

**SUCCESS WITH NATURAL  
FUNCTIONAL MEDICINE**

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- Doctor of Acupuncture & Oriental Medicine
- Dietician-Nutritionist
- Herbalist

  
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## CVD & BEMER PEMF

Studies Validating the Cardiometabolic Benefits  
Of Specific Low-Intensity, Low-Frequency  
Pulsed Electromagnetic Field Therapy

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# Cardiometabolic Syndrome

*A Group of Risk Factors for Cardiovascular Disease & Diabetes, now affecting at least 42% of US adults*

[academic.oup.com/pmj/article/99/1175/985/7076129](https://academic.oup.com/pmj/article/99/1175/985/7076129)

**Defined as Having at least three of these:**

**Hypertension, Insulin Resistance, Central Obesity,**

**High Triglycerides, Low HDL**



3



3

## Metabolic Syndrome: Specific Diagnostic Criteria

3+ of these for a positive diagnosis

Samson SL, Garber AJ. Metabolic syndrome. Endocrinol Metab Clin North Am. 2014 Mar; 43(1): 1-23. doi: 10.1016/j.ecl.2013.09.009. PMID: 24582089

### 1. Central Obesity

- Visceral / omental / organ fat. Waist size >40" in men; >35" in women

### 2. Dyslipidemia

- HDL-C <40 mg/dl in women; <50 in men; Fasting triglycerides >150

### 3. Hyperglycemia

- Fasting glucose >100 (HGB A1C >5.6?)

### 4. Hypertension

- Systolic BP >130; Diastolic >85

### 5. Insulin Resistance (no consensus on this as a marker)

- Fasting insulin >6



4

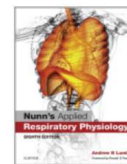


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## Nunn's Applied Respiratory Physiology (Eighth Edition)

2017, Pages 3-16.e1



# Microcirculation

The microcirculation is defined as the vessels that are devoid of a muscular layer and it commences with arterioles with a diameter of 75  $\mu\text{m}$  and continues through the capillary bed as far as venules with a diameter of 200  $\mu\text{m}$ .

From: [Nunn's Applied Respiratory Physiology \(Eighth Edition\)](#), 2017

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# Microcirculation



Muscle  
Fundamental Biology and Mechanisms of Disease  
Volume 2, 2012, Pages 1197-1206



William F. Jackson, in [Muscle](#), 2012

## Chapter 89 - Microcirculation

[William F. Jackson](#)

**"The microcirculation is the business end of the cardiovascular system.** It is in this branching network of microvessels that transport and exchange of heat, respiratory gases, nutrients, waste products, water and hormones occurs between blood and the body's tissues. Blood flowing in the microvasculature also carries leukocytes and lymphocytes to their tissue targets, and it is here that trafficking of these inflammatory and immune cells takes place between blood and tissue. Microvessels also importantly contribute to peripheral vascular resistance, vascular capacitance, and blood pressure regulation, and they are the effectors responsible for the control of blood flow to, and within the body's tissues and organs. Microvascular smooth muscle cells, or related pericytes, participate directly or indirectly in all of the listed functions of the microcirculation by controlling vessel diameter and hence local microvascular hemodynamic resistance, pressure, and luminal fluid flow."



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# The Significance of Microcirculation

**“Microcirculation is the most significant and functionally most important part in the human circulatory system. About 75% of the blood circulation takes place in the smallest blood vessels (<100  $\mu\text{m}$  in diameter), a process we call microcirculation. It is a fine yet vast network of tiny vessels, performing vital transport tasks: It supplies tissues and organs with oxygen and nutrients, transports hormones to their target organs and removes metabolic waste products and carbon dioxide. Microcirculation plays a crucial role in the fluid and cell exchange between blood and tissue and it is here, in the network of the smallest vessels, where the body's immune system first starts kicking into action. During this process, microcirculation uses its own regulatory mechanisms to manage the exchange of substances, fluids and tissue, adjusting it to the requirements of the target tissue. The most important part of this structure is the vasomotion of arterioles. Their rhythmic arteriolar vessel diameter changes determine the cell/blood mixture distribution to tissue.”**

- Guttermann et al. 2016; Klopp et al. 2013a; Levy et al. 2001



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## The Human Microcirculation

### Regulation of Flow and Beyond

David D. Gutterman , Dawid S. Chabowski, Andrew O. Kadlec, Matthew J. Durand, Julie K. Freed, Karima Ait-Aissa and Andreas M. Beyer

Originally published 8 Jan 2016 | <https://doi.org/10.1161/CIRCRESAHA.115.305364> | Circulation Research. 2016;118:157–172



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## Abstract

The microcirculation is responsible for orchestrating adjustments in vascular tone to match local tissue perfusion with oxygen demand. Beyond this metabolic dilation, the microvasculature plays a critical role in modulating vascular tone by endothelial release of an unusually diverse family of compounds including nitric oxide, other reactive oxygen species, and arachidonic acid metabolites. Animal models have provided excellent insight into mechanisms of vasoregulation in health and disease. However, there are unique aspects of the human microcirculation that serve as the focus of this review. The concept is put forth that vasculoparenchymal communication is multimodal, with vascular release of nitric oxide eliciting dilation and preserving normal parenchymal function by inhibiting inflammation and proliferation. Likewise, in disease or stress, endothelial release of reactive oxygen species mediates both dilation and parenchymal inflammation leading to cellular dysfunction, thrombosis, and fibrosis. Some pathways responsible for this stress-induced shift in mediator of vasodilation are proposed. This paradigm may help explain why microvascular dysfunction is such a powerful predictor of cardiovascular events and help identify new approaches to treatment and prevention.



