasz Biniszewicz, Agala Stanek, Tomasz Stoltny, Katarzyna Biniszewicz

Summary
The authors analysed anonymous inquiries filled by patients after having completed magnetostimulation with support of Viofor JPS system, characterized with maximal magnetic field induction up to 45µT. The analysed group consisted of 69% patients with disorders of movement system, 25% patients with neurological disorders and per 1% of patients with neurosis, insomnia, night urination, asthma, skin allergies and paranasal sinusitis. Improvement or retreat of complaints was noted by 89-100% of patients with disorders of movement system, 25% patients with neurological disorders and per 1% of patients with neurosis, insomnia, night urination, asthma, skin allergies and paranasal sinusitis. Improvement or retreat of complaints was noted by 89-100% of patients with disorders of movement system (particularly in subgroup with osteoarthritis) and by 90-99% of patients with neurological disease (particularly in subgroup with parkinosnian syndromes). The main evidence of improvement was the diminution or retreat of pain and improvement of range of movements in painful joints and paretic limbs.
The study of over 3,000 patients covered a variety of diseases. Those relating to arthritis, (1,296 patients) are presented in the excerpt below:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number of Patients</th>
<th>Complete Remission (%)</th>
<th>Substantial Improvement (%)</th>
<th>Improvement (%)</th>
<th>Lack of Improvement (%)</th>
<th>Deterioration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis of the spine</td>
<td>702</td>
<td>21</td>
<td>51</td>
<td>21</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Arthritis of the hip</td>
<td>259</td>
<td>23</td>
<td>49</td>
<td>25</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>44</td>
<td>-</td>
<td>34</td>
<td>55</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>Inflammation of soft tissue around the joints</td>
<td>61</td>
<td>39</td>
<td>35</td>
<td>23</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Arthritis causing atrophy of the spine</td>
<td>13</td>
<td>-</td>
<td>61</td>
<td>39</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>55</td>
<td>2</td>
<td>40</td>
<td>53</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Bone fractures</td>
<td>64</td>
<td>31</td>
<td>47</td>
<td>22</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Movement impairment (without bone fracture)</td>
<td>98</td>
<td>56</td>
<td>34</td>
<td>9</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 4: Subjective evaluation of the efficacy of the treatment by the patients completing questionnaires suffering from movement impairments after conclusion of magnetostimulation treatment using Viofor JPS.

8.6 Estimation of Clinical Efficacy of Viofor JPS System Magnetic & Light Therapy – Device For Magnetostimulation Connected With Light Energy In The Treatment Of Degenerative And Inflammatory Diseases Of Joints

Summary
The aim of this study was to estimate a clinical efficacy of Viofor JPS System Magnetic & Light Therapy-device for magnetostimulation connected with light energy used as monotherapy in the treatment of patients suffering from degenerative and inflammatory diseases of joints, and the comparison of different magnetic-light applicators using red (wavelength: 840-860mm) and infrared (wavelength: 625-635mm) light generated by diodes LED in the treatment of particular diseases. In this trial 32 patients of both sex with pain syndromes in the course of coxarthrosis (16 patients), gonorartitis (8 patients) and rheumatoid arthritis of carpometacarpal articulation of thumb (8 patients) were treated. In the therapy elliptic magnetic-light applicators were used generating variable magnetic field with saw-like shape of impulse and mean induction value of 53.4 μT as well as light with energy density of 8.18 and 1.64 J/cm², respectively. The therapeutic cycle consisted of 10 daily exposures lasting 12 minutes each (program – P2, mode of application – M2, intensity – 6). As a result of performed procedures in all diseases a distinct reduction of pain intensity estimated by means of Husskinson’s visual-analog scale VAS persisting in case of superficially located joints also in 5th day after the end of exposure cycle was observed. The strongest and the most persistent analgesic effect was obtained using magnetic-light applicators generating infrared light, especially in case of gonarthrosis and arthritis of carpometacarpal articulation of thumb.

