

How to correctly, objectively and seriously compare low pulsed PEMF devices for home use!

www.pemf-joy.com/certifications.html
and
www.pemf-joy.com/comparisons.html



1. Applicator Design (coil properties, coil layout, correlating physical effects, field exposure)

Whole Body Applicator:

The goal of applying a magnetic field to the whole body is based on a maximum exposure of the entire body in order to create an overall health beneficial and wellness effect. There are two known concepts in the market: Solid, non-insulated copper coils and twisted, insulated mesh wire coils. Non-insulated copper coils deliver a pure electromagnetic exposure with almost no “noise” and create highly efficient induction capability. Insulated mesh wire (made of finely twisted copper wire with a very small diameter) are very simple and cost effective in manufacturing, unfortunately they are lacking in pureness and induction capability.

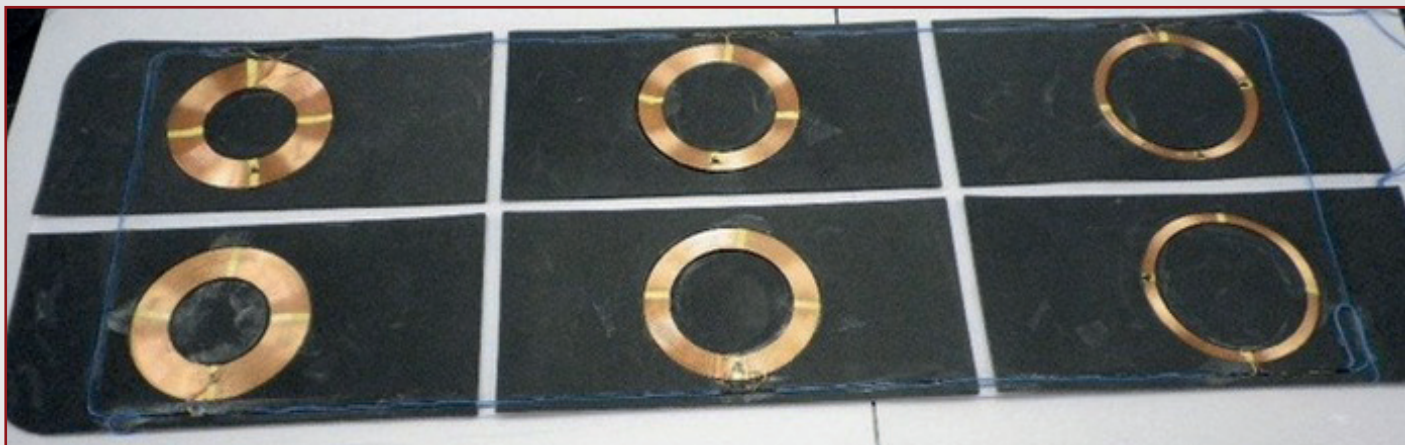
The coil layout varies between a defined coil positioning and quantity using solid, non-insulated copper coils or mesh wire, twisted equally from the center to the edge of the whole body applicator.

The field exposure varies from a homogenous field over the complete surface of the applicator to graduated exposure depending on where the coils are placed and how many windings the coils contain of (= controlling the strength of the field).