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# Microcirculation is Vitally Important



Journal of  
Vascular Surgery

SVS

Society for  
Vascular Surgery

REVIEW ARTICLE | VOLUME 42, ISSUE 3, P574-581, SEPTEMBER 2005

Download Full Issue

## Evaluation of the microcirculation in vascular disease

Christopher J. Abularrage, MD • Anton N. Sidawy, MD • Gilbert Aidinian, MD • Niten Singh, MD •  
Jonathan M. Weiswasser, MD • Subodh Arora, MD

[Open Archive](#) • DOI: <https://doi.org/10.1016/j.jvs.2005.05.019>



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Insufficient blood flow through end-resistance arteries leads to symptoms associated with peripheral vascular disease. This may be caused in part by poor macrocirculatory inflow or impaired microcirculatory function. Dysfunction of the *microcirculation occurs in a similar fashion in multiple tissue beds long before the onset of atherosclerotic symptoms.*

Impaired microcirculatory vasodilatation has been shown to occur in certain disease states including peripheral vascular disease, diabetes mellitus, hypercholesterolemia, hypertension, chronic renal failure, abdominal aortic aneurysmal disease, and venous insufficiency, as well as in menopause, advanced age, and obesity. Microcirculatory structure and function can be evaluated with transcutaneous oxygen, pulp skin flow, iontophoresis, and capillaroscopy. We discuss the importance of the microcirculation, investigative methods for evaluating its function, and clinical applications and review the literature of the microcirculation in these different states.

“...microcirculatory dysfunction is associated with many cardiovascular disease states and seems to occur long before the onset of clinical symptoms.”



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## Diseases Related to Impaired Microcirculation

Peripheral vascular disease

Venous insufficiency

Diabetes mellitus

Estrogen metabolism

Hypercholesterolemia

Activity / exercise

Hypertension

Obesity

Chronic renal failure

Aging

Abdominal aortic aneurysms



Journal of Vascular Surgery  
Volume 42, Issue 3, September 2005, Pages 574-581



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Journal of  
Sleep  
Research



Sleep and microvascular function

## Sleep quality and duration are related to microvascular function: the Amsterdam Growth and Health Longitudinal Study

Thomas Bonsen, Nienke J. Wijnstok, Trynke Hoekstra, Etto C. Eringa, Erik H. Serné, Yvo M. Smulders, Jos W. R. Twisk✉

First published: 17 November 2014 | <https://doi.org/10.1111/jsr.12256> | Citations: 12

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### Summary

Sleep and sleep disorders are related to cardiovascular disease, and microvascular function is an early cardiovascular disease marker. Therefore, the relationship of sleep (measured in sleep quality and duration) with microvascular function was examined in healthy adults. Sleep quality was assessed with the validated Sleep Wake Experience List (SWEL) questionnaire. Duration of sleep was self-reported in an additional question. Microvascular function was measured using nailfold capillaroscopy. Linear regression analyses were used to examine the relationship between sleep and microvascular function. Potential confounders included physical activity, smoking, blood pressure, body mass index and several biochemical parameters. Analyses were performed in 259 participants (116 men). For women reporting insufficient (<7 h) sleep duration, microvascular function (post-ischaemic capillary recruitment) was significantly lower ( $b = -11.17$ ;  $P = 0.04$ ) compared to women reporting sufficient sleep duration. There was no relationship between sleep quality and microvascular function in females. In males, a trend towards lower capillary recruitment was found in those reporting a combination of poor sleep quality and insufficient duration ( $b = -7.54$ ;  $P = 0.09$ ), compared to those reporting good sleep quality as well as sufficient duration. This study suggests an association between sleep and microvascular function. Which aspects of sleep exactly affect microvascular function, and if indeed the association is different between males and females in other samples, needs further research.

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## Stagnation in Chinese Medicine

“All the 10,000 diseases begin  
with stagnation of Qi.”

- Dr Zhu Dan Xi,  
Song Dynasty physician and philosopher, 1380 AD



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## Is MetS Actually The Circadian Syndrome?

**JIM** Journal of  
Internal Medicine  
*Founded in 1863*

Review | Open Access |

**The Circadian Syndrome: is the Metabolic Syndrome  
and much more!**

P. Zimmet , K. G. M. M. Alberti, N. Stern, C. Bilu, A. El-Osta, H. Einat, N. Kronfeld-Schor

First published: 13 May 2019 | <https://doi.org/10.1111/joim.12924> | Citations: 120



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### The Circadian Syndrome

**Modern Lifestyle**

Light pollution, Controlled temperature  
High food availability, Low physical activity  
Stress, Jet lag, Shift work

## Circadian Rhythm Disturbance

Artificial light, constant food availability & consumption, dis-stress, irregular sleep and work hours disrupt the brain's Suprachiasmatic Nucleus – The Master Clock.

This disrupts the peripheral clocks throughout the body, e.g. heart, liver, muscle, adipose tissue, gut flora, digestion, autonomic nervous system, endocrine, detox & overall metabolism.

These Circadian rhythm disturbances contribute to MetS, obesity, T2D, and CVD epidemics.

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Requires Authentication Published by De Gruyter August 13, 2013

## 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

Wolfgang Bohn , Lorenzo Hess and Ralph Burger

From the Journal Journal of Complementary and Integrative Medicine  
<https://doi.org/10.1515/jcim-2013-0037>

### Abstract

As part of the statutory market monitoring of certified medical devices, 658 valid patient questionnaires were evaluated between April 2011 and March 2013. The questions consisted mainly of three scientifically recognized scales for assessing the changes of sleep, pain and quality of life in patients who had used the “physical BEMER® vascular therapy” for different diseases over 6 weeks. The result clearly shows that there are significant improvements in all areas surveyed through the application of this complementary treatment option, regardless of the underlying disease.