8.7 Evaluation of Magnetostimulation Effectiveness in Physiotherapy

The anonymous questionnaires which had been filled in by patients were analysed after the end of the magnetostimulation applied with Viofor JPS. The applicator in form of a mattress with maximum induction 45μT was used. In the analysed group of 1742 patients, 5% pf patients suffered from rheumatoid arthritis, 16% from central nervous system illnesses, 9% from injuries, 1.5% from allergies, 2% from infections, 5.4% from vessel illnesses, 1% from skin illnesses. 0.5% of the patients used monotherapy. 8% suffered from radicular symptoms, 30.7% from pseudoradiculat symptoms, 17.4% from arthrosis, and 3.4% patients suffered from migraines and headaches. The complete abatement of complaints or the improvement was noted in 95.5% of patients, no improvement in 4.3% and 0.2% of patients became worse – 82% of deterioration patients were the ones that suffered from infections. The strongest analgesic action and the most frequent abatement were noted in patients after injuries and patients with headaches.
9 Testimonials (Multiple Sclerosis)

Mrs J H - Lancashire

I have had M.S. for thirty years and tried many different therapies and so called miracle cures along the way without any real or lasting benefit.

In the middle of 2004 I started to use a Viofor magnetic stimulation bed and have found it to be very beneficial.

After going on the bed I always feel as if I have more energy and oxygen in my body. Additionally it helps with bodily functions, which any one with MS knows is an absolute blessing.

I am suffering from repetitive strain syndrome in my shoulder from wheeling my chair at the moment and intend to go on the bed again to get it sorted out.

This equipment is worthy of recommendation to any one with M.S.

Mrs J – Lancashire

I have had MS for 6 years and have been diagnosed as Primary Progressive.

When I first had Viofor magnetostimulation therapy, I used to have to walk with a stick to get into the clinic.

After 12 months of treatment, I walk in unaided. The treatment is very gentle and I always feel good afterwards.

My levels of fatigue have improved by 70% and my sleeping has also improved.

The increased oxygen helps with leg cramps, always much calmer after treatment. It also helps my low back pain from sitting in a wheel chair.

I now feel like a new person and all of my friends say how well I look.

I would recommend anyone with MS to use this wonderful therapy.

Mrs PB – Lancashire

I have suffered from MS for 26 years and had for many years been getting a lot of pain which affected my quality of life in many ways.

After just 1 month of having two treatments a week on the magnetic stimulation bed my pain had been reduced by around eighty percent and my quality of life has been improved greatly.

I have now been using the beds twice a week for eight months and have continued to get wonderful reduction in pain.

I recommend this equipment to anyone suffering the pain associated with MS wholeheartedly.
10 Contraindications

Based on over 12,000 case studies on the use of PEMF and daily use in a clinical and home environment, there is no information in literature regarding contraindications to magnetostimulation. However, in view of the comparatively short period of existence of magnetostimulation in relation to magnetotherapy, the contraindications should be the same as in case of magnetotherapy ie:

- pregnancy
- presence of electronic implants
- active neoplastic disease
- active tuberculosis of the lungs
- bleeding from the alimentary tract
- serious infections of a viral, bacterial and mycotic origin
- conditions after organ transplants

Side effects, which may occur due to magnetostimulation

Until now, no serious side effects of magnetostimulation have been reported. The following effects might occur temporarily:

- tingling sensation
- numbing sensation
- warmth sensation
- sleep disorders, particularly in elderly people
- irritation
- concentration disorders
- temporary intensification of pain

In conclusion, it should be stated that the application of variable magnetic fields is safe and progress of experimental and clinical knowledge will in all likelihood result in reduction of the number of contraindications.

11 Frequently Asked Questions (by patients)

Q Is the equipment safe?
A Yes, it's very safe.
Up until the year 2001, over 10,000 people had been evaluated whilst using Viofor equipment with no evidence of side effects.

Q Is the equipment easy to use?
A The equipment is very easy to use.
The Classic system can be up and running in minutes, as the manual is very comprehensive and the control unit has pictorial symbols.
With the Professional versions, again the manuals are comprehensive, though we offer training sessions (two days – which can be at your premises or ours) if required.
Fully trained staff are always on hand at our offices to give you assistance should you require it – we are only a phone call away.

Q Can I treat myself on the equipment?
A Yes, you can.
Because the equipment is so easy to use, any adult can use it. It is not necessary to be medically trained in order to use the equipment.
Each set comes with a full instruction manual and we include guidelines on settings for various conditions.
Q What happens when I go on the equipment - what will I feel?  
A Most people feel nothing more than slight warmth from the equipment. Occasionally, minor tingling sensations are felt in the extremities or other areas of the body. People with painful conditions can have a slight increase in the amount of pain that they feel, but this will only last for one to three sessions. After this the analgesic effect of the equipment starts to work and pain is very much lessened. Many people report a feeling of well-being after just a few treatments.

