

# **Report on Pulsed Electromagnetic Field Therapy**

## **prepared for at the request of the Israeli Ministry of Health**

### **Forward**

**The purpose of this document is to provide a basic understanding of how magnetic fields, especially PEMFs, work in the body. In addition to these basic balancing actions, magnetic fields also help with many other functions and conditions, with new ones being discovered regularly. This report is also a compilation of our personal experience with patients whom we have treated at our Medical Center who followed our recommended treatment protocol.**

All energy is electromagnetic in nature, and nothing happens in the body without an electromagnetic exchange between cells. We are all familiar with the electrocardiogram (EKG) and electroencephalograph (EEG) tests, which measure the electromagnetic activity of the heart and brain, respectively. When electromagnetic activity ceases, life ceases. Electromagnetic energy controls our chemistry. Disruption of this energy in cells causes impaired cell metabolism, and if our cells are not healthy, our body is not healthy, in whole or in part. The following is an introduction to magnetic fields, MRT (Magnetic Resonance Therapy) a.k.a. PEMF (Pulsed Electromagnetic Field Therapy), and their therapeutic actions in the body.

### **What is an electromagnetic field? What are PEMFs?**

If you have ever held two magnets in your hands, tried to force them together, and felt a resistance between them, then you have experienced a magnetic field. [The Earth has its own magnetic field](#), produced by fluxes in the molten metal in the core of the planet. The presence of this field is what causes a compass to rotate so that the 'north pole' of the compass points roughly north. A changing magnetic field (such as a magnetic field moving through a coil) generates an electric field (which would drive a current in the coil). This forms the basis for many electrical generators and motors. Similar to the way that a changing magnetic field can generate an electric field, a changing electric field generates a magnetic field. This is a natural activity of the universe. An electromagnetic field is a physical field produced by moving electrical charges. It affects the behavior of any other charged objects in the vicinity of the field.

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

It is important to distinguish between the electromagnetic fields we use for therapeutic purposes, and other man-made electromagnetic fields from power lines, microwave ovens, cell phones, etc., which can cause damage to our bodies. The PEMF devices we recommend all produce safe, natural electromagnetic fields which are of lower frequency, and are complementary to the chemistry and functions of the body.

### **How can electromagnetic fields have an effect on my body?**

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

### **What are some basic cell functions, and how do magnetic fields facilitate them?**

Some of the basic actions of a cell are to generate energy to eliminate waste, to repair and regenerate itself, and perform its predetermined functions based on the cell's type and location in the body. Magnetic fields cause or increase motion of ions and electrolytes in the tissues and fluids of the body. It's both easy and quick to move an ion or electrolyte in a living organism using magnetic fields. This movement stimulates a vast array of chemical and electric actions in the tissues of the body, helping them to rebalance or heal themselves where necessary.

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

### **Why do I need treatment at a cellular level?**

Magnetic fields also affect the charge of the cell membrane, which allows membrane channels to open up. These channels are like the doors and windows of a house. By opening cell channels, nutrients are better able to enter the cell, and waste is more easily eliminated from the cell. This helps to rebalance and restore optimum cell function. Also it should be noted that a healthy cell has an internal voltage of 70-100 millivolts potential. Unhealthy and or damaged cells have an internal voltage potential below 70 millivolts. Pulsed magnetic fields will increase the internal voltage of cells which are below the normal voltage range. If you restore enough cells, they will all work more efficiently. Cells of the same type come together to make tissues, and those tissues come together to make organs. So, by restoring or maintaining cellular function, you will, in turn, restore or maintain organ function, allowing the entire

body to function better. We all know that the body ages over time. Maintaining the function of every individual cell at an optimal level every day is an important part of slowing aging.

### **Can PEMF therapy protect me from future illnesses?**

Cellular “injury”, the state of a cell when it is not healthy, leads to disease conditions. [Magnetic fields protect](#) against cell injury by improving circulation, repair processes, and energy, and increasing special stress proteins in the cells. These proteins are used to prevent cell breakdown and wear and tear, as well as help speed recovery from injury. Magnetic fields balance cells, tissues and bodily functions at very fundamental levels, even before damage and problems become obvious to you.