**Keywords:** physical BEMER® vascular therapy; vasomotion; vasomotion stimulation; microcirculation; sleep disorders; Jenkins sleep scale; chronic pain; NRS(VAS) according to Borg; quality of life; SF12 questionnaire

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# in vivo

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## Physical Vascular Therapy (BEMER) Affects Heart Rate Asymmetry in Patients With Coronary Heart Disease

ZITA KRESKA, PÉTER MÁTRAI, BALÁZS NEMETH, BELLA AJTAY, ISTVÁN KISS, LÁSZLÓ HEJJEL and ZÉNÓ AJTAY

In Vivo May 2022, 36 (3) 1408-1415; DOI: <https://doi.org/10.21873/invivo.12845>

Conclusion: PVT significantly increases the Guzik and Porta indices in chronic ischemic heart disease patients reflecting a delicate autonomic response.

[These indices assess heart rate variability and sympathetic / parasympathetic balance.]



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Requires Authentication Published by De Gruyter September 7, 2013

## Effects of physical stimulation of spontaneous arteriolar vasomotion in patients of various ages undergoing rehabilitation

Rainer Christian Klopp✉, Wolfgang Niemer and Jörg Schulz


From the Journal Journal of Complementary and Integrative Medicine  
<https://doi.org/10.1515/jcim-2013-0032>

### Abstract

On two samples of rehabilitation patients of different age groups (approx. 38 years and approx. 51 years), via a placebo-controlled study series using representative features of microcirculation, the complementary therapeutic success of additional treatment complementing the biorhythmically defined physical vasomotion stimulation was determined. The results showed that in older rehabilitation patients the amounts of characteristic microcirculatory changes were greater than in younger persons undergoing rehabilitation, but they would subside faster after termination of the additional treatment than in the younger group.

Keywords: complementary therapy; microcirculation; rehabilitation; spontaneous arteriolar vasomotion

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Requires Authentication Published by De Gruyter September 7, 2013

## Influence of a specific, biorhythmically defined physical stimulus on deficient vasomotion in small-caliber arterioles in the subcutis in patients with diabetic polyneuropathy

Rainer Christian Klopp , Wolfgang Niemer, Jörg Schulz and Klaus Jürgen Ruhнау

From the journal Journal of Complementary and Integrative Medicine

<https://doi.org/10.1515/jcim-2013-0033>

### Abstract

As part of a placebo-controlled study series on a random sample of patients with diabetic polyneuropathy and trophic skin lesions on the edge of the foot, functional characteristics of the local microcirculation and immune system were measured to check the complementary-therapy success of biorhythmically defined vasomotion stimulation. **Over a 30-day treatment period, complementary-therapy success was demonstrated for an additional physical vasomotion stimulation to increase the therapeutic success of established treatment concepts.**

Keywords: complementary therapy; diabetic polyneuropathy; microcirculation; spontaneous arteriolar vasomotion



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Observational Study > Z Gerontol Geriatr. 2014 Jul;47(5):415-24.

doi: 10.1007/s00391-013-0567-8.

## [Effects of physical stimulation of spontaneous arteriolar vasomotion on microcirculation and the immune system in diabetes and impaired wound healing]

[Article in German]

R Klopp <sup>1</sup>, J Schulz, W Niemer, K J Ruhнау

Affiliations + expand

PMID: 24271148 DOI: 10.1007/s00391-013-0567-8

**Background:** Whether and to what extent the complementary use of a biorhythm-defined physical stimulation of insufficient spontaneous arteriolar vasomotion contributes to increasing the therapeutic success of established treatment concepts were examined.

**Materials and methods:** In a placebo-controlled study on a biometrically defined sample of older diabetes patients with impaired wound healing, measurements of representative features of the functional status of the microcirculation and the immune system were investigated using high-resolution methods (intravital microscopy, reflective spectrometry, white light spectroscopy combined with laser Doppler microflow measurements). The stimulation signal corresponding to physiological spontaneous arteriolar vasomotion was transmitted using an electromagnetic alternating field of low magnetic flux density.

**Results:** **During the 27-day treatment and observation period, a complementary treatment effect of the applied biorhythm-defined physical vasomotion stimulation could be detected.**



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Requires Authentication Published by De Gruyter September 7, 2013

## Complementary-therapeutic stimulation of deficient autorhythmic arteriolar vasomotion by means of a biorhythmically physical stimulus on the microcirculation and the immune system in 50-year-old rehabilitation patients

Rainer Christian Klopp , Wolfgang Niemer and Jörg Schulz

From the journal Journal of Complementary and Integrative Medicine

<https://doi.org/10.1515/jcim-2013-0034>

### Abstract

As part of a placebo-controlled study series, a random sample of 50-year-old rehabilitation patients was examined to determine whether the complementary use of a physical treatment method to stimulate arteriolar vasomotion would improve the therapeutic success of established measures for the purposes of physical conditioning. **The result showed that both the microcirculatory blood-flow regulation and the (cellular) immune response could be affected in a therapy-relevant manner through additional physical vasomotion stimulation.**

Keywords: complementary therapy; physical conditioning; physiotherapy; rehabilitation

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This article is part of the Research Topic  
New Ideas in: Performance Science

### ORIGINAL RESEARCH article

Front. Psychol., 07 August 2023

Sec. Performance Science

Volume 14 - 2023 |

<https://doi.org/10.3389/fpsyg.2023.1230281>



Front Psychol. 2023; 14: 1230281.