Q How long before I start to get benefit from the equipment?  
A This will depend upon which condition is being treated. Age and fitness also play a part in how quickly you will react to treatments.

Arthritis  
With arthritic conditions you can expect to feel much less pain and have more movement after six weeks or so, but initial pain reduction will start after just two to three treatments.

Pain and Sports injuries  
Painful areas (back pain for instance) and sports injuries all respond very quickly to treatment with Viofor equipment – even long term pain conditions.

Chronic ailments  
Chronic ailments such as MS and Parkinson’s will normally respond well, with varying times and levels of relief, depending upon the severity of the condition before treatment commences.

Osteoporosis  
Osteoporosis sufferers will normally start to have increased bone density after six to 12 months.

Cholesterol and high blood pressure  
High cholesterol levels will normally be lowered after three to four months and high blood pressure levels normally drop significantly after one to two months. After these periods blood should be tested by your doctor to see if is appropriate to reduce drug intake.

Other conditions  
Many other conditions, not listed, respond very well to Viofor magnetostimulation. If you would to know whether a condition - not listed - can be treated, please send an email or telephone us and we will give you an answer as soon as possible.

Q Can I continue to take medication whilst using the equipment?  
A Yes. Viofor equipment is designed to be used as an adjunctive therapy to normal medical procedures, so we recommend that you continue to use prescribed medications and follow the advice of your doctor /consultant. If you are chronically ill, we recommend that you inform your medical practitioner that you will be using magnetostimulation equipment.

Q How does the equipment work?  
A To put it very simply, Viofor magnetostimulation equipment encourages your body cells to return to peak condition. The equipment does this by improving the electrical state, blood supply and oxygen to cells, which in turn allows them to detoxify, regenerate and reproduce. When your body cells are in peak condition, all your bodily systems start to work as well as they possibly can.

Q Why is Viofor the best equipment in this area?  
A The professors that designed the Viofor JPS magnetostimulation equipment are at the very top of their field of magnetic therapy. They have spent more than fifteen years developing the equipment to the standard that it is today. Tens of thousands of people have been treated successfully with Viofor equipment in hospitals and clinics across Europe. The Viofor JPS System uses the most efficient complex wave patterns (patented technology) at low induction levels to produce maximum healing benefits. This technology avoids most problems associated with older type magnetic field equipment, which uses high induction level systems that the body can soon get used to.
12 Institutions Possessing and/or Using Viofor JPS System

**HUNGARY**
1. OSEI National Institut for Sport Medicine; Budapest; Fisiotherapy Hospital
2. Institut for Traumatology; Hungary; Budapest; Hospital
3. Magyar Imre Hospital; Hungary; Ajka; Hospital
4. Karolyi Sandor Hospital; Hungary; Budapest; Hospital
5. MH HEMORI (Army); Hungary; Heviz; Rehabilitation center
6. HOTEL AQUA; Hungary; Heviz; Rehabilitation center
7. Thermal Hotel Heviz; Hungary; Heviz; Rehabilitation center
8. NUPI National Institut for New Generation of Sport; Hungary; Budapest; Research
9. Hungarian Sport Training Camp; Hungary; Tata; Sport Medicine
10. Hungarian Customs Police Recreation Centre; Hungary; Budapest; Rehabilitation center
11. Bodnar Klinika; Hungary; Budapest; Rehabilitation center
12. HONDA Good Health's House; Hungary; Budapest; Rehabilitation center
13. MEDICOR Employee health center; Hungary; Budapest; Employee health center
14. SUGO-MED Employee health center; Hungary; Baja; Employee health center
15. OXIVIT Employee health center; Hungary; Budapest; Employee health center
16. SPORT-KA Bt; Hungary; Kisszallas; Family&Sport Medicine
17. Pusztai Egeszsegugyi Bt; Hungary; Koszeg
18. MANUAL-MED Bt; Hungary; Budapest; Rehabilitation center
19. MAREK-MEDK Kft; Hungary; Budapest; Neuropsychiatry
20. SIKKES Bt; Hungary; Budapest; Rehabilitation center
21. FOTOFIL Bt; Hungary; Paks; Rehabilitation center
22. Bekesi GYMNASTICS; Hungary; Szeged; Gymnastics
23. MED-AURA Bt; Hungary; Budapest; Acupuncture
24. DOLOMIT-MED; Hungary; Budapest; Clinic of Orthopedy

