

Research Article

Bio-Electro-Magnetic-Energy-Regulation: An Astonishing Increase in Blood Flow

David O. Draper^{1*}, Chris Allen² and Brock L. Roberts³

¹Department of Exercise Sciences, Brigham Young University, Provo, UT, USA

²Chris Allen. Technician and Marketing Director, -250°Cryotherapy, Orem, UT, USA

³Owner, -250°Cryotherapy, Orem, UT, USA

*Correspondence to: David O. Draper, Department of Exercise Sciences, Brigham Young University, Provo, UT, USA, Tel. 801-422-7866; Fax: 801-422-0555; E-mail: David_draper@byu.edu

Received: May 21, 2018; Accepted: May 25, 2018; Published: May 28, 2018

Citation: Draper DO, et al., Bio-electro-magnetic-energy-regulation: astonishing increases in blood flow. 2018; 1(1): 1-3

Abstract

BEMER therapy uses electromagnetic energy to treat a myriad of conditions including, but not limited to, pain, spasm, and cases of irregular blood flow. The major influence of BEMER on the body is an astonishing increase in microcirculation of blood in the capillaries. The BEMER as a therapeutic medical device, comes from Europe, and has been utilized in other regions of the world for almost 20 years. Aside from treating athletes and weekend warriors for improving cardiac function, physical fitness and a sense of well-being, BEMER is being used by NASA. The BEMER material has been built into spacesuits for astronauts. Because of the lack of gravity in space, astronaut's muscles atrophy. It has been found that astronauts who wear the BEMER experience less muscle atrophy, and less bone-density loss than those who don't use the BEMER in space. There are a myriad of benefits to individuals who use BEMER including, decreased inflammation, swelling and pain. Increased mental focus, quality of sleep, energy, speed of healing, bone healing and blood flow via microcirculation.

Key words: BEMER, microcirculation, blood flow, recovery

Introduction

BEMER therapy uses electromagnetic energy to treat a myriad of conditions including, but not limited to, pain, spasm, and cases of irregular blood flow. The major influence of BEMER on the body is an astonishing increase in microcirculation of blood in the capillaries.¹

The BEMER as a therapeutic medical device, comes from Europe, and has been utilized in other regions of the world for almost 20 years. BEMER therapy is also used for well-being, improved cardiac functions and physical fitness. The BEMER material has been built into spacesuits for NASA astronauts.¹ Because of the lack of gravity in space, astronaut's muscles atrophy. It has been found that astronauts who wear the BEMER experience less muscle atrophy, and less bone-density loss than those who don't use the BEMER in space. In March of 2015, an official licensing agreement was made between NASA and BEMER. This agreement stated that its purpose was to develop a space suit prototype, which improves microcirculation while preventing bone and muscle atrophy during space missions. It would also assist recuperation after space travel.

Besides astronauts, the majority of the global population benefit from using BEMER including universities, professional athletes, clinics, and chiropractic offices. Only good, functional circulation ensures proper supply of nutrients and oxygen as well as waste removal within the body. This is fundamental for all metabolic processes. On this basis, it is clear what a critical role the circulatory system plays in well-being, and why BEMER is such a powerful tool.

BEMER Effect on Blood Flow

There are over 70,000 miles of capillaries in the body. If they were laid out in a straight line they would circle the earth almost three times). They are the tiniest vessels in the body, but have the biggest job. It is through them that the BEMER signal is designed to aid the body in restoring functional blood flow, oxygen and delivery of nutrients to all the cells in the body; to sustain cellular health, eliminate waste, increase performance, repair and regeneration of injured tissues.