PMCID: PMC10443099

Published online 2023 Aug 8. doi: [10.3389/fpsyg.2023.1230281](https://doi.org/10.3389/fpsyg.2023.1230281)

PMID: [37614490](https://pubmed.ncbi.nlm.nih.gov/37614490/)

## The effect of bio-electro-magnetic-energy-regulation therapy on sleep duration and sleep quality among elite players in Norwegian women's football

Frøde Moen,<sup>1,\*</sup> Svein Arne Pettersen,<sup>2</sup> Kine Gjertsås,<sup>3</sup> Marte Vatn,<sup>4</sup> Martijn Ravenhorst,<sup>3</sup> Atle Kvålsvoll,<sup>5</sup> Kristian Hovde Liland,<sup>6</sup> and Ellen F. Mosleth<sup>7</sup>

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The current study investigated if physical loads peak on game days and if Bio-Electro-Magnetic-Energy-Regulation (BEMER) therapy is affecting sleep duration and sleep quality on nights related to game nights among elite players in Norwegian women's elite football. The sample included 21 female football players from an elite top series club with a mean age of  $\sim 24$  years ( $\pm 2.8$ ). Sleep was measured every day over a period of 273 consecutive days with a Somnify sleep monitor based on ultra-wideband (IR-UWB) pulse radar and Doppler technology. The current study was conducted as a quasi-experiment, where each player was their own control based on a control period that lasted for 3 months, and an experimental period that lasted for 5 months. Accordingly, the time each player spent with BEMER therapy was used as a control variable. Multivariate analyses of variance using FFMANOVA and univariate ANOVA with False Discovery Rate adjusted  $p$ -values show that physical performance (total distance, distance per minute, sprint meters  $>22.5$  kmh, accelerations and decelerations) significantly peak on game day compared with ordinary training days and days related to game days. The results also show that sleep quantity and quality are significantly reduced on game night, which indicate disturbed sleep caused by the peak in physical load. **Most sleep variables significantly increased in the experiment period, where BEMER therapy was used, compared to the control period before the introduction of BEMER therapy. Further, the analyses show that players who spent BEMER therapy  $>440$  h had the most positive effects on their sleep, and that these effects were significantly compared to the players who used BEMER therapy  $<440$  h.** The findings are discussed based on the function of sleep and the different sleep stages have on recovery.



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## Treatment of patients with multiple organ dysfunction syndrome (MODS) with an electromagnetic field coupled to biorhythmically defined impulse configuration: the MicrocircMODS study

Original Paper | [Open access](#) | Published: 17 September 2023  
Volume 113, pages 260–275, (2024) | [Cite this article](#)



[Clinical Research in Cardiology](#)

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Summary: Remarkable outcomes in 10 ICU patients with multiple organ failure, by dramatically improving systemic microcirculation over four days of PEMF treatment.

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## Background

To potentially improve impaired vasomotion of patients with multiple organ dysfunction syndrome (MODS), we tested whether an electromagnetic field of low flux density coupled with a biorhythmically defined impulse configuration (Physical Vascular Therapy BEMER<sup>®</sup>, PVT), in addition to standard care, is safe and feasible and might improve disturbed microcirculatory blood flow and thereby improve global haemodynamics.

## Methods

In a prospective, monocentric, one-arm pilot study, 10 MODS patients (APACHE II score 20–35) were included. Patients were treated, in addition to standard care, for 4 days with PVT (3 treatment periods of 8 min each day; day 1: field intensity 10.5  $\mu$ T; day 2: 14  $\mu$ T, day 3: 17.5  $\mu$ T; day 4: 21.0  $\mu$ T). **Primary endpoint was the effect of PVT on sublingual microcirculatory perfusion, documented by microvascular flow index (MFI).** Patient safety, adverse events, and outcomes were documented.



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## Results

**An increase in MFI by approximately 25% paralleled 4-day PVT, with the increase starting immediately after the first PVT and lasting over the total 4-day treatment period.**

Concerning global haemodynamics (secondary endpoints), **halving vasopressor use within 24 h, and haemodynamic stabilisation paralleled 4-day PVT with an increase in cardiac index, stroke volume index, and cardiac power index by 30%–50%.** No adverse events (AEs) or serious adverse events (SAEs) were classified as causally related to the medical product (PVT) or study. Three patients died within 28 days and one patient between 28 and 180 days.

