



# Lies and Myths about PEMF

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FACTS

MYTHS



**Learning about PEMF (pulsed electromagnetic field) treatment can be very confusing. Today, there is a huge amount of information available about various kinds of systems. Much of it is conflicting. Since the Internet is freely available for anybody, a large variety of information is spread. Poorly informed individuals post opinions, as well as manufacturers and professionals. Even the professionals have varying opinions from other professionals. Time to clear some fog and take a look at the most common lies and myths about PEMF!**

## **1. High intensity PEMFs are bad for you.**

The people who make this claim have completely ignored the scientific literature. There is a large amount of research supporting the use of high intensity PEMFs especially in the treatment of depression. In fact, research looking at high intensity PEMFs to the brain supports their safety as well. However, high intensity PEMFs belong in the hands of clinicians and professionals and are nothing for home use.

## **2. Only high intensity PEMFs work.**

There are those who also claim that high intensity PEMFs are the only kinds of PEMFs that work. They also ignore a large amount of research demonstrating that lower intensity PEMFs are effective across a vast range of health problems and maladies. In fact, extreme low intensity PEMFs may be most effective for health maintenance, for people with significant electrical or EMF sensitivity, and for improving circulation among other benefits.

## **3. Only certain waveforms are effective.**

A magnetic field impulse represents an electromagnetic signal, which depending on the intention, is to cause an action in the cell, i.e. depolarization. While many devices use specific waveforms, the waveform is likely less important than the amount of charge it can induce in the body. Rectangular or sawtooth impulses have e.g. a steeper ascending and descending phase than sinus waves with the result that they transfer a great deal of force. However, the bottom line is that some waveforms may be more efficient for charge production than others but not exclusive.

## **4. A specific frequency is the only one that works.**

A vast range of frequencies has been tested in research to treat a wide range of health conditions. Numerous frequencies have been found to be effective for many individual conditions. There is no specific frequency that will solve all problems or help every health condition. On the other hand, the higher the frequency, the more energy is provided. However, the higher

the frequency, the more difficult it is to gauge the effect on the cell. This particularly applies to man made frequencies in the KHz and MHz range, e.g. for cordless phones and electrical devices. The new generation of magnetic field therapy equipment preferably works in the extremely low frequency range. Again however, they are not likely to be exclusive in their benefits.

## **5. You should only use „earth-based“ frequencies.**

A number of manufacturers claim that their systems are more effective because they use „earth-based“ versus other types of frequencies. Most of the time these earth-based frequencies are not defined. The fact is that the earth itself naturally includes a vast range of frequencies. These include those in the ionosphere, the so-called Schumann resonances, ranging from 1 - 100 Hz, as well as those entering the polar regions from space, those emitted from natural materials, the rays of the sun, and many others. Even the static magnetic field of the earth varies, not only day-to-day but also around the planet. Even the so-called 7.8 Hz Schumann Resonance is not the only Schumann resonance, but various harmonics exist naturally.

## **6. You only need to treat yourself 8 minutes at a time.**

A number of magnetic systems promote the use of 8-minute treatment times. There is no solid evidence to support this claim. A large number of studies have used various treatment times with great benefit. Studies are often limited by very practical considerations and optimal treatment times are hard to define. Ultimately, the individual determines the amount of treatment time to which to commit.

## **7. There is a limit to how much treatment time can be used.**

Many PEMF systems advise a maximum treatment time per day. Often this is based on the practical limitations of the engineering of the PEMF system. As with many other treatment modalities, treatment times may need to be longer and more frequent at the beginning of use for specific problems. As improvement is seen, treatment time and how often they are done can be stretched out until finally periodic maintenance treatments are all that is necessary. The amount of treatment time and how often treatment should be performed will be individual. Some problems need more time. Often professional guidance is useful to determine the best course of therapy.

## **8. What's true for one PEMF system or signal is true for all.**

People frequently extrapolate results from research on unique and specific individual PEMF

systems, claiming these results as applicable to their own system. This may or may not be true. In research literature you will frequently see reviews of the research on various signals, intensities, actions, and conditions. Reviewers will make note of similarities and differences, where gaps in knowledge exist and future research needs. While many actions of PEMFs signals are common across many types of signals, they are not all necessarily exactly equivalent. Ultimately, one has to apply the signal most likely to be useful for a specific set of circumstances. While the research database PEMFs is already very extensive, it is by no means complete. There is no cookbook for what is best in a specific set of circumstances. So unfortunately, extrapolation is necessary, but should be considered with discrimination, relying on an existing knowledge base.

## **9. There is only one PEMF system that improves circulation.**

All PEMFs can improve circulation. Even a locally applied PEMF stimulator will, by reflexive action on the nervous system and chemical components of the blood, improve circulation throughout the body. Some manufacturers have documented improvements in circulation with their specific device, but this doesn't mean that others will not have the same action and benefit. Circulation improvements need to be put into perspective as well, given all the other actions and benefits of PEMFs, and should be considered only one component of the benefits, not infrequently the least important.