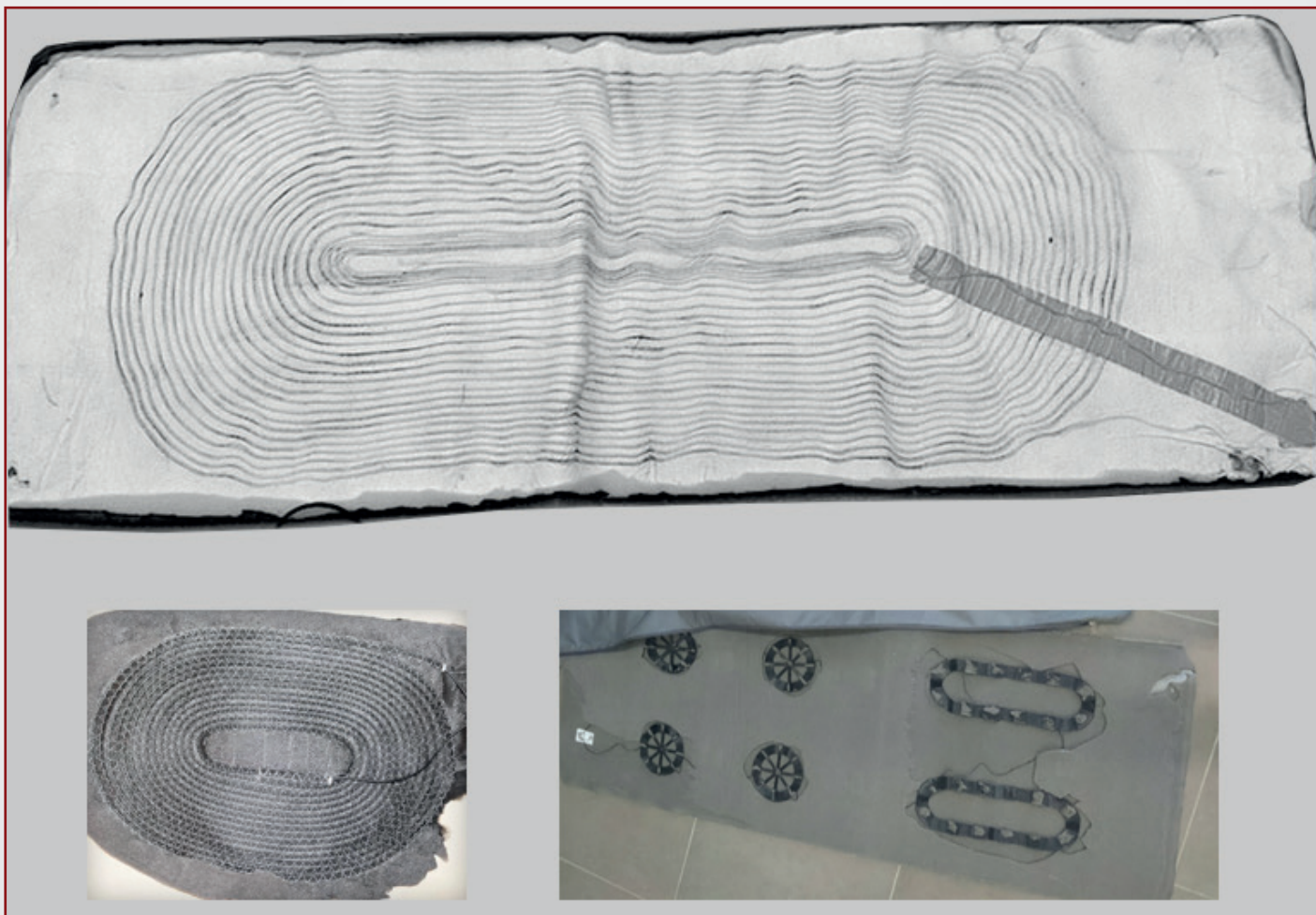
iMRS and Omnium1 systems are using the highest standard of non-insulated copper coils with a very specific layout creating an increasing electromagnetic field from the top to the bottom of the whole body applicator. This mimics the concept, how we as human beings are receiving the electromagnetic field of the earth (higher at the feet (= bottom), lower at the head (= top)). The delivery of the applied electromagnetic field properties and the induction capability are hereby extremely efficient.

No competitive system on the market delivers this combined and highly effective solution!

iMRS / Omnium1 whole body applicator:



Competitor Example:



Local Applicators (Pad, Pillow, Spot):