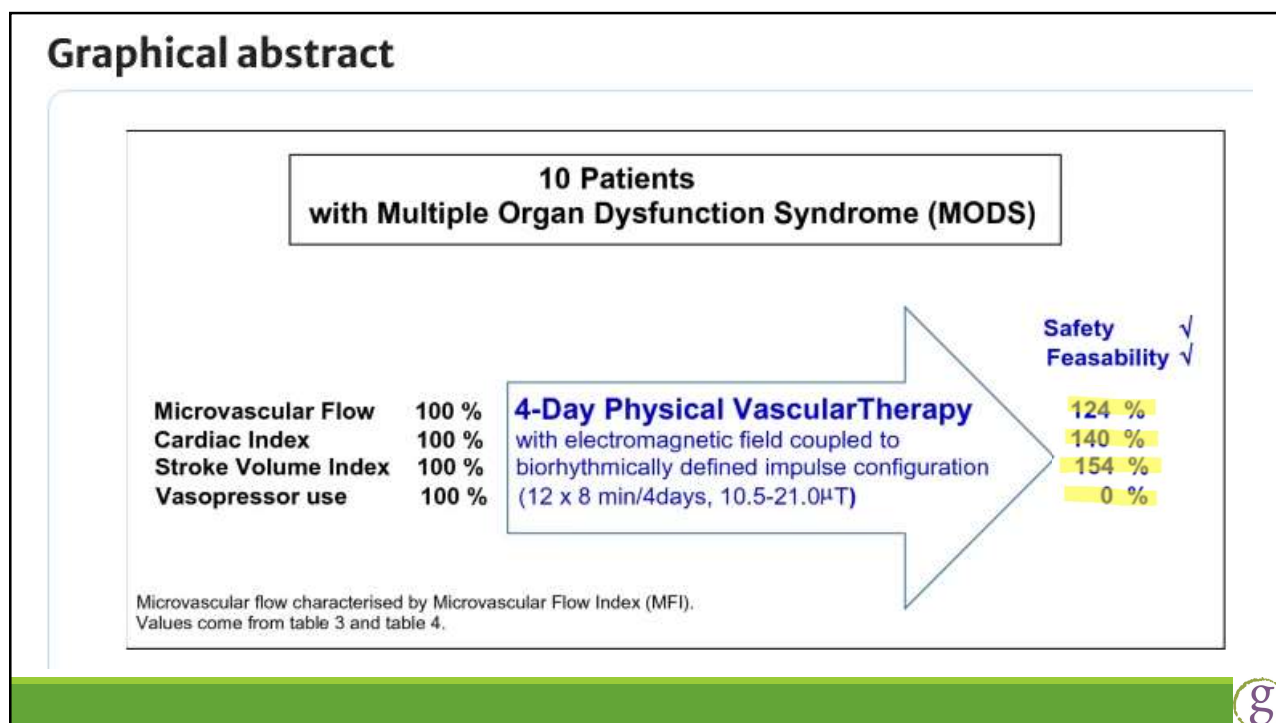
## Conclusion

PVT treatment was feasible and safe and could be performed without obstruction of standard patient care. **An increase in microcirculatory blood flow, a rapid reduction in vasopressor use, and an improvement in global haemodynamics paralleled PVT treatment.** Findings of this pilot study allowed forming a concept for a randomized trial for further proof.



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## Graphical abstract



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ResearchGate

Follow-up 5th year anti-hypertensive treatment by BEMER-System

May 2021

Five-Year Follow-up: PEMF Treatment helped patient not need antihypertensive medication

**Follow-Up ESM-EVBO Poster's 2019: Case Hypertension & BEMER-Therapy - FEB 2020**


At the European Congress ESM-EVBO 2019, we had the poster-presentation *HYPERTENSION treated by a PEMF-System – A 3 year's review*, see also [www.microcirculation.tips/pemf\\_hypertension.pdf](http://www.microcirculation.tips/pemf_hypertension.pdf)  
Used was the *Physical Vascular Therapy BEMER*, the only certified specific PEMF-Therapy.

Due to the results with even mild hypotonus effects, after 2 weeks the regime was set back to BEMER 2 x 8 min / day (Interval 12hrs) with signal of 35 μ Tesla & the Nutritional Supplement back to 2 x 2 soft-gels = 2 x 10 / 50 mg. Evaluation still going on. Recently, **GP screening & treatment schedule confirms the non-prescription of anti-hypertensivum.** BEMER-Therapy & NS to be continued; follow-up 3 mths & perspective approach. No further hypertensive events (SAE) occurred. By April, 30<sup>th</sup> 2021, **the period incl. follow-up of the ant-hypertensive treatment by the BEMER-System is almost 5 years.**

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**BIOMEDICAL**  
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Case ReportOpen Access

Critical Lower Extremity Ischemia and Physical Vascular Therapy, Bemer® » Volume 53- Issue 1

Timea Hevér\*

North-Pest Center Hospital - Military Hospital, Hungary

Received: September 19, 2023; Published: September 27, 2023

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doi: 10.26717/BJSTR.2023.53.008340

PDF

Taking anabolic steroids has many side effects, including arterial thrombosis. These can cause a heart attack, stroke, internal organ or lower limb ischemia. If the thrombus cannot be completely and definitely removed surgically, and the prostacyclin treatment promises to be effective, BEMER®, physical vascular therapy is a good choice and is recommended as a follow-up to the infusion treatment at home... **If the infusion proves to be effective, the limb can be saved by using physical vascular therapy (BEMER®) six times a day at the patient's home. In case of critical limb ischemia, BEMER® proves to be a good choice and is recommended.**

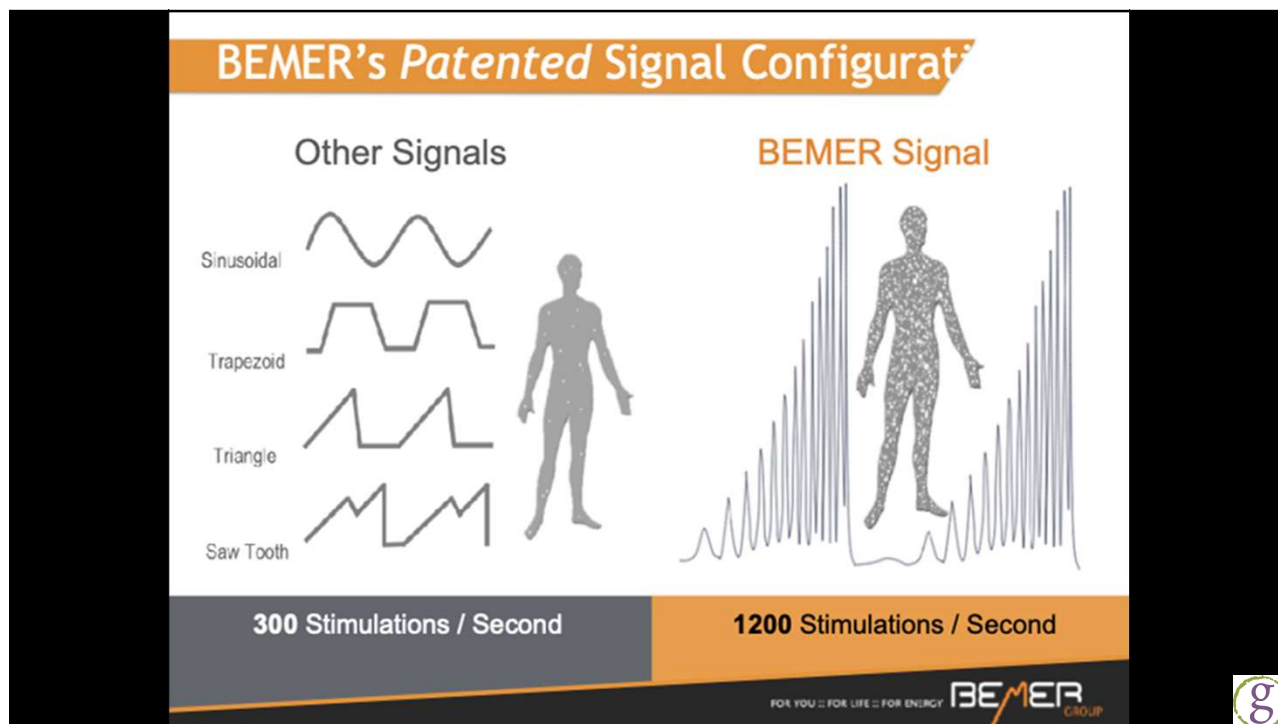
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given in a hospital), treatment at the patient's home can speed up recovery. Such a treatment is physical vascular therapy, Bio-Electro-Magnetic-Energy- Regulation (BEMER®), also used in our presented case. BEMER® is a specific, biorhythmically defined stimulation, which can influence the spontaneous arteriolar vasomotion and thus a deficient blood flow regulation. [9] This physical vascular therapy increases vasomotion and microcirculation, open capillaries, increase red blood cell flow rate and the difference between arterial and venous pO<sub>2</sub> for improved organ blood flow, supply of nutrients and removal of metabolites. BEMER® uses a low-frequency, pulsed magnetic field with a series of half-wave-shaped sinusoidal intensity variations.