### **I thought magnetic fields were bad for me.**

There are distinct differences in the effects of devices at various frequency ranges, from extremely low frequencies (ELFs), to very low frequencies (VLFs), to microwave level frequencies, radio frequencies, infrared and ultraviolet frequencies, and more. Most magnetic field [exposure risk](#) comes from power lines and cell phones, because of their particular exposure times or field strengths and frequencies. These frequencies and intensities, known as ‘electro-smog’, can induce heat in the tissues of the body and modify genes, and therefore can damage cells. Most PEMF devices we recommend produce frequencies in the ELF to VLF range, since they do not induce heating actions. They in fact form a great defense mechanism against magnetic field deficiency caused by electro-smog. Our recommended treatment devices have a very safe track record – even the much higher intensity and frequency diagnostic MRI machines have been found to be safe to the people that operate them daily, as long as the safety directions are followed.

### **Can I overdose on a magnetic field?**

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

### **How quickly will my illness or health issue improve?**

Minor imbalances in individual cells can be rebalanced very easily before they become an obvious problem. Regrettably, many people wait until they have a significant health issue before they seek treatment with a PEMF system or get a magnetic system for their own home use. By this time, some problems have become too deep-seated to reverse, and only symptom control remains possible. It is important to say that PEMFs are not expected to cure disease. Their role is to stimulate the various functions of the body so that the body can better support and heal itself. Understanding the extent of a health problem will help the individual to have [realistic expectations](#) of the time required to produce expected or desired results. If the problem took a long time to get to where it is now, PEMFs may take a long time to

give the greatest benefit – and may never produce hoped-for results if the damage is too great. That doesn't mean they won't work, and it doesn't mean you won't get significant health benefits. We need to respect the body's healing timelines and processes, and work positively with them. When treatment is begun, the order of healing will follow the body's own wisdom of what tissue and symptoms will be cleared first, second, etc. Patience and acceptance of this natural order will aid in the healing process.

### **Will magnetic fields replace my medication?**

While PEMFs will not cure diabetes, heart disease, arthritis, or cancer, they still can make a huge improvement in overall function and symptom relief, and can be used alongside other treatments, including medication, for even better results. In many cases, PEMFs can be used to replace or reduce pain medications and other anti-inflammatories, but they should not be depended on as the primary treatment without discussion with an appropriate health care professional. They can become a primary treatment once a proper diagnosis and treatment plan are developed and the need for medication is reduced or eliminated.

### **What can I do to improve the effects of PEMFs in my body?**

Since most of the effects of magnetic fields happen because of how they act on ions, especially calcium, sodium, potassium, and magnesium, these ions and electrolytes need to be at the right levels in the body. It is difficult to heal depleted tissues without sound [nutrition](#). Supplements may also be quite helpful for magnetic therapy to be most effective. Our doctors usually recommends magnesium supplementation and adequate amounts of daily water.

### **What are some of the basic beneficial actions PEMFs will have in my body?**

#### **Increased Circulation**

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

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

## **Enhanced Muscle Function**

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

## **Decreased Inflammation**

Inflammation is a cascade of physiologic processes initiated by the body to repair cellular damage in tissues by increasing the blood flow to the damaged area and increasing the number of good inflammatory cells. The process of inflammation is generated and supported by the interaction of a number of immune cell types, with other cell types (like T cells) playing a regulatory role in the cascade effect. Inflammation is a necessary and beneficial process, but it often persists longer than necessary, resulting in chronic inflammation. Chronic inflammation is frequently a cause of chronic pain. PEMFs have been found to reduce chronic, damaging inflammation. Inflammation can be initiated by many causes, and knowing the nature of the cause is important in designing therapeutic approaches.

T cells are a major regulator of the inflammatory cascade. In bacterial infections, early infiltration of the affected tissues by white blood cells is followed by the arrival of T cells, which kill bacteria. In this circumstance, eliminating of T cells can delay or stop healing. Conversely, in trauma-induced injury, T cells are less important to the healing process, and may be harmful if present for too long. In this case, elimination of T cells can minimize the unwanted effects of inflammation, accelerate healing, and reduce the risk of chronic inflammatory diseases. In chronic inflammatory diseases such as rheumatoid arthritis, psoriasis, or tendinitis, T cells support the persistence of the disease state, and removing them would be favorable.

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

## **Stress Reduction**

Stress is part of being human. Normal stress, called eustress, is necessary for survival. Too much stress is very harmful to the body, and accelerates aging. Stress is responsible for at least 65% of our illnesses, so stress reduction is necessary for all of us. Stress-reducing activities performed only now and then will allow too much stress-related damage to accumulate over time. Therefore, stress reduction must be a daily activity. Magnetic fields have many stress-reducing effects. Daily use of PEMFs help to wash away the negative effect natural stresses have on our bodies.

