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September 2023

Which impacts? Peripheral nerve magnetic stimulation at powerline frequencies

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Citation of this paper:

Fresnel, Eleonore, "Which impacts? Peripheral nerve magnetic stimulation at powerline frequencies" (2023). *Inspiring Minds – A Digital Collection of Western's Graduate Research, Scholarship and Creative Activity*. 486.

<https://ir.lib.uwo.ca/inspiringminds/486>

Which impacts? Peripheral nerve magnetic stimulation at powerline frequencies

Eleonore Fresnel

Powerline magnetic fields (MF) are ubiquitous in modern societies due to the generation, distribution, and use of domestic current. Thus, humans are exposed to them every day. MF can induce electric currents in our bodily tissues, and "activate" or "deactivate" some cells, like neurons. Neurons transmit sensory messages from our body to our brain, and motor messages from our brain to our muscles. For example, a MF can induce undesirable sensations or muscle contractions if sensory or motor neurons are activated.

Therefore, to protect the general population and workers against adverse effects, several international organizations establish recommendations for MF exposures. Yet, to our knowledge, there is no experimental data about the impact and perception threshold of powerline MF on the peripheral nervous system (PNS). This research aims to explore the neurophysiological impacts of the human PNS stimulated by MF at powerline frequencies. It will contribute to refining international exposure recommendations.