

# Medical PEMF Studies

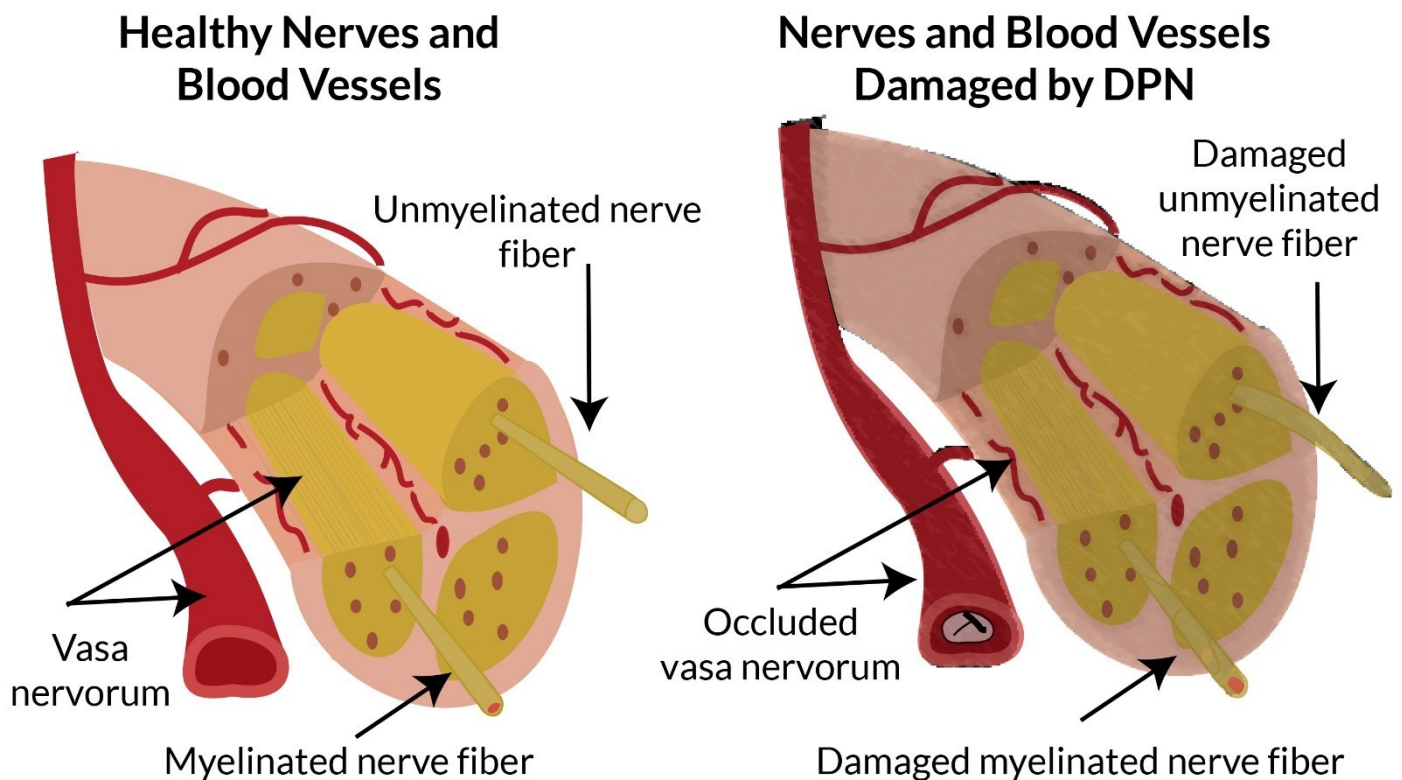


Email Info@cell2n.com  
Website www.cell2n.com

## NEUROPATHY

**Therapeutic effects of 15 Hz pulsed electromagnetic field on diabetic peripheral neuropathy in streptozotocin-treated rats.**

### Diabetic Peripheral Neuropathy



1. PLoS One. 2013 Apr 18;8(4):e61414. doi: 10.1371/journal.pone.0061414. Print 2013.

Lei T(1), Jing D, Xie K, Jiang M, Li F, Cai J, Wu X, Tang C, Xu Q, Liu J, Guo W, Shen G, Luo E.

**Author information:**

(1)School of Biomedical Engineering, Fourth Military Medical University, Xi'an, China.

# Medical PEMF Studies



Email [Info@cell2n.com](mailto:Info@cell2n.com)  
Website [www.cell2n.com](http://www.cell2n.com)

Erratum in

PLoS One. 2013;8(12).

doi:[10.1371/annotation/b162aa26-6251-4db6-af5f-35b4d9ee5055](https://doi.org/10.1371/annotation/b162aa26-6251-4db6-af5f-35b4d9ee5055).

Although numerous clinical studies have reported that pulsed electromagnetic fields (PEMF) have a neuroprotective role in patients with diabetic peripheral neuropathy (DPN), the application of PEMF for clinic is still controversial. The present study was designed to investigate whether PEMF has therapeutic potential in relieving peripheral neuropathic symptoms in streptozotocin (STZ)-induced diabetic rats. Adult male Sprague-Dawley rats were randomly divided into three weight-matched groups (eight in each group): the non-diabetic control group (Control), diabetes mellitus with 15 Hz PEMF exposure group (DM+PEMF) which were subjected to daily 8-h PEMF exposure for 7 weeks and diabetes mellitus with sham PEMF exposure group (DM). Signs and symptoms of DPN in STZ-treated rats were investigated by using behavioral assays. Meanwhile, ultrastructural examination and immunohistochemical study for vascular endothelial growth factor (VEGF) of sciatic nerve were also performed. During a 7-week experimental observation, we found that PEMF stimulation did not alter hyperglycemia and weight loss in STZ-treated rats with DPN. However, PEMF stimulation attenuated the development of the abnormalities observed in STZ-treated rats with DPN, which were demonstrated by increased hind paw withdrawal threshold to mechanical and thermal stimuli, slighter demyelination and axon enlargement and less VEGF immunostaining of sciatic nerve compared to those of the DM group. The current study demonstrates that treatment with PEMF might prevent the development of abnormalities observed in animal models for DPN. It is suggested that PEMF might have direct corrective effects on injured nerves and would be a potentially promising non-invasive therapeutic tool for the treatment of DPN.

PMCID: PMC3630223

PMID: 23637830 [PubMed - indexed for MEDLINE]