## **Bone Healing**

Magnetic fields pass through the body – even the bones – as if the body wasn't even there. PEMFs work to repair bones, whether they are damaged by surgery, injury, or

disease, and have been found to improve bone regeneration such as occurs with osteoporosis and osteopenia, among other bone destroying conditions.

### **Blood Oxygenation**

Just as a fire cannot burn without oxygen, our cells cannot produce heat and energy without oxygen. Our lungs extract oxygen from the air we breathe. It passes into our blood and is carried by arteries away from the heart and delivered to the rest of the body, including all the organs. PEMFs help with the process of extracting oxygen out of the air we breathe and help it to be transported into the circulation. The absorbed oxygen is then transported through the body to all the cells, where it is absorbed into the individual cells. In the cells, enzymes and other basic cell energy production processes use the oxygen for cell metabolism, the energy necessary to function properly. The metabolism of an organism determines which substances it will find nutritious and which it will find harmful. Proper blood-oxygen levels at the cell level (not just in the blood) allow this process to continue quickly and efficiently. After the oxygen exchange takes place, veins carry deoxygenated blood and metabolic waste products away from those same cells and back to the heart for recycling again.

### **Some of these other actions include:**

- reducing muscle tension
- improving tissue healing
- reducing pain
- increasing energy
- improving clotting factors
- slowing the development of arthritis
- stimulating the immune system
- helping the body to detoxify
- improving the uptake of nutrients
- reducing blood pressure
- helping nerve function
- helping liver function
- balancing the acupuncture meridians
- improving sleep
- making soft tissue more flexible
- reducing arthritic changes

**The following link will take you to a very large reference library containing peer review medical journal articles on MRT/PEMF**

**<http://www.healinglightseminars.com/bioelectromagnetic-therapy/bioelectromagnetic-research-library/>**

## **INITIALS OF MAGNETIC FIELD TREATMENT PROTOCOLS (Key)**

**f**- Frequency of magnetic field (Please Note: proceeding the number in this box is a plus or a minus sign, this function relates to magnetic rotation around the patient in either a clockwise or counterclockwise direction).

**F** –Wave form of magnetic induction (the possible wave forms are as follows: S (Sine wave) C (Square wave) P (Pulsed wave) E (Exponential wave) L (Saw tooth wave)

**H**- Strength of magnetic field in milli-tesla

**tn**- Rise time of magnetic induction

**tc**- Fall time of magnetic induction

**N**- Number of magnetic wave's cycles

**VREMIA**- Time of each treatment component

The following are patients who received pulsed electromagnetic field therapy in combination with other therapies and who followed the recommended protocol.

1. **Patient Name:** D. Gavriel – Male age 51

**Diagnosis:** Diagnosed with migraine headaches and lower back pain being a 9 on a scale of 1-10. Started treatment on 03-10-2013 last treatment was on 24-12-2013.

**Treatment Protocol:** Treatment protocol consisted of: 1. MRT (Magnetic Resonance Therapy a.k.a. PEMF Therapy (12 sessions) 2. Bio-Photonic and Ozone Therapy (Major Autohemotherapy) (12 sessions). Patient came twice per week for one month and then once per week for one more month. MRT treatment protocol consisted of the following program:

27:55						
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
-050	L	22	30	30	05	5:00
+100	P	15	30	30	06	6:00
-100	P	20	15	30	10	7:30
+100	S	27	26	30	05	4:40
-060	C	16	10	09	15	4:45

**Results:** After the 5<sup>th</sup> session patient felt major reduction in pain relief and at the end of the treatment course patient was pain free.

**Follow up:** Patient was contacted before the Rosh Hasahna holiday to enquire of his welfare and to wish him a Happy New Year. Patient reported feeling very well and pain free. To date, No adverse side effects were observed or reported.

2. **Patient Name:** T. Eros – Male age 28

**Diagnosis:** Diagnosed with migraine headaches and lower back pain due to sports injury. Pain level was an 8 on a scale of 1-10.