**CANADA**
1. Bridgewater Apartman Sp; Canada; B-water; Sport medicine

**FRANCE**
(List unavailable from country distributor)

**GERMANY**
(List unavailable from country distributor)

**THE NETHERLANDS**
(List unavailable from country distributor)

**BELGIUM**
(List unavailable from country distributor)

**MEXICO**
1. National Football Team; Mexico; Mexico D.C.
2. Alternative Health Centre; Mexico; Mexico D.C. Doctor
3. Cortec Sp; Mexico; Mexico D.C.

**AUSTRIA**
1. Prof. Dr. Dominik Uehlinger, MD Division of Nephrology and Hypertension
2. Allgemeine Unfallversicherungsanstalt
3. Rehabilitationzentrum Tobelbad
4. Therapiezentrum St. Radegund
5. Caritas Institut St. Pius

**RUSSIAN FEDERATION**
1. National Institut of Medicine and Stomatology in Moscow
2. Main Military Hospital of National Defence Ministry named after Budrenko in Moscow
3. Central Military Hospital named after Wiszniewski in Moscow
4. National Pediatric Rehabilitation Center “Dietstwo” in Moscow
5. Russian Combatant Rehabilitation Center in Moscow
6. Circus named after J. nikulin in Moscow
7. Regional Hospital in Smolensk
8. Medical Cosmetology and Healt Center of Russian Ministry of Health in Kazan
9. Regional Scientific and Research Cardiology Institute in Moscow (MONIKI)
10. Football team CSKA Moscow
11. Hockey Club “Akbars” Kazan
12. Hockey Club “Metalurg” Nowokuznieck (Siberia)
13. Spa & Sanatory “Korall” in Soczi
14. Clinic No28 in Moscow
15. Disabled Children Rehabilitation Center of Russian Ministry of Russian Ministry of Social Care in Reutow
BELARUS REPUBLIC
1. National Sports Medicine Institute in Minsk
2. Olympic Preparation Center „Raubicy“ near Minsk
3. Olympic Preparation Center „Stajki“ near Minsk
4. Sport Shooting Federation of Belarus Ministry of Sport
5. Football Club (I ligue) „Torpedo“ Minsk
6. Regional Sports Clinic in Grodno
7. Regional Sports Clinic in Gomle
8. Football Club (I ligue) „Dynamo“ Minsk

LATVIA
1. National Hospital „Gajlezers“ Riga
2. Latian Ministry of Transport Clinic Riga
3. Local Clinic No3 in Riga
4. General Hospital in Daugawpils
5. Veterinary Clinic „Kalnberzs“ in Riga
6. Medical Center of prof. Detlavs in Riga

MOLDAVA
1. Football Club (I ligue) „Szeryf“ Tyraspol

UKRAINE
1. Scientific and Reseurch Center of Phisical Culture and Sports Institute in Kiev
2. Medical Center SA „LwiwTransGaz“ in Lwow
3. Medical Center in Kiev
4. Football Club SA „LwiwTransGaz"

CESKA REPUBLIKA
1. Galatea Brno a.s- REHABILITACE
2. Nemocnice Vimperk o.p.s.REHABILITACE
4. Hamzova Odborna Lecebnna pro Deti i Dospele Chrudim
5. Nemocnice Milisrdnych bratr Vizovice
6. Chirurgie Sportovni Medicina Ostrava-Marianske Hory
7. Detsky denni rehabilitacni stacionar Hradec Kralove
8. Ramis Medica s.r.o., Ostrava-Privoz
9. Regionalni organizace Unie ROSKA v CR , Ostrava
10. Mestcka Nemocnice ODRY , Odry
11. Metska Nemocnice Prerov, Prerov
12. Okresni organizace SMP CR Prerov, Prerov
13. Soukroma Rehabilitace, Marianske Lazne
14. Immunologie a alergologie –Mudr. Lichnovsky Jan Ostrava
15. STR Stredisko Reflexni Terapie Mudr. Milan Vesley , Letnany