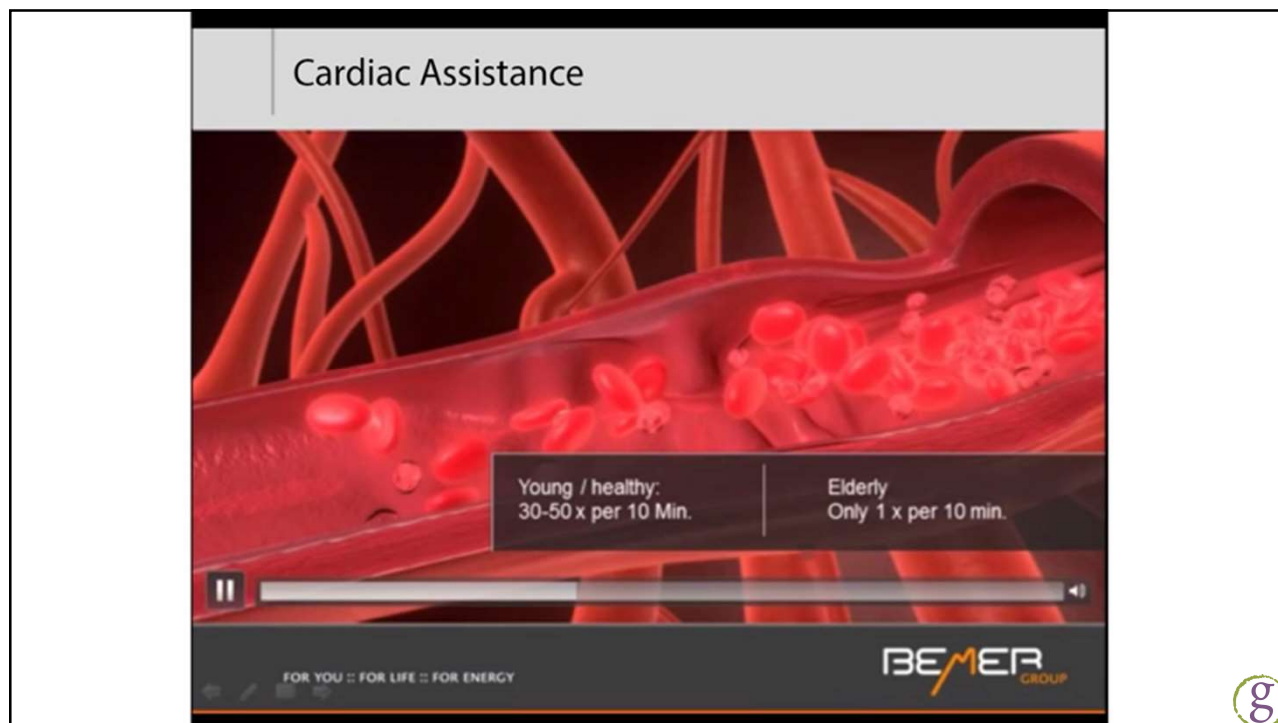
The reason for it is the spontaneous autorhythmic arteriolar vasomotion, which is the most important regulation mechanism of organ perfusion. In the deficient state it is necessary to stimulate body regulatory mechanisms via a suitable physiological stimulus to be able to clear the disturbance that has occurred by themselves. [10,11] According to a study, pain-free walking distance and maximum walking distance increased significantly as a result of isolated BEMER® and isolated pentoxifylline therapy, and the combination of the two treatments provided an additional therapeutic advantage. Although, there is no study literature in a special case like ours, promotes both wound healing, pain and return to daily activities in the ischemic limb with a similar speed. Additional planned studies are also required for the further use of BEMER® in such cases [12].