**Treatment Protocol:** Started treatment on 13-09-2013 last treatment 07-01-2014. Medical protocol consisted of 1. MRT (10 Sessions) 2. Bio-Photonic and

Ozone Therapy (10 sessions) 3. Supplementation with vitamin B12 (Methylcobalamin) injections and vitamin D which were very low on the patients' blood tests. The patient came 2 times per week for 1 month and then was told to take a 3 month pause. He came 3 months later and did 2 more sessions in which we obtained the desired results. MRT treatment protocol consisted of the following program:

25:12						
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
+110	C	32	30	30	08	8:00
-075	E	22	25	25	10	8:20
-050	S	15	46	30	07	8:52

**Results:** Patient responded well to treatments and after the third session both the back pain and migraine headaches were substantially reduced to a 4 on a scale of 1-10. After one month the patient was pain free. When patient returned 3 months later he was still pain free from migraines but had still slight lower back pain on a scale of 2. Patient received 2 more treatment sessions and felt much better.

**Follow-up:** We have not heard of any complaints from the patient up to now. When we called to wish him a Happy New Year he was un-available. To date, No adverse side effects were observed or reported.

3. **Patient Name:** N. Chatuel – Male age 83

**Diagnosis:** Diagnosed with gout, lymphastasis, high blood pressure, and leukemia. Patient came in very bad shape and was very weak and could not walk do to the swelling in his legs. The patient was on chemotherapy which he was receiving at the hospital as well as high blood pressure medications and cholesterol medication. Started treatment 10-06-2013, last treatment received 28-09-2014.

**Treatment Protocol:** Treatment protocol consisted of 1. MRT (34 sessions) 2. Bio-Photonic and Ozone Therapy (40 sessions) 3. I.V infusions consisting of Vitamin C, Trace Elements, magnesium, and selenium (32 sessions) 4. Vacuum therapy on both legs in which each leg is enclosed in a hermetically sealed tube in which there is a controlled negative pressure for 20 minutes; (10 sessions). Patient came 2-3 times per week for a period of 3 months and then took a 6 month rest, continued for 2 months and then took 3 months rest and then was treated for one more month and is now resting. MRT treatment protocol consisted of the following program:

29:30						
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
-140	P	31	30	30	08	8:00
-080	E	20	20	30	09	7:30
-050	S	22	20	20	12	8:00
+050	S	22	20	20	09	6:00

**Results:** Patient responded well to the treatment, the swelling in the legs reduced after 5 treatments and he was able to walk, he had much more energy and a feeling of wellbeing. His blood pressure normalized and his medication was reduced.

**Follow-up:** The patients' gout, lymphastasis, and high blood pressure have been resolved; he no longer needs to take cholesterol and high blood pressure medication, whoever is is now dealing with medical issues related to his diagnosis of leukemia in which he is treated in Nahariya Hospital on an outpatient basis. To date, No adverse side effects were observed or reported.

4. **Patient Name:** E. Diller – Female age 30 medical tourist from Turkey;  
**Diagnosis:** Diagnosed with chronic fatigue, fibromyalgia, multi focal neuropathy due to Lymes disease anamnestic. Began treatment 30-01-2014, last treatment received 06-07-2014.

**Treatment Protocol:** Treatment protocol consisted of 1. MRT (32 sessions) 2. Bio-Photonic and Ozone Therapy (24 sessions) 3. I.V infusions consisting of Vitamin C, Trace Elements, magnesium, and selenium (20 sessions) Patient came twice a week for 3 months then took a 1 month pause at home in Turkey and then continued 1 more month her remaining treatment sessions. MRT treatment protocol consisted of the following program:

14:35						
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
+050	S	15	15	19	04	2:16
-059	C	15	15	10	06	2:30
+100	S	15	30	30	03	3:00
-050	E	15	17	18	03	1:45
+070	S	15	19	19	08	5:04

**Results:** Patient began to feel improvement after the 6<sup>th</sup> treatment session with less pain, less fatigue, and with less brain fogginess. After the 15<sup>th</sup> treatment session patient was feeling better than she had in 6 years since she was diagnosed with Lymes disease. Her quality of life improved dramatically.

**Follow-up:** Patient was contacted before the Jewish New Year to wish her a Happy New Year and to enquire of her condition. She reported feeling well and able to function most of the day, but reported feeling fatigued after 4PM and unable to work as normal. She still reported that she feels some aches and pains toward the end of the day, but not nearly as bad as before she began treatments at our medical center. Overall she was very satisfied with the results she obtained and stated that she wishes to come back in 6 months

for continued therapy. To date, No adverse side effects were observed or reported.

5. **Patient Name:** Y. Lindfeld – Male age 53.