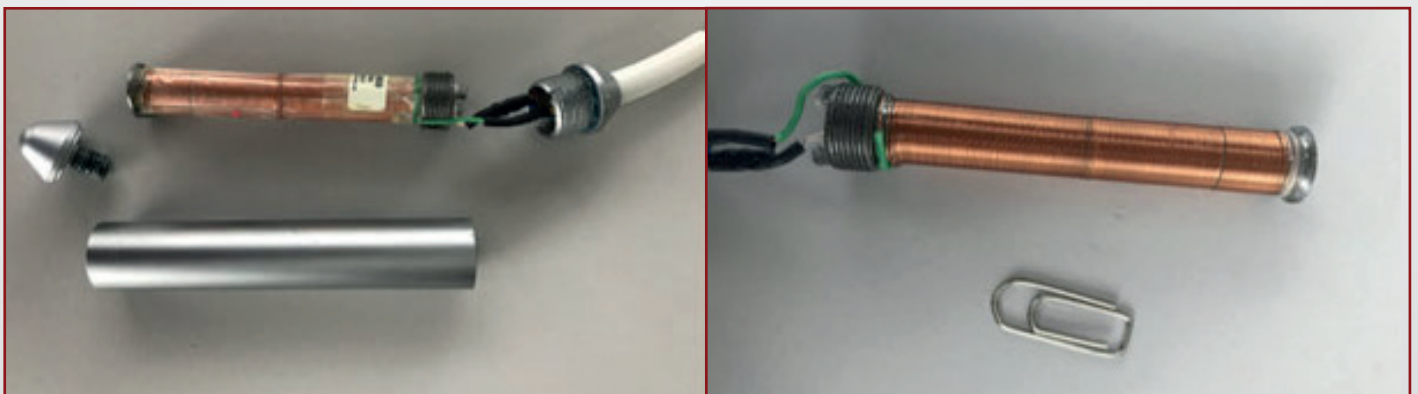
Both coil concepts (non-insulated, pure copper coils as well as twisted mesh wire) are used from various manufacturers. In terms of efficiency and induction capability the same properties apply as explained for the whole body applicator designs. Local applicators usually deliver higher field strengths (= Intensities of the applied electromagnetic field) and are designed to be used for local applications. iMRS and Omnium1 local applicators all contain one equal pair of non-insulated copper coils with the same amount of windings delivering a highly inductive and quiet homogenous field exposure over the surface of the applicator. The Omnium1 OmniSpot has a specific design allowing the user to wrap the two coils around the application area and create the so called “Helmholtz-Effect” (https://en.wikipedia.org/wiki/Helmholtz_coil) The Helmholtz Effect produces a region of a nearly uniform magnetic field in the center of the two coils and is therefore highly effective for local applications!

Again, no competitive system on the market delivers this combined and highly effective solution!

Punctual Applicator (Probe iMRS):

The iMRS probe contains a metal core with a defined amount of non-insulated copper coil windings around it. It is covered with anodized metal and creates the highest field strength and induction capability of all available applicators within a very narrow area. The electromagnetic field exposes equally in all directions and guarantees high efficiency when applied on specific spots. In addition the probe can also be utilized for electromagnetic acupuncture by positioning the tip on the designated meridian(s).

The iMRS probe applicator design is unique in the entire PEMF market!



2. Applied Waveforms (Sine Wave, Square Wave, Sawtooth etc.)

To understand the various waveforms it requires at least some basic physical education. In general the waveform(s) of a low-pulsed PEMF device is/are very crucial when it comes to efficiency and health benefits. The waveform defines the way, how the information (= frequency) will be delivered from the sender (= applicator) to the receiver (= user). The plainest waveform is the so-called Sine Wave. Sine Waves are delivering frequencies one at a time in sequence, i.e. 20HZ (Hertz = unit for frequency) = 20 vibrations/sec. Because of its even and rounded waveform, Sine Waves tend to subside without delivering a remarkable force. Low-pulsed PEMF systems, solely delivering Sine Waves, are outdated and by far less effective than systems with more complex waveforms. Their capability of creating over waves (= harmonics) is limited to even numbers of the basic frequency and therefore inappropriate for overall health and wellness effects.

A rectangular pulse shape (= Square Wave) is characterized by a steep ascending and descending phase and therefore capable of transferring by far more energy than a Sine Wave. Another property of Square Waves is, that they create over waves (= harmonics) in the uneven range. Square Waves are mostly effective with local applicators due to the high-energy transfer (= induction capability) and at the same time, limited frequency range.

The most complex and at the same time most effective waveform for whole body exposure is the so-called Sawtooth waveform. Sawtooth vibrations are created through very complex and sophisticated patterns of Triangle and Square Waves. They are characterized by a continuous rise followed by a sharp drop. The Sawtooth pattern is the ideal and only choice for overall health and wellness effects (whole body application) as it is the only waveform creating even AND uneven harmonic over-waves. Therefore the applied frequency spectrum per time frame is by far higher, the probability of resonating effects is highly increased comparing to any other known waveform.

iMRS and Omnium1 Systems are both delivering highly sophisticated Triple Sawtooth patterns (3 times more over-waves!!) with the whole body applicator and stand for another unique property of a PEMF system!