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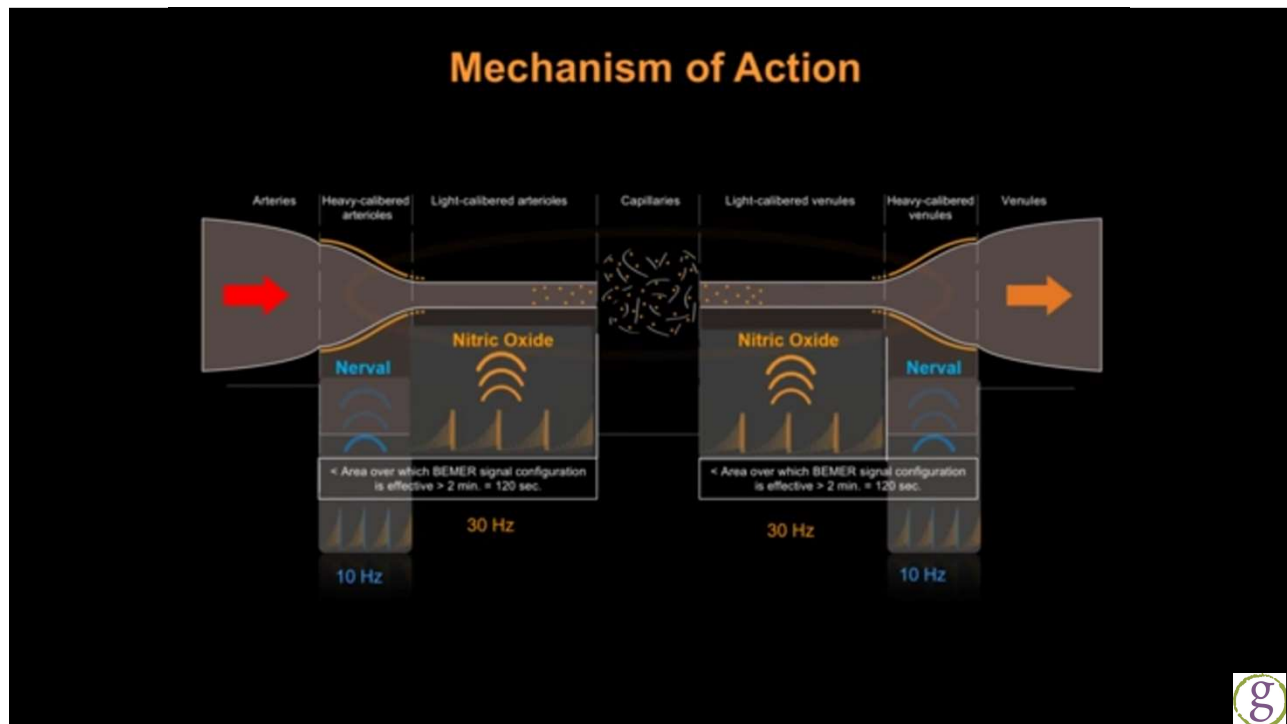




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## Background for the Following Study

In the 1990s, Dr Rainier Klopp, Head of the Institute for Microcirculation in Berlin, Germany, was tasked by the German government, in connection with the International Society for Genetics, to find a non-invasive, drug-free way to increase circulation without adverse effects, that could be used to promote healthy aging & wellness in the elderly.

Dr Klopp was unusual in that he had access to technology for studying microvasculature in real time. He impartially tested and evaluated several methods, including several PEMF devices. His research revealed that the unique BEMER signal has the most profound and dramatic effects in stimulating the vasomotion of micro vessels and circulation (arterioles, capillaries & venules, which comprise 74% of the circulatory system).

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DE GRUYTER

DOI 10.1515/jcim-2013-0035 — J Complement Integr Med. 2013; 10(Suppl): S39–S46

Rainer Christian Klopp\*, Wolfgang Niemer and Wolfgang Schmidt

# 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



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## Comparison of Various PEMF Devices

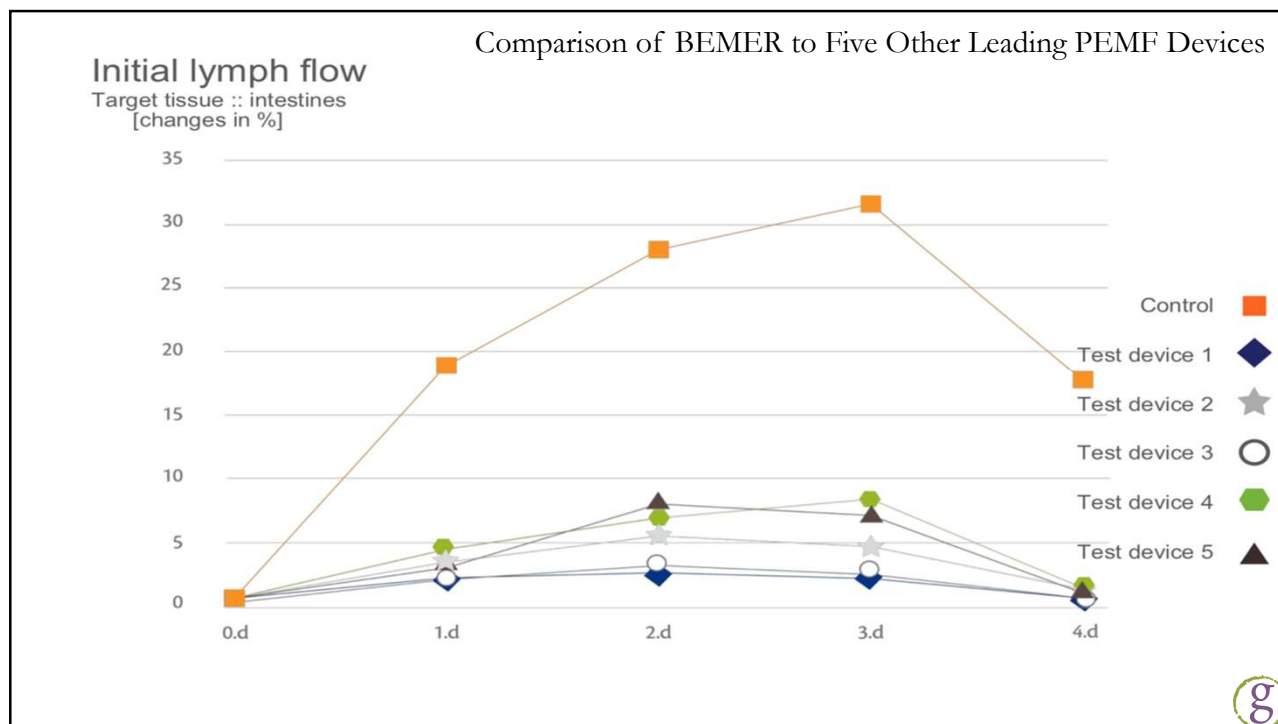
Institute of Microcirculation : Berlin, Germany : Feb. 20, 2013