The body's circulatory system ensures the survival of the organism by facilitating metabolism in each and every cell. This helps maintain the self-regulatory mechanisms. First, blood transports oxygen from the lungs to the cells and exchanges it for carbon dioxide to be removed as waste. Second, it transports nutrients such as fats, carbohydrates, or proteins from the digestive tract to the individual tissues where they can be consumed, processed, or stored as needed. The resultant metabolic waste products, are then transported to other tissues and finally to the excretory organs such as the kidneys and colon. In addition, blood distributes hormones, immune cells, and other signaling molecules. The human body's circulatory system is essential for providing the raw materials needed for energy production as well as physical and mental performance. Cells rely on the blood to deliver and remove what they need in order to perform their essential functions. Be advised that the depth of penetration into the body depends on the level of intensity. Lower intensities achieve superficial penetration, whereas intensity level 10 achieves the greatest penetration into dense tissues like bones.

Benefits of BEMER

Specific effects attributed to BEMER are: ²⁻¹⁵

- Decreased inflammation
- Increased mental focus
- Increased quality of sleep
- Increased relaxation
- Increased strength
- Increased endurance
- Increased energy
- Increased speed of healing
- Increased cartilage repair
- Increased recovery rate from exercise
- Reduced peripheral numbness
- Relief of nerve pain
- Relief of general fatigue
- Relief from Chronic Regional Pain Syndrome (CRPS)
- Relief from minor and significant discomfort (pain)
- Relief from chronic blood sugar regulation side effects
- Enhanced wound healing
- Enhanced bone healing
- Reduces head aches
- Speeds healing in eyes with degenerative conditions
- Enhances the body's nutrient and oxygen supply and waste disposal
- Reduction of progression of certain skin conditions
- Stress reduction
- Increased general blood flow
- Decreased fatigue in patients with multiple sclerosis

BEMER Application

A typical clinical session on the BEMER consists of using a therapeutic B.Body Mat which the patient lays on. (Figure 1) The B.Body Mat delivers the BEMER signal to the entire body. When a focused treatment is desired on smaller areas of the body, the B.Pad is used. (Figure 2) This applicator can wrap around a limb (e.g. knee, ankle, elbow, etc.), the torso, or head. (Figure 3) The BEMER is turned on, and the patient will receive an 8 minute general treatment to the body and a 20 minute localized treatment to the area that the B.Pad is wrapped around. After the 20 minute treatment, the BEMER automatically shuts off.

Cases of Patients Who Used BEMER to Treat Their Conditions.

A 26 year-old male, professional athlete, was injured during a sporting activity. The accident resulted in 9 cracked ribs, including separation of the ribs from the sternum, significant bruising and difficulty breathing with pain levels at 8 and 9 (on a numerical rating



Figure 1. The BEMER device showing the B.Body Mat that the patient lays on. This Mat delivers an 8-minute generalized treatment to the entire body.



Figure 2. The BEMER showing the B.Pad used for localized treatments. This pad delivers a 20 minute treatment to a targeted area.



Figure 3. A patient with a rhomboid strain is being treated with the BEMER using the B.Pad wrapped around the torso. The Pad delivers a 20-minute treatment to the small area of the body that the patient wants to focus on.

scale of 0=no pain, and 10=severe pain). After this accident, the patient started receiving BEMER therapy on a daily basis, which resulted in dramatically increased healing. Within one week, the patient was able to start training again, and within three weeks, the patient was able to engage in his highly demanding professional sport at a competitive level. This patient was so impressed with the results, that he purchased a BEMER for home use, and for when he was on the road.

An 82 year-old male, who was diabetic and had peripheral neuropathy with swollen and painful lower legs, reported to a local clinic. He had chronic pain and inflammation, to the point where *his physician said that if they did not get this issue resolved, amputation would be likely*. BEMER therapy, was strongly indicated, and so the clinicians began utilizing the B.Body Mat for two, 8 minute sessions per day and the B.Pad for four sessions per day for 20 minutes each. The pain in the lower legs was reduced from an average of 8 to an average of 3 over the next several weeks. At this time, the patient decided to buy the BEMER Pro unit for home use. At 7 months post introduction to BEMER, *the physician stated that amputation or other interventions, were not needed*, and the problem was mostly resolved.