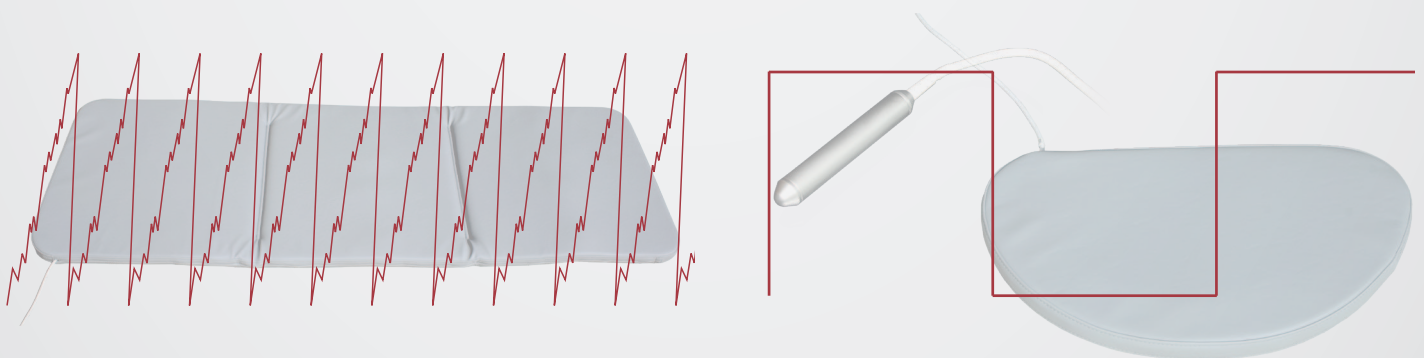
Here a typical example of a misleading and simply false comparison chart of one of our friendly competitors (found on the web):

Frequency Range	1 – 30 Hz	0.5 – 25 Hz
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The green basic frequency range describes the unit of the competitor and the values right beside displays the basic frequency range of the Omnium1/iMRS. First impression: The competitor device seems to deliver the wider frequency range, however, this device is solely exposing Square Wave patterns while the iMRS/Omnium1 delivers a Triple Sawtooth pattern! Correct Evaluation: The total frequency range of the iMRS/Omnium1 is by far greater as it delivers all even AND uneven harmonics whereas the competitor device only delivers uneven harmonics. Therefore the probability to create resonating effects with all body cells is by far greater with the Triple Sawtooth compared to a Square Wave. Sine Wave and Square Wave patterns are by far less efficient with whole body applications!

There are still other competitors, who are utilizing other, mostly undisclosed “patented” waveforms and therefore a serious comparison to physically known waveforms is neither possible nor objective!

The iMRS and Omnium1 devices are the only available systems delivering two different waveforms in one unit (Square Wave for local applications and Triple Sawtooth for whole body applications)!



3. Applied Field Intensities = Amplitude (unit Gauss or Tesla)

Electromagnetic field Intensity describes the created force around an electrical charge. It consists of a direction (poles) and the strength (= magnitude). In the world of therapeutic PEMF devices we differentiate between two major groups: High Intensity systems and low to very low intensity systems. High intensity systems deliver field strength of multiple Tesla compared to low PEMF systems, which usually deliver intensities in the micro-Tesla or even pico-Tesla range (very low PEMF systems). High Intensity devices are mainly used in clinical applications, such as rTMS (repetitive TransCranial Magnetic Stimulation, FDA approved) fighting depression and also for certain applications such as non-union and delayed union fractures and bone growth stimulation, both FDA approved. CT Scan diagnostic systems are also utilizing high intensity electromagnetic field exposure.

Another group of High Intensity Devices is again rising and recently several distributors are actively promoting those units for home use on the web! **Beware of such systems:** Named as TeslaFit, PMT120, MagnaWave, Ringer Units etc. the manufacturers claim all kinds of health benefits and miracles. Today they even “BUY” medical doctors, who abandoned their license in order to use their title to advertise such devices and get paid for it.