**Diagnosis:** Diagnosed with bilateral severe lymphedema due to Erisipela Rosace of which the patient has been suffering on and off since the age of 18. Patient also had chronic fatigue at the time. All conventional medical treatments failed to resolve the problem. Patient Began treatment on 23-05-2013, last treatment received 26-01-2014.

**Treatment Protocol:** Treatment protocol consisted of 1. MRT (15 sessions) 2. Bio-Photonic and Ozone Therapy (25 sessions) 3. Vacuum therapy on both legs in which each leg is enclosed in a hermetically sealed tube in which there is a controlled negative pressure for 20 minutes; (15 sessions). 5. I.V Antibiotics for 5 days. Patient started out by coming 5 days consecutively and received MRT, I.V. Antibiotics, and vacuum therapy. Afterwards, he came 3 times per week and received MRT, Bio-Photonic and Ozone Major Autohemotherapy, and vacuum therapy for 3 months after which he took rest period of 2.5 months and then continued treatment for one more month. MRT treatment protocol consisted of the following program:

33:20						
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
-050	S	18	20	20	10	6:40
+090	S	15	60	60	05	10:00
-085	S	28	20	20	10	6:40
+122	S	25	25	25	12	10:00

**Results:** The patient responded very well to the treatments. Bilateral lymphedema was resolved as well as the Erisipela Rosace. He also had lots of energy and was able to work full productive day and able to walk without any pain in his legs.

**Follow-up:** The patient came to the clinic just before the Jewish New Year to purchase Ozone Cream. His legs looked completely normal and has been symptom free ever since his last treatment. Patient will come in 6 month for 3-5 maintenance treatments. To date, No adverse side effects were observed or reported.

6. **Patient Name:** M. Bat-Ada – Male Age 58.

**Diagnosis:** Diagnosed with diabetes type II, diabetic neuropathy and pyretic bilateral angiopathy, High blood pressure, and lower back pain due to Lumbar spinal stenosis in L3-S1. Patient has an insulin pump and was taking medication for high blood pressure. Was unable to walk more than 50 meters before having to sit down.

**Treatment Protocol:** Began treatment on 02-07-2013; last treatment received 12-11-2013. Treatment protocol consisted of; 1. MRT (15 sessions) 2. Bio-Photonic and Ozone Therapy (24 sessions) 3. I.V infusions consisting of Vitamin C, Trace Elements, magnesium, and selenium (15 sessions) 4. Vacuum therapy on both legs in which each leg is enclosed in a hermetically sealed tube in which there is a controlled negative pressure for 20 minutes; (15 sessions). 5. Local ozone injections in lower back and lower legs (10 procedures). Patient came twice per week for 2 months than took a one month brake and then continued for 1 more month. MRT treatment protocol consisted of the following program:

							29:10
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
+143	S	25	25	25	09	7:30	
-150	S	25	25	25	09	7:30	
-070	S	32	25	25	09	7:30	
-050	S	22	20	20	10	6:40	

**Results:** Patient responded very well and after the 5<sup>th</sup> treatment was able to walk for much longer distances and had a substantial reduction in neuropathic pain in the legs. After 6 weeks of treatment the patient had less back pain, his blood pressure was normalized and he began reducing his blood pressure medication, he also was able to reduce his insulin intake by half.

**Follow-Up:** The patient reported that he feels an overall improvement of 60%, is enjoying a much better quality of life with much less pain. The patient was instructed to continue to monitor his blood pressure and to log his blood sugar levels. He was last spoken to before the Jewish New Year and told us that he would like to continue with more maintenance treatments after the holidays. To date, No adverse side effects were observed or reported.

7 **Patient Name:** Dr. D. Michaeli – Male age 62

**Diagnosis:** Diagnosed with high blood pressure. Began treatment on 03-07-2013, last treatment received 01-23-2014.

**Treatment Protocol:** Treatment protocol consisted of MRT only (15 sessions) MRT treatment protocol consisted of the following program:

							11:40
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
+122	S	25	25	25	14	11:40	

**Results: Normalization of B/P/**

**Follow-Up:** Reduced drugs for treatment of HTN To date, No adverse side effects were observed or reported.

**8 Patient Name:** R. Michaeli – Female age 42

**Diagnosis:** Diagnosed with migraine headaches. Began treatment on 03-07-2013, last treatment received 03-09-2013.

**Treatment Protocol:** Medical protocol consisted of 1. MRT (16 Sessions) 2. Bio-Photonic and Ozone Therapy (10 sessions) 3. Supplementation with vitamin B12 (Methylcobalamin) injections once per month. Patient came for treatment twice per week for 2 months. MRT treatment protocol consisted of the following program:

							14:38
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
-150	C	22	22	24	05	3:50	
-150	C	24	24	26	04	3:20	
+150	E	26	26	28	04	3:36	
+150	E	28	28	30	04	3:52	

**Results:** Frequent headaches (once per week) vanished.

**Follow-Up:**

Headaches seldom, once during 3 months. To date, No adverse side effects were observed or reported.