Test device	Device name
Control	BEMER Classic
Test device 1	Magneter OOB
Test device 2	Impulser OOB
Test device 3	Terramagnon OOB
Test device 4	SENTIPLUS OOB
Test device 5	IMRS

OOB = Out  
of Business



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## BEMER Comparison Study Results

Improvements in Vasomotion, Capillary Perfusion, Venous Return & Oxygen Utilization

BEMER: 30% Average

Other Devices: 3-10%

BEMER is 3-10x more effective in improving microcirculation

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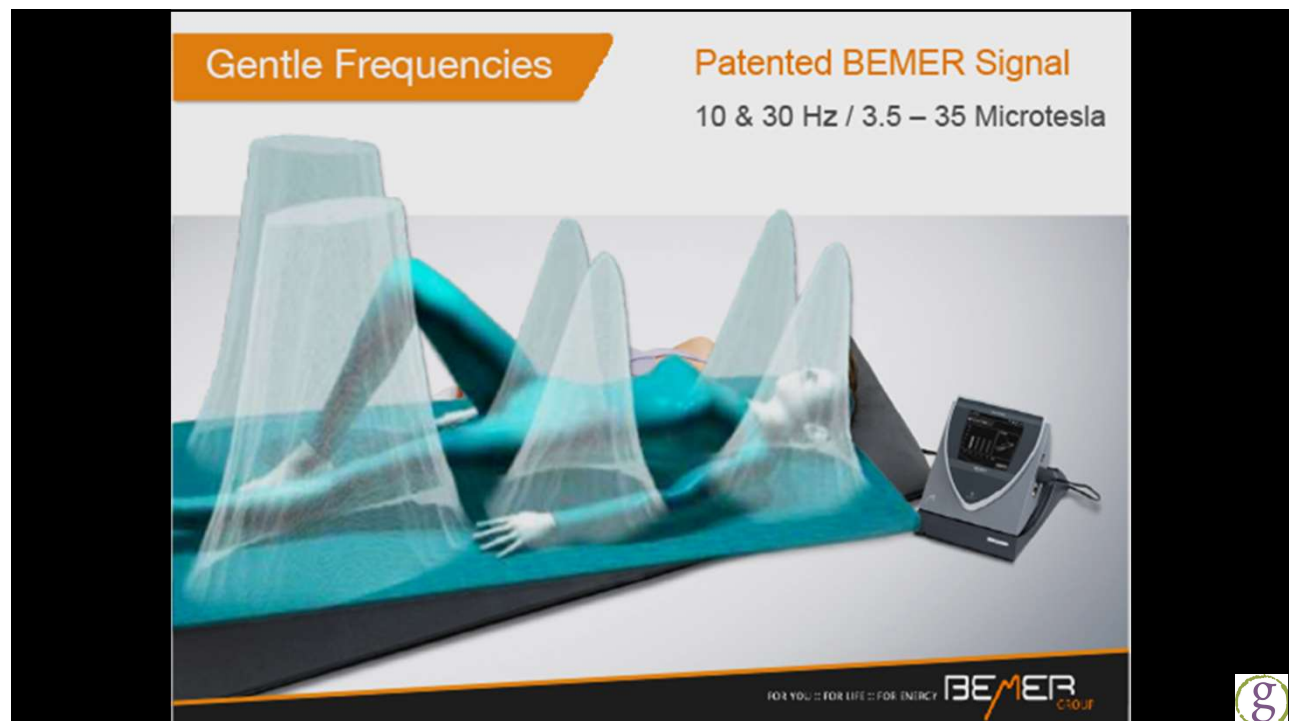


## BEMER Mechanism of Action Related to Optimizing Cardiovascular & Metabolic Health

1. Improving Microcirculation  
(30Hz aspect of BEMER's unique signal)
2. Enhancing Parasympathetic Activity  
(10Hz aspect of BEMER's unique signal)



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**Tab. 2** Conditions improved by use of BEMER PEMF therapy.

### Vascular

- chronic venous insufficiency
- erectile dysfunction
- hypertension
- lymphedema
- post surgical edema
- Raynaud's syndrome

### Neurological

- autism
- chronic fatigue
- fibromyalgia
- migraine
- multiple sclerosis
- neuralgia
- neuropathy
- diabetic
- chemotherapy
- idiopathic
- sciatica
- tinnitus

## The Haug Report

Physical method IV

## BEMER PEMF Therapy in an Integrative Health Clinic Setting

Dr Kevin D. Shaw, ND, EAMP, Dipl. OM



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### Gastrointestinal & Urinary

- fecal incontinence
- inflammatory bowel disease
- interstitial cystitis

### Musculoskeletal

- arthritis
- muscle spasm
- non-union fracture
- tendonitis

### Infectious Disease

- Bell's palsy
- herpes simplex
- shingles

### Ocular

- cataracts
- myopia

### Mental Health

- anxiety
- depression
- PTSD
- sleep disorder

#### Contact

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### Dermatological

- alopecia
- eczema
- psoriasis
- warts
- wound healing

### Metabolic

- gestational diabetes

### Respiratory

- COPD



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If you are interested in purchasing a Bemer, and possibly earning additional income as a distributor (recommended):

**Cynthia Zaal, MBA**

**Cynthia@cynthiazaal.com or**

**Text: (713) 410-5827**

Highly recommended:  
Do so by April 30<sup>th</sup> to  
guarantee that you will  
receive the current  
device (larger mat,  
with the Special /  
Sleep program), at a  
\$1,000 discount.

This will ensure that you receive ongoing clinical guidance & support from Dr Gaeta, and ongoing business / practice integration support from Cynthia Zaal.



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  - By phone or video



Questions? [support@michaelgaeta.com](mailto:support@michaelgaeta.com), or 303-442-2525

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