POLAND
I. REHABILITACJA
1. Centrum Rehabilitacji SZP ZOZ Oddzial Urazowo-Ortopedyczny w Konstancinie
2. Wojewodzki Ośrodek Reumatologiczno-Rehabilitacyjny Uzdrowisko Goczałkowice Zdrój
3. Krakowskie Centrum Rehabilitacji
4. Gliwicki Ośrodek Adaptacyjno-Rehabilitacyjny dla Dzieci i Mlodzieży Niepełnosprawnej Gliwice
5. Ośrodek Leczniczo-Rehabilitacyjny dla Dzieci Kamilenka
6. Ośrodek Pomocy Społecznej Ośrodek Rehabilitacji Terapeutycznej dla Dzieci i Mlodzieży Czechowice Dziedzice
7. Ośrodek Rehabilitacyjny Stwardnienia Rozsianego Siemianowice Śląskie
8. Polskie Stowarzyszenie na Rzecz Dzieci z Upośledzeniem Umysłowym.
11. Centrum Rehabilitacji SALVEO w Bytomiu
12. SP ZOZ Górniośląskie Centrum Rehabilitacji "REPTY" Tarnowskie Góry
13. SPZ ZOZ Centrum Rehabilitacji Leczniczej UNIMEO Sp. zo.o.
14. SPZ ZOZ Ośrodek Rehabilitacyjny Suwałki
15. Zakład Rehabilitacyjno-Pielęgnacyjny Ostrowiec Świętokrzyski
16. Centrum Rehabilitacji SALVEO w Bytomiu
17. Wojewódzki Ośrodek Rehabilitacji Kochcice
18. Centrum Rehabilitacyjno-Edukacyjny dla Dzieci Niepełnosprawnych Rusinowice
19. Europejska Klinika Rehabilitacji VICTORIA Sława
20. Centrum Rehabilitacyjne Gierałtowice
21. Centrum Rehabilitacji i Fizyterapii Rawa Mazowiecka

II STOMATOLOGIA
1 Pomorska Akademia Medyczna w Szczecinie - Zakład Propedeutyki i Fizykoterapii Stomatologicznej, Zakład Chirurgii Stomatologicznej
2 Wojewódzkie Centrum Stomatologii w Warszawie
3 Oddział Stomatologii Wydziału Zabrzeńskiego Łąskiej Akademii Medycznej, Klinika Chirurgii Szczękowej Zabrze
4 Gabinet Stomatologiczny w Lesznie
5 Prywatny Gabinet Stomatologiczny w Łęczycy
6 Prywatny Gabinet Stomatologiczny w Myszkowie
7 NZOZ ORTO-DENT w Zawierciu

III SANATORIA
1 Dom Sanatoryjno-Wypoczynkowy "Rzymianka" Rabka
2 Hotel Kesiżyca Leśna
3 Kolejowy Szpital Uzdrowiskowy "Kolejarz" Sp. z o.o.
4 NZOZ Prewentorium Uzdrowiskowe PIAST Iwoncz Zdrój
5 Ośrodek Rehabilitacyjno-Wypoczynkowy Mielno
6 Ośrodek Wczasowy "Na Kłiffie" Jarosławiec
7 Penjepol Villa Romantica Szkarska Poreba
8 Prywatna Klinika Rehabilitacyjna Krojanty Dwór
9 PUTR Wodnik Ośrodek Leśna Polana Ustronie Morskie
10 Saniatorium Uzdrowiskowe H.Cegielski Dąbki
11 Sanatorium Uzdrowiskowe Metalowiec Inowrocław
12 Sanatorium Uzdrowiskowe SAN HSW PPU Lasówka Sp. z o.o. Kołobrzeg
13 Solanki Uzdrowisko Inowrocław Sp. z o.o.
14 Szpital Uzdrowiskowy Kolejarz Sp. z o.o. Kołobrzeg
15 Uzdrowisko Busko Zdrój S.A.
16 Uzdrowisko Goczałkowice-Zdrój Wojskowy Ośrodek Reumatologiczno-Rehabilitacyjny
17 Zakład Leczniczo-Wypoczynkowy "IKAR" Kołobrzeg
18 ZOZ Sanatorium MSWiA Kołobrzeg
19 ZOZ Sanatorium MSWiA Kudowa Zdrój
20 Sanatorium Uzdrowiskowe Muszyna Instytut Zdrowia Człowieka NZOZ
21 22 Wojskowy Szpital Uzdrowiskowo-Rehabilitacyjny SP ZOZ w Ciechocinku