**9 Patient Name:** Dr. M. Litman – Male age 58

**Diagnosis:** Diagnosed lower back pain due to slipped disk Lumbar with pressure on the S1 root. Patient suffered at a pain level of 7 on a scale of 1-10. The problem was a result of a sports injury sustained 7 years earlier. Began treatment on 07-08-2013, last treatment received 19-12-2013.

**Treatment Protocol:** Medical protocol consisted of 1. MRT (25 Sessions) 2. Inter-discus injections of Ozone (8 procedures). Patient came for treatment 2 times per week for the MRT therapy and every 2 weeks received Inter-discus injections of Ozone at S1. MRT treatment protocol consisted of the following program:

							14:10
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
+110	S	32	25	25	17	14:10	

**Results:** Patient responded very well with a slight reduction of pain after the 3<sup>rd</sup> MRT treatment and 1 injection and a substantial reduction of pain after 2 injections and 8 MRT treatments. Patient continued to progress with subsequent reductions of pain over the course of 4 months in which the patient was treated.

**Follow-Up:** Patient was followed up 6 months after last treatment and was in much less pain than before treatments with a pain level of 3 on a scale of 1-10. It was recommended that he receive another 8 MRT treatments and 4 more injections. The patient to date did not follow up on continued treatment due to his time constraints at work. To date, No adverse side effects were observed or reported.

**10 Patient Name:** M. Litman – Female age 48.

**Diagnosis:** Diagnosed with frozen shoulder pain with a pain level of 9 on a scale of 1-10 and was unable to lift up her left arm at all.

**Treatment Protocol:** Began treatment on 07-01-2014, last treatment received 13-03-2014. Treatment protocol consisted of; 1. MRT (20 sessions) 2. Bio-Photonic and Ozone Therapy (10 sessions). 3. Injections of Ozone into the shoulder socket (6 procedures). Patient came for treatment 2 times a week for MRT therapy as well as Bio-Photonic and Ozone therapy. Injections were performed every 2 weeks. MRT treatment protocol consisted of the following program:

							12:40
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
+150	S	24	30	30	06	6:00	
-050	C	18	20	20	10	6:40	

**Results:** Patient responded well to treatment with a substantial reduction of pain to a level of 5 on a scale of 1-10 after 1 injection and 4 MRT treatments. Patient also had greater range of motion being able to lift up arm to shoulder level but not beyond. Patient continued treatment with continued reduction of pain and increased range of motion. At the end of her treatment, patient was pain free and had restored full range of motion of her left arm.

**Follow-Up:** Patient was contacted before the Jewish New Year to inquire of her current condition and to wish her a happy new year. Patient reported feeling good with only a slight pain when raising her arm, but added that it was probably due to some heavy lifting she did while cleaning her house for the holiday. It was recommended that she come for several maintenance treatments. To date, No adverse side effects were observed or reported.

**11 Patient Name:** L. Haza – Age 59

**Diagnosis:** Osteoarthritis of the right ankle with severe pain and inability to stand or even walk properly because of the ankle joint being unable to flex; also with non-neurogenic claudication. Pain level was an 8 on a scale of 1-10.

**Treatment Protocol:** Began treatment on 04-07-2013, last treatment received 12-11-2013. Treatment protocol consisted of; 1. MRT (20 sessions)

2. Injections of Ozone into the area of the ankle (16 procedures). Patient came for treatment 2 times a week for MRT therapy; injections were performed approximately a week apart.