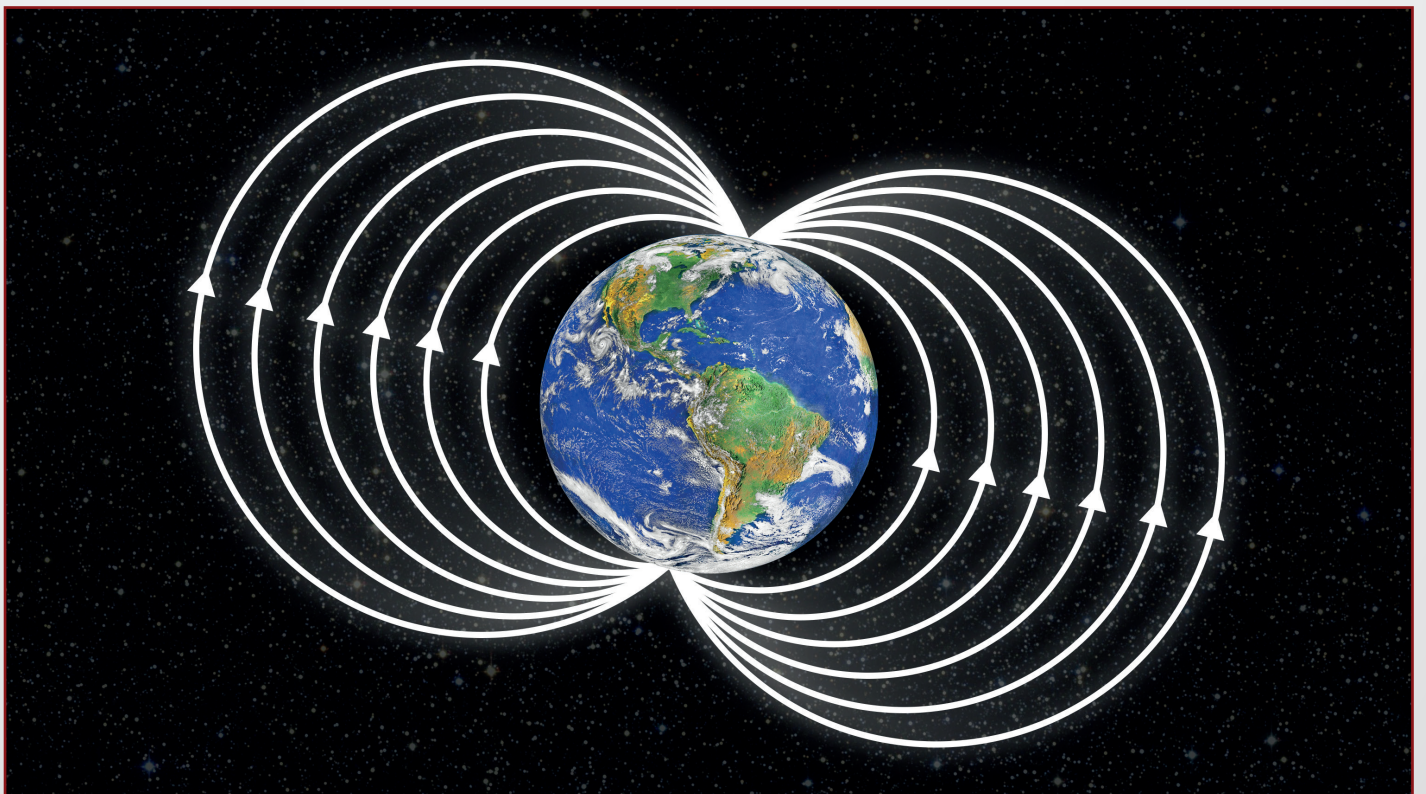
Fact is, those devices are dangerous due to its very high intensities and solely belong in the hands of trained, skilled and experienced staff for specified conditions, definitely NOT a solution for home use without monitoring. In addition those devices do not carry any compliance certificate for electric safety and electromagnetic compatibility, they were officially banned by the FDA since 2005 (<https://www.seattletimes.com/seattle-news/public-never-warned-about-dangerous-device/>) and the available devices are totally overpriced and very poorly equipped with outdated electronic and electric components.

Low pulsed electromagnetic devices usually range between 0.1 and around 1000 micro-Tesla, depending on the brand and the attached applicator. Those intensity ranges are considered to be safe by law, even for continuous application and do not harm. By evaluating the published studies and trials on PEMF, we can find all kinds of positive results with all kind of intensities and frequency ranges. It seems even, that PEMF is helping almost for everything. Please be aware, that “TRUE” clinical studies with PEMF are never related to a specific brand but always to the applied properties (frequency range, intensity, waveform, duration of appli-

cation)! A particular PEMF brand does not create a positive effect, the applied properties do! In case you are willing to research, please consider this advice as crucial! It is also imperative to understand the difference between an independent study and an “industry-friendly” study. Independent studies are peer-reviewed and conducted by independent sources who do not have a industry or financial interest in the product. For example: all studies that we have to provide to Health Canada in order to show that our device does what we say it does: «reduce pains and aches and increase blood circulation” had to be independent studies using the parameters of our device. In contrast, when you read studies about other PEMF devices, almost all of them are “industry friendly” studies, initiated and paid for by the manufacturer for the purpose of selling one or more benefits of that device. These studies are focussed on outcomes and any negative or non-existing benefits are omitted. Please be aware of this fact as we mentioned before: there are no valid studies with any devices only with parameters of devices.