IV DOMY POMOCY SPOŁECZNEJ
1 Centrum Pomocy Socjalnej Sokółków Podlaski
2 Dom Dziecka Nr 2 Białystok
3 Zakład Terapii Zajęciowej, Urząd Gminy Piaski
4 Dom Pomocy Społecznej Czarnowąsy
5 Dom Pomocy Społecznej dla Dzieci Pruszków
6 Dom Pomocy Społecznej Kobyła Góra
7 Dom Pomocy Społecznej Myślibórz
8 Dom Pomocy Społecznej Poznań
9 Dom Pomocy Społecznej Siedlce
10 Dom Pomocy Społecznej dla Dzieci Strumień
11 Dom Pomocy Społecznej Wrocław
12 Gminno-Miejskie Centrum Pomocy "Wiara-Nadzieja-Milost" Odolanów
13 Ośrodek Dla Niepełnosprawnych Mikołąków
14 Ośrodek Terapii Nerwic dla Dzieci i Młodzieży Oddział Leczenia Zaburzeń -Orzesze
15 Ośrodek Pomocy Społecznej Kościan
16 Ośrodek Rehabilitacyjno-Wychowawczy Piotrków Trybunalski
17 SP ZOZ Zakład Pielęgnacyjno-Opiekuńczy Świnoujście
18 Środowiskowy Dom Samopomocy Żarki
19 Dom Pomocy Społecznej Pszczyna
20 Dom Pomocy Społecznej w Wałbrzychu Jednostka Organizacyjna Powiatu Wałbrzyskiego
21 Dom Pomocy Społecznej w Krzyżanowicach
22 Dom Artystów Weteranów Scen Polskich Konstancin Jeziorna
23 Ośrodek Opiekuńczo Rehabilitacyjny dla Dzieci Niepełnosprawnych w Skierniewicach

V FUNDACJE
1 Fundacja Rehabilitacyjno-Kardiologiczna Warszawa-Anin
2 Stowarzyszenie Rodziców Dzieci Niepełnosprawnych ISKRA Warszawa
3 Stowarzyszenie Osób Niepełnosprawnych i ich Przyjaciół w Nysie
4 Fundacja Sport i Zdrowie przy NSZZ Solidarność WZK Przyjaźń Dąbrowa Górnicza
5 Fundacja "DOM" Opole
6 Stałowski Towarzystwo Stwardnienia Rozsianego
7 Chocianowskie Stowarzyszenie Pomocy Dzieciom i Dorosłym
8 Polskie Stowarzyszenie na Rzecz Osób z Upośledzeniem Umysłowym Zakopane
9 Fundacja "Sprawni Inaczej" Gdańsk
10 Stowarzyszenie Osób Niepełnosprawnych "SON" Gliwice
11 PCK Nowe Miasto Lubawskie Zarząd Rejonowy
12 Kieleckie Stowarzyszenie Chorych na SM
13 Spółdzielnia Inwalidów Metal-Incar Warszawa
14 Spółdzielnia Inwalidów Rozwój Łobusza
15 Spółdzielnia Inwalidów SPAMEL Twardogóra
16 Stowarzyszenie Ostro bowanie Dzieciom Specjalnej Troski Ostrów Wielkopolski
17 Stowarzyszenie "Otwarte Drzwi" Warszawa
18 Stowarzyszenie Chorych na Stwardnienie Rozsiane i Osób Niepełnosprawnych -Suwałki
19 Stowarzyszenie Na Rzecz Dzieci z Upośledzeniem Umysłowym "PERSONA" Legnica
VIII LECZNICTWO OTWARTE
1 Miejskie Centrum Medyczne Sp. z o.o. LIBIAŻ
2 SPZOZ Stalowa Wola
3 SP ZOZ Miejski Ośrodek Zdrowia w Zielonce
4 Regionalne Centrum Krwiodawstwa i Krwiolecznictwa Szczecin
5 Zakład Opiekuńczo - Leczniczy Gliwice
6 Dom Opiekuńczo-Leczniczy Przasnysz
7 Wojskowa Specjalistyczna Przychodnia Lekarska SPZOZ Stargard Szczeciński
8 SP ZOZ Zakład Pielęgnacyjno - Opiekuńczy Świnoujście
9 SORO Centrum Rozwoju Dziecka Katowice Ośrodek Rehabilitacyjny Dzieci Niepełnosprawnych
10 SP Z ZORZ Zarząd Służby Zdrowia MSWiA Białystok
11 SP ZOZ Przeciszów
12 NZOZ Poradnia Leczenia Ból Przewlekłego Tychy
13 NZOZ ORTO-DENT Zawiercie
14 NZOZ Poradnia Medycyny Rodzinnej Zdzieśowice
15 SPZOZ w Łeżajsku
16 NZOZ LANCET Grębocice
17 Publiczny Zakład Lecznictwa Podstawowego Kobiór
18 NZOZ LUMIS Żeliszew
19 ZOZ w Kolbuszowej
20 SP ZOZ Police
21 NZOZ Przychodnia Rodzinna Ścinawa Średnia
22 NZOZ SANUS Jaworzyńska Śląska
23 ZOZ w Łowiczu
24 Centrum Medyczne Medyk Oleśnica
25 NZOZ "Lekarz" Annpoli
26 Prywatny Zakład Opieki Zdrowotnej INTERMEDICA Cewia
27 NZOZ Przychodnia "Na Trzynieckiej" Chorzów
28 NZOZ Centrum Usług Pielęgniarskich Chorzów
29 Specjalistyczna Przychodnia Lekarska dla Pracowników Wojska SPZOZ - Warszawa
30 SP GZOZ w Nowym Wiśniczu