MRT treatment protocol consisted of the following program:

26:40						
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
+150	C	20	25	25	09	7:30
-150	C	20	25	25	04	3:20
-150	C	32	25	25	04	3:20
-150	C	19	25	25	05	4:10
+050	C	32	25	25	10	8:20

**Results:** Patient responded well with a temporary (24 hours) relief of pain after first MRT session and injection of ozone. After third MRT session and second injection of ozone there was a longer period of pain relief (several days) with a reduction to a pain level of 6 and the ability to start walking slowly without experiencing extreme pain. With every subsequent treatment the patient improved both from a reduction of pain levels as well as an increased flex mobility of the ankle joint. When patient came for last procedure, she reported a significant improvement and she was informed that she should take a 6 month pause and continue receiving maintenance treatments after assessing the situation in her next follow-up visit.

**Follow-Up:** The patient came to our medical center just before the Jewish New Year to bring her husband for medical consultation so we took the opportunity to examine the patient's improvement. Patient reported feeling less overall pain and the ability to walk better with minimal pain. She reported a pain level of 3. Range of motion of the ankle joint increased by 40% which would explain her ability to now walk without a cane. It was recommended that the patient should continue the current treatment protocol until achieving the desired results. To date, No adverse side effects were observed or reported.

**12 Patient Name:** L. Baltichano- Female age 49

**Diagnosis:** Diagnosed with multi-fragmental fractures of right radius with severe swelling and pain syndrome. The reported pain level was a 9 on a scale of 1-10.

**Treatment Protocol:** Began treatment on 13-05-2014, last treatment received on 10-06-2014. Treatment protocol consisted of; 1. MRT (8 sessions) 2. Low Level Laser Therapy (LLLT) (8 sessions). Patient came twice per week for treatment for a period of 4 weeks.

MRT treatment protocol consisted of the following program:

28:38

<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
+050	C	28	24	25	07	5:43
+050	C	29	25	26	07	5:57
-050	C	30	26	27	06	5:18
-050	E	32	27	28	07	6:25
-050	S	25	20	25	07	5:15

**Results:** Patient responded very well with a decrease in pain after the first treatment as well as a reduction in swelling. Subsequent treatments resulted in further decrease of pain and swelling. After last treatment session patient reported feeling no pain, and no swelling was observed.

**Follow-Up:** A follow-up exam 30 days later of an X-ray showed complete healing of the fractures and no pain or swelling. To date, no adverse side effects were observed or reported.

### 13 Patient Name: J. Newman – Male age 45. Medical Tourist from USA

**Diagnosis:** Diagnosed with osteoarthritis of the spine. Very low blood levels of vitamin D, B12, Magnesium, Iron, and selenium. Also liver enzymes were elevated due to excessive use of NSAID medications Patient was in severe pain when he came to us. After a 12 hour flight we understood how he might be experiencing greater pain than normal. His pain level was a 10 on a scale of 1-10 and he walk bent over and was unable to turn his head left or right nor was he able to tilt his head back.

**Treatment Protocol:** Began treatment on 04-03-2014, received last treatment on 22-07-2014. Treatment protocol consisted of; 1. MRT (28 sessions) 2. Bio-Photonic and Ozone Therapy (28 sessions) 3. I.V infusions consisting of Vitamin C, Trace Elements, magnesium, and selenium (10 sessions) 4. Injections of Ozone into the area of the spine at locations (**Paravertebral L3-4-5**) (16 procedures) 5. Home supplementation of vitamin D as well as once per month B12 (Methylcobalamin) subcutaneous injections. Patient came 3 times per week for MRT, Bio-Photonic and Ozone Therapy, and once per week on different day to receive the I.V infusions as well as the local ozone injections at various locations of the spine for a period of 1 month. After that, the patient came twice per week for MRT, Bio-Photonic and Ozone Therapy and once per week for I.V infusions as well as the local ozone injections for one month. Thereafter the patient came once per week for MRT, Bio-Photonic and Ozone Therapy, Local Ozone injections. MRT treatment protocol consisted of the following program:

25:20

<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>
-050	C	24	20	20	13	8:40
+050	C	24	25	27	10	8:40
-075	S	22	30	30	08	8:00

**Results:** Patient responded very well with a reduction of pain to a level of 5 after the first session. The second visit the patient reported feeling the same level of pain reductions still at a level of 5. After the 4<sup>th</sup> visit patient reported further slight reduction of pain but also reported as well as demonstrated a greater range of movement of head being able to now turn his head to both sides slowly as well as tilt his head back to be able to drink normally. At the conclusion of therapy, patient was down to a pain level of 2 and could now stand up straight and had complete free movement of his head with no pain at all. Overall patient was extremely satisfied with the results.