Within the range of low pulsed electromagnetic systems the iMRS and Omnium1 delivers field intensities, which do not harm and at the same time mimics the known forces of naturally existing electromagnetic exposures (Earth Magnetic Field).

The iMRS and Omnium1 devices are exposing magnetic field strengths within the range of the earth magnetic field, which are considered to be safe and harmless by law while achieving remarkable overall health and wellness benefits!



4. Applied Frequency Spectrum (= summary of all exposed single frequencies depending on the applied waveform)

Frequency is defined as the content of information of an electromagnetic field. In physics it means, the higher the frequency, the stronger the delivered energy. This might be the reason why constant exposure of high frequencies delivered by cell phones, cordless home phones, WIFI-routers etc. (in the Mega-Hertz and Giga-Hertz range) are causing health threatening effects. On the other hand we can rely on published research showing, that the human body resonates with a very specific and at the same time very low frequency range (roughly 1-25HZ), known as the so called “Biological Window” (Bawin and Adey 1976). Those findings are also correlating with the prevailing brain wave patterns (0.1-25HZ) triggered by an EEG. In order to initiate the best possible resonating effect and create overall health and wellness benefits, modern PEMF systems shall at least deliver a frequency range within these described patterns. On top and in order to increase, refine and optimize the resonance factor (= probability concept), it is crucial and necessary to multiply the amount of harmonic frequencies (over waves) by using the proper waveform, in this case Sawtooth or even Triple Sawtooth! This will result in a very high chance to trigger a resonance effect with almost all 75 trillion cells within a human organism and increase efficiency tremendously.

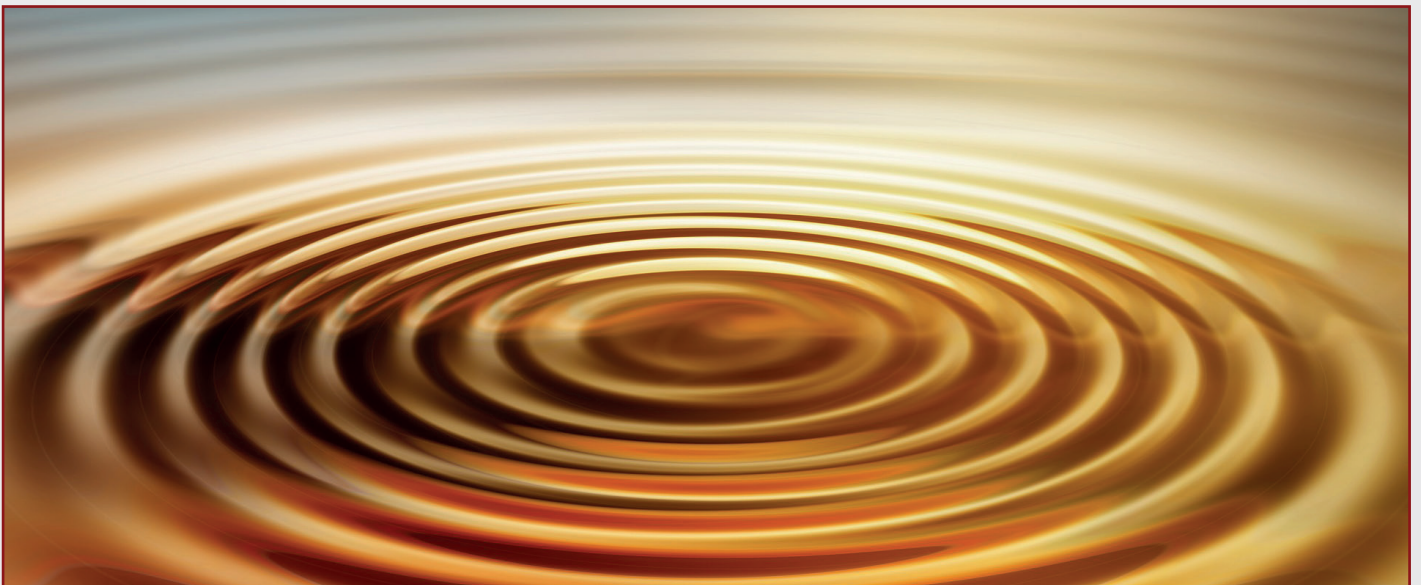
The iMRS and Omnium1 systems are delivering the broadest range of biologically relevant frequencies including countless harmonic over waves of all known devices in the market!