IX INSTYTUCJE KOŚCIELNE
1 LIV Prywatne Liceum Ogólnokształcące Sióstr Nazaretanek Warszawa
2 Caritas Diecezji Płockiej
3 Caritas Diecezji Giżyckiej 2001
4 Dom Pomocy Społecznej Zgromadzenia Sióstr Przemienienia Pańskiego
5 NZOZ "Lekarz" Annopol
6 Prywatny Zakład Opieki Zdrowotnej INTERMEDICA Cewia
7 Stacja Opieki Caritas Archidiecezji Krakowskiej im. Brata Alberta Alojzego Kosiby - Wieliczka
8 Zakład Opiekuńczo-Leczniczy Zgromadzenie C.M.B.B."Serafinki" Oświęcim
9 Caritas Polska Warszawa
10 Dom Pomocy Społecznej Zakon Bonifratrów Cieszyński
11 Caritas Diecezji Rzeszowskiej O/Jasło
12 Dom Opieki Św. Jadwigi Śląskiej Caritas Archidiecezji Wrocławskiej - Henryków
13 Klasztor Ojców Franciszkanów Teresin, Niepokalanów
14 Caritas Diecezji Krakowskiej O/Jakubów

X INNE
1 Alfa Fruit Sp. z o.o. Przecław
2 ZAMED Zakład Aparatury Medycznej Kołobrzeg
3 Zakład Specjalistyczny Ochrony Środowiska Ekosfera Częstochowa
4 Przedsiębiorstwo Farmaceutyczne APEXIM S.A. Radwanice
5 Zakład Opiekuńczo-Leczniczy Zgromadzenie C.M.B.B."Serafinki" Oświęcim
6 Przedsiębiorstwo Wyrobów Kukuśczaków Częstochowa S.A. Brzeg
7 Elektrociepłownia Tychy S.A.
8 Wojskowy Instytut Medycyny Lotniczej Warszawa
9 Tankpol Sp. z o.o. Szczecin
10 Gliwicka Spółka Węglowa S.A.Kopalnia Wegla Kamiennego "Knurow"
11 METAL UNION Sp.z o.o. Częstochowa
12 Zakład Energetyczny Płock S.A.
13 Instytut Mechaniki Sp. z o.o. Miłoszyce
14 INTER-TEAM Sp. z o.o. Warszawa
15 MOSTY Katowice Sp. z o.o.
16 Centrum Ekologiczne Licencji Technologii CELT Sp. z o.o. Katowice

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