PEMF therapy and sports injury recovery

One of the most important lessons to be learnt regarding the use of electromagnetic therapies, is to clearly understand the actions they have in the body. These actions happen in all bodies every time PEMFs are used. This is regardless of the underlying causes or conditions a person has. Most diseases or health conditions have very common components to them. The body has a somewhat limited repertoire of reacting to damage, injury or illness. The most commonly described actions of PEMF's include: pain reduction, reduction of swelling, decreasing the irritability of nerves, relaxing muscles, improving circulation, various metabolic effects, detoxification, cell membrane charge balancing and stimulation of repair by stimulating RNA and DNA. PEMF's also have reflexology and acupuncture like actions in the body.

The question for any given condition is what components of these actions of magnetic fields exist in that condition or body. Of course we don't always know completely what may be going on. But, you can be certain that there are many of these components present. The Magnapulse/Magnafield will create changes in some of these individual actions while providing less change to other actions. In the medical model, you would have a specific device for each specific action. This clearly becomes impractical and way too expensive. For this reason it is preferable to use devices that have general responses in the body and let the body decide what it needs and how it will respond.

USING THESE CONCEPTS, YOU CAN BEGIN TO THINK ABOUT HOW ATHLETES MIGHT BENEFIT FROM PEMF'S.

At the very least athletes need to have their muscles working in an optimal fashion. This is important to maintain structural integrity and maximize performance of the body for their particular sport. Maximizing performance decreases the risk of injury, irrespective of winning a competition. The biggest health risk to the athlete is injury. So, PEMF's would ideally be used by athletes to maximize function of the body and at the same time reduce the risk of sports injury and to help the body recover faster from any injuries. With these ideas, it is recommended that athletes use whole body magnetic stimulation before and after workouts, tryouts, and at any level of competition. Using PEMFs before competition causes the body to be optimized in its function. This will produce better performance. It's been found that muscles work harder, longer and recover faster with magnetic stimulation. Also once used, muscles become sore and often tense or have spasm. A classic action of magnetic fields is to reduce muscle contraction. Athletes often have to compete and work out despite their injuries, large and small. This is why regular use of magnetic fields is so important to any high level, or even weekend, athletes.

Athletes as old as 40+ can still compete at a world-class level because of continuing use of PEMF's. A story recounted by a physician who was a team doctor for a US Olympic team told that it would typically take the US team 2 to 3 days to recover from competitions. He noticed that the then East Germans and Russians would be back the next day like robots without showing any of the effects of tiredness or injury. When he went past their camp he noticed that they were all using some sort of stimulation devices, most likely barrel type coils. These were not illegal and were not considered to be doping. Essentially they were magnetic therapeutic systems that help to wash the stress out of the body and reduce swelling and muscles and remove lactic acid.

Research shows that PEMFs stimulate a process called myosin phosphorylation. This is the process of energy production in muscle. Phosphorylation produces ATP. ATP is essential for cell energy. Depleted ATP creates weak muscles. Workouts and a lot of strenuous muscle activity, deplete ATP. Rest restores ATP, assuming the body has the building blocks necessary to replenish it. PEMFs restore ATP by stimulating myosin phosphorylation. Another aspect of muscle injury and tissue damage from exercise or athletics, is a protein called HSP or heat stress or heat shock protein. Muscles that are very active are stressed and therefore need higher levels of heat stress protein. Heat stress protein is not just for heat. It was discovered that when you damage a cell by heating it, heat shock protein is produced. It was also discovered that if you induce heat shock proteins in advance of potential damage, using stimulation techniques that are very gentle, you will reduce tissue damage. There is now research going on to use magnetic devices to stimulate heat shock proteins in heart muscles prior to open-heart surgery. Open-heart surgery obviously causes heart muscle damage. Preliminary research indicates that stimulating heat shock proteins decreases muscle damage from open-heart surgery, improving results and postoperative recovery.

Pulsed electromagnetic fields can also increase the uptake of oxygen into muscle. Research conducted with PEMF devices show at least a 1% increase in local tissue oxygen uptake. A 1% increase in oxygen uptake can significantly enhance muscle performance and endurance. In competitive sports a 1% edge may be all that is needed to win. With any injury, the body will take its usual time to repair. It is known from the use of FDA approved devices, that fractures will heal in approximately half the time – so will open wounds, including surgical wounds. Even in massive trauma, animals exposed to PEMF's will often survive, versus those that don't get PEMF treatment. Large bruises disappear rapidly with the use of pulsed magnetic fields. All injuries produce swelling in the tissues, as does exercise on its own. Swelling delays the ability of the tissues to be nourished with oxygen and nutrients. This is why you see athletes frequently being treated with ice packs. Ice packs reduce superficial swelling. Swelling or bruising deep in a quadriceps muscle will not respond as well to ice. To effectively ice tissues deep in muscle you would cause freezing of the muscle on the outside thus causing harm to those tissues. The risk versus benefit isn't acceptable. PEMFs on the other hand penetrate tissues deeply without risk to the superficial tissues to create their benefits. The PEMF's reduce swelling and speed removal of the blood in a bruise, leading to faster recovery and return to activity, competition or training. Obviously, if treatment is applied early in the injury, recovery will be much faster. Once a lot of the effects of damage are settled into the tissue it takes more energy and longer to heal the tissues.

CONCLUSION:

All athletes, professional, amateur or "weekend warriors" should be using daily whole body PEMF stimulation. In addition, the treatment of any injuries with PEMF's accelerates even subtle healing, allowing the athlete to be healthier, stronger and perform better.

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