5. Resonance Properties (= ability of the living organism to “respond” to the receiving information)

Resonance is the key in order to create a beneficial effect of PEMF on a living organism. The receiver of the information has to be capable of understanding the message and start creating action! Unfortunately there is no research as of today showing which particular frequency creates resonance together with a particular organ cell. Therefore a modern low-pulsed PEMF device with the approach to create holistic health and wellness effects needs to deliver a high amount of naturally based frequency bundles to guarantee the best possible resonance effect (= highest probability).

The iMRS and Ommnium1 systems deliver the highest amount of biologically relevant, harmonic frequencies!



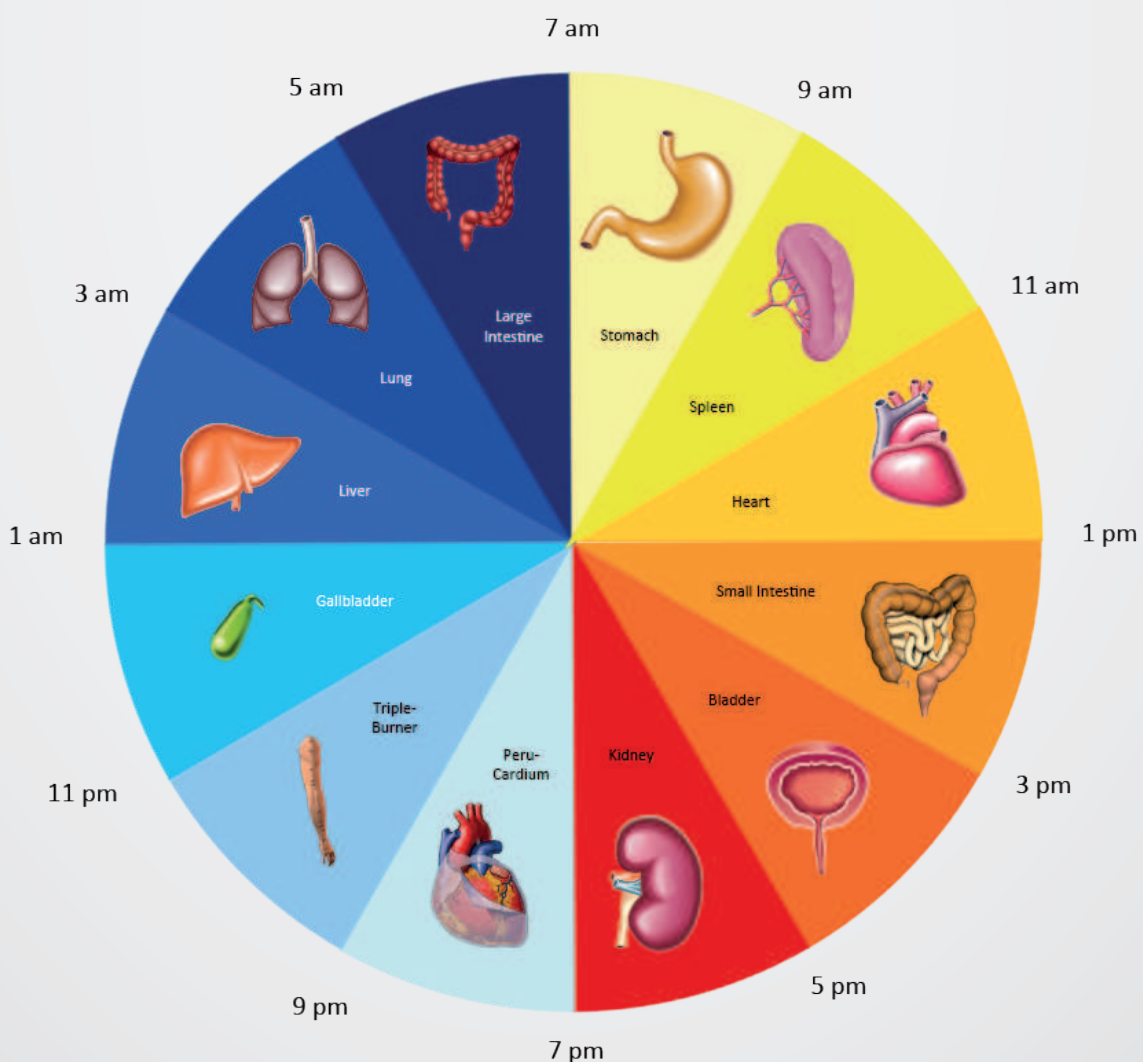
6. Integrated additional features (Biorhythm preferences = Organ Clock, pole shift of the applied magnetic field, preprogrammed application settings, accompanying applications etc.)

