

