## **10. You can't combine PEMF treatment with other treatments.**

Practitioners of other modalities may say that you can't combine PEMFs with their modality. This is patently untrue. In fact, PEMFs, more often than not improve the benefits of other modalities. The combination of the use of modalities produces better results than either modality alone. The reason for this is that each modality has unique ways of action and providing health benefits. Health conditions almost always have multiple components as a cause or as part of their development. Any individual modality will provide benefit to a certain point by addressing specific actions particular to that modality. Therefore, addressing or treating conditions with multiple modalities provides the most likely, more complete benefit. Specific examples include, combining PEMFs with physical therapy, nutrition, or medications, among others.

## **11. There is only one optimal PEMF signal for a given condition.**

Even in circumstances where a particular signal is very effective for a given condition, a conclusion is often reached saying that a particular intensity or a particular frequency is the best. But, when taking a look at the research carefully one can often see that variations in

the parameters, frequency or intensity, still produce results. Be wary of anybody saying there is only one frequency, one intensity or one device that is effective for a given condition. One of the reasons for this is that any given condition, diabetes, for example, varies significantly from person to person. In ideal circumstances, the PEMF parameters would be adjusted for the individual and also for changes in a condition in an individual over time.

## **12. Electrical stimulation (ESTIM) is superior to PEMFs.**

Electrical stimulation has been available longer than PEMFs. Clinicians and researchers have more familiarity with electrostimulation and a better understanding of that modality. A major use of ESTIM is to stimulate muscle contractions. ESTIM can do this with less expense than PEMFs.

Electrostimulation can be applied not only in the home setting but also in other professional settings. Electrostimulation is the direct application of current to the body, using electrodes and conducting gels or liquids. Electrostimulation is often less expensive than PEMFs, but the major downside is the limit of its penetration into the body. To penetrate the body deeply, invasive techniques often are necessary to place electrodes deep in the body, such as in the brain or the spinal cord. ESTIM is often uncomfortable or even painful and also requires the skin or tissue to be exposed. PEMFs do not have these disadvantages. Application of PEMFs can be done without exposing the skin and directly exposing the body to electric currents. There is no risk of burning with PEMFs. Most of the time there is no sensation from PEMFs at all. In addition, PEMFs will go through clothing and through all the tissues of the body without being absorbed, used up or blocked by the body. As a result, PEMFs produce a much deeper penetration within the body.

## **13. Acupuncture is better than PEMFs.**

Neither is better than the other. All modalities have limitations and unique benefits. Acupuncture has been used for much longer in human history than PEMFs. There is no doubt about its value and use. However, there are many circumstances in which acupuncture has limited effectiveness. There are also many circumstances, supported by research, where PEMFs combined with acupuncture produce better results, than with acupuncture alone.

## **14. PEMFs shouldn't be used as part of cancer treatment.**

PEMFs should definitely not be considered as a sole treatment for cancer. There is research to indicate that PEMFs can be helpful as an adjunctive therapy in cancer treatment. People using PEMFs prior to receiving a diagnosis of cancer have often found significant benefits in reduction of side effects and improvements of benefits from their conventional cancer therapies.

## 15. PEMFs are hazardous or dangerous.

People sometimes lump therapeutic PEMFs with environmental EMFs. PEMFs have a long history of use, over 50 years or more, by millions of people. Even very high intensity PEMFs, such as MRIs and more recently FDA approved high intensity transcranial magnetic stimulation applied across the brain, have been shown to be extraordinarily safe. One of the concerns about PEMFs is that they may cause cancer. However, PEMFs have even been found to be valuable as part of cancer treatment programs. The most common contraindication for using PEMFs is in pregnancy. This is not to say that PEMFs are harmful in pregnancy, it's just that they have not been formally studied.

Environmental EMFs, produced by cell phone, microwaves, Wi-Fi and other man made electrical devices are a very different kind of PEMF.

Therapeutic PEMFs have very low frequencies under 1000 Hz. The frequencies in the microwave range, which is what most environmental frequencies are today, are absorbed by the body and could create heating and inflammation. These are considered to be the reasons that environmental EMFs have the risk of harm but not therapeutic PEMFs.

To give perspective, therapeutic PEMFs have been studied in hundreds of thousands of individuals across thousands of studies, with almost all studies concluding that there are no significant side effects or risks of harm. If people follow appropriate application and consideration of precautions and contraindications, the risk of harm is dramatically outweighed by the potential benefits.

**I hope I was able to clean up with a few of the most common lies and myths circulating about PEMF issues. In general, it is in the nature of humans to question and I can only recommend to anyone to acquire their own knowledge and form their own opinion.**

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