Most available PEMF devices are solely designed to deliver electromagnetic field exposure within a defined frequency and intensity range together with one or

more waveforms. Considering the details, there are small but mighty properties, which can make a huge difference in the efficiency of an application/device. Research shows, that living tissue seems to only consistently interact over time, whenever the applied signal changes its properties from time to time (preventing the fatigue effect). This can be achieved by the characteristics of the applied waveform (constant rise and fast fall times) and also by changing the direction of the magnetic field (South to North, North to South).

A true milestone in medicine is the discovery of molecular mechanisms controlling the circadian rhythm (Nobel Prize in Medicine 2017: https://www.nobelprize.org/nobel_prizes/medicine/laureates/2017/press.html). Based on this research, it makes total sense to adjust frequency ranges according to the time of the day a PEMF application is performed.

The iMRS/Omnium1 systems are the only systems in the world with a built-in N/S magnetic pole shift (every 2 minutes) together with a circadian rhythm frequency adaptation (Organ Clock).



We may also be able to increase and accelerate the holistic health and wellness benefits by utilizing additional holistic modalities in simultaneous conjunction with a PEMF application. Brain Wave Entrainment is one of the well-researched and accompanying modalities. While applying an electromagnetic field to the body, a simultaneous brain wave entrainment session can be performed using customized RGB-goggles with built-in earphones in order to receive specified light, color and sound frequencies. This approach extends the overall wellness effect to the brain and saves time!

The iMRS/Omnium1 systems are the only PEMF systems in the world with the capability to simultaneously control and perform PEMF AND Brain Wave Entrainment!



Biofeedback is a new approach to learn more about our body's function and to evaluate certain parameters for performance and further diagnostics. Modern sensor technology serves as the basis for developing new modalities to monitor and evaluate measurable biofeedback parameter such as heart rate, skin resistance, breathing, sleep, muscle activities, balance etc. and calculates algorithms for diagnostic conclusions. Monitoring the autonomic nervous system via HRV evaluation (Heart Rate Variability) during a PEMF session leads to a more customized application and based on the constant HRV calculation, the intensity patterns may be automatically adjusted by the PEMF system during a session.

The iMRS system is the only available PEMF device with an integrated, HRV-based, monitoring system allowing the user to perform a self-controlled session by evaluating the reaction of the autonomic nervous system and automatically adjusting intensity levels if necessary!



You may finally consider the following facts:

1. A serious, transparent and sustainable PEMF manufacturer/supplier will provide you with personal customer support, a physical address and presence in the designated country and staff to whom you can talk!
2. A serious, transparent and sustainable PEMF manufacturer/supplier will provide you with official documents proofing compliance in regards to electrical safety and electromagnetic compatibility (so called CE-Certificate, CB-Certificate = International, UL-Certificate = USA only, CSA-Certificate = Canada only)!
3. In case a PEMF device is promoted and advertised as a medical device, the manufacturer is obligated to provide you with the related certificate (FDA-Listing or FDA Approval for USA, Health Canada License for Canada, EEC 93/42 for European Union!
4. A serious, transparent and sustainable PEMF manufacturer/supplier will provide you with a valid liability insurance policy upon request for clients and reps within the countries the products are marketed!
5. A serious, transparent and sustainable PEMF manufacturer/supplier will never make illegal, false or misleading claims in regards to their products!
6. Beware of Vendor Websites, where you find only an email address in their contact form!





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