**Follow-Up:** The patient called 1 week before the Jewish New Year to thank us for treating him so well and to wish us a Happy New Year. Patient reported feeling better than he had for many years, was still relatively pain free and still had complete freedom of movement of his head, and was still able to stand up straight. Patient reported that he wishes to come back to Israel with his wife for some maintenance treatments. To date, No adverse side effects were observed or reported.

**14 Patient Name:** M. Newman –Female age 43. Medical Tourist from USA.

**Diagnosis:** Diagnosed with lumbar severe radicular pains, reoccurring acute bladder infections and chronic fatigue syndrome over a period of 10 years. Patient was very underweight due to poor appetite, blood test results showed very deficient levels of vitamin B12, vitamin D, magnesium, calcium, iron. Low WBC, RDW, as well as low hemoglobin. She also complained of being in constant pain on a level of 6 on a scale of 1-10.

**Treatment Protocol:** Began treatment on 25-03-2014, last treatment received on 24-06-2014. Treatment protocol consisted of; 1. MRT (24 sessions) 2. Bio-Photonic and Ozone Therapy (24 sessions) 3. I.V infusions consisting of Vitamin C, Trace Elements, magnesium, and selenium (10 sessions) 4. Injections of Ozone PARAVERTEBRAL at locations **(L4-5-6)** (12 procedures) 5. Home supplementation of vitamin D as well as once per month B12 (Methylcobalamin) subcutaneous injections. Patient came twice per week for MRT, Bio-Photonic and Ozone Therapy, and one per week for I.V. Infusions of vitamin & mineral infusions and local ozone injections. MRT treatment protocol consisted of the following program:

							28:00
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
-050	C	30	20	20	11	7:20	
-075	S	18	12	20	10	5:20	
-110	E	20	22	22	10	7:20	
+050	S	24	30	30	08	8:00	

**Results:** After first treatment patient reported a slight reduction of pain as well as more energy, but exhibited the next morning a *Herxheimer* Reaction which is simply a detoxification reaction which lasted several hours and included diarrhea, chills, and general weakness similar to flu symptoms, but subsided after a few hours. This reaction is normal and is usually a result of bacteria die off from an infection which she did have. 2 days later she came again for treatment and the next day felt further pain reduction, increased energy, and improved appetite as well as a much improved mood. As treatments progressed she kept getting better and better after each treatment session. Patient gained 6 kilos in 3 months and reported no pain after completing treatments.

**Follow-Up:** The patient called 1 week before the Jewish New Year along with her husband to thank us for treating her so well and to wish us a Happy New Year. Patient reported feeling better than she had in many years with a much improved quality of life, reported that she was pain free, had improved skin tone & texture, was eating normally, and gained another 3 kilos. Patient reported that she wishes to come back to Israel in January with her husband for some maintenance treatments. To date, No adverse side effects were observed or reported.

**15 Patient Name:** N. Lubart-Male age 63

**Diagnosis:** Diagnosed with Muscular Iliopsoas Myositis of the right side. Patient was unable to walk without holding on to a wall or rail and was completely unable to lift his right leg so he was forced to drag his right leg.

**Treatment Protocol:** Began treatment on 31-10-2013, last treatment received 29-12-2013. Treatment protocol consisted of; 1. MRT (24 sessions) 2. Bio-Photonic and Ozone Therapy (24 sessions). 3. Vitamin B12 (Methylcobalamin) subcutaneous injections (2 times per month) Patient came 3 times per week for treatment. MRT treatment protocol consisted of the following program:

							30:32
<i>f</i>	<i>F</i>	<i>H</i>	<i>tn</i>	<i>tc</i>	<i>N</i>	<i>Время</i>	
+100	S	24	19	16	10	5:50	
+050	C	18	22	30	07	6:04	
-057	E	32	20	26	08	6:08	
-083	C	24	08	27	10	5:50	
-050	S	24	20	20	10	6:40	

**Results:** Patient reported feeling more energy and a sense of well-being with a slight improvement in walking after 6 treatments. After completing all the treatments we unfortunately did not observe any significant improvement in the patient's ability to walk and suggested to the patient that

he stop treatment for we felt that we could not do any more for him to help and that it would not be fair to him to continue further.

**Follow-Up:** Patient was contacted again before the Jewish New Year to inquire of his wellbeing. Patient reported no changes at all in his situation for better or for worse. To date, No adverse side effects were observed or reported by the patient.