Conclusion

The BEMER is a relatively new medical device that had been in existence for only 20 years. The device sends electromagnetic pulses into the body to treat a myriad of conditions. The major effect of the BEMER is an astonishing increase in blood flow in the micro vessels. The majority of the benefits of BEMER are attributed to its' increased blood flow to the bodies tissues. The BEMER'S price is \$4800.00 to \$7,000.00 making it affordable to most professional teams, universities, and clinics. Several people have purchased a BEMER for home use.

References

1. WWW.BEMERAMERICA.COM
2. Walther M, Mayer Mayer F, Kafka W, Schutze N. Effects of weak, low-frequency pulsed electromagnetic Fields (BEMER type) on gene expression of human mesenchymal stem cells and chondrocytes: an in vitro study. 2007; *Electromagn Biol Med*. 26(3): 179-190.
3. Moeller MJ. Streaming potentials as novel driving force for capillary permeability. *Biophys J*. 3013; 104(7): 1395-1396.
4. Klopp RC, Niemer W, Schmidt W. Effects of various physical treatment methods on arteriolar vasomotion and microhemodynamic functional characteristics in case of deficient regulation of organ blood flow. Results of a placebo controlled, double-blind study. *J Compl Integr Med*. 2013; 10: S39-S41.
5. Klopp RC, Niemer W, Schultz J. Complementary therapeutic stimulation of deficient autohythmic arteriolar vasomotion by means of a biorhythmically physical stimulus on the microcirculation and the immune system in 50-year-old rehabilitation patients. *J Compl Int Med*. 2013; 10: S29-S37.
6. Bassett CA, Mitchell SN, Gaston SR. Pulsing electromagnetic field treatment in ununited fractures and failed arthrodeses. *JAMA*. 1982; 247(5): 623-628.
7. Bassett CAL, Becker RO. Generation of electric potentials by bone in response to mechanical stress. *Science*. 1962; 137: 1063-1064.
8. Beaulieu K, Beland P, Pinard M, Handfield G, Handfield N, Goffaux P, Corriveau H, Leonard G. Effect of pulsed electromagnetic field therapy on experimental pain: A double-blind, randomized study in healthy young adults. *Electromagn Biol Med*. 2016; 35(3): 237-244.
9. Benazzo F, Cadossi M, Cavani F, Fini M, Giavaresi G, Setti S, Cadossi R, Giardino R. Cartilage repair with osteochondral autografts in sheep: effect of biophysical stimulation with pulsed electromagnetic fields. *J Orthop Res*. 2008; 26(5): 631-642.
10. Bohn W. The technological development history and current significance of the physical BEMER vascular therapy in medicine. *J Complement Integr Med*. 2013; 10(Suppl): S1-S3.
11. Bohn W, Hess L, Burger R. The effects of the physical BEMER vascular therapy, a method for the physical stimulation of the vasomotion of precapillary microvessels in case of impaired microcirculation, on sleep, pain and quality of life of patients with different clinical pictures on the basis of three scientifically validated scales. *J Compl Integr Med*. 2013; 10(Suppl): S5-12; S5-S13.
12. Durmus A, Cakmak A, Disci R, Muslumanoglu L. The efficiency of electromagnetic field treatment in Complex Regional Pain Syndrome Type One. *Disabil Rehab*. 2004; 26: 537-545.
13. Haimovici N. Influence of the neoformation of bone tissue by means of low frequency pulsed magnetic fields. *Prog Clin Biol Res*. 1982; 107: 247-255.
14. Harden RN, Bruehl S, Stanton-Hicks M, Wilson PR. Proposed new diagnostic criteria for complex regional pain syndrome. *Pain Med*. 2007; 8(4): 326-331.
15. Harper WL, Schmidt WK, Kubat NJ, Isenberg RA. An open-label pilot study of pulsed electromagnetic field therapy in the treatment of failed back surgery syndrome pain. *Int Med Case Rep J*. 2014; 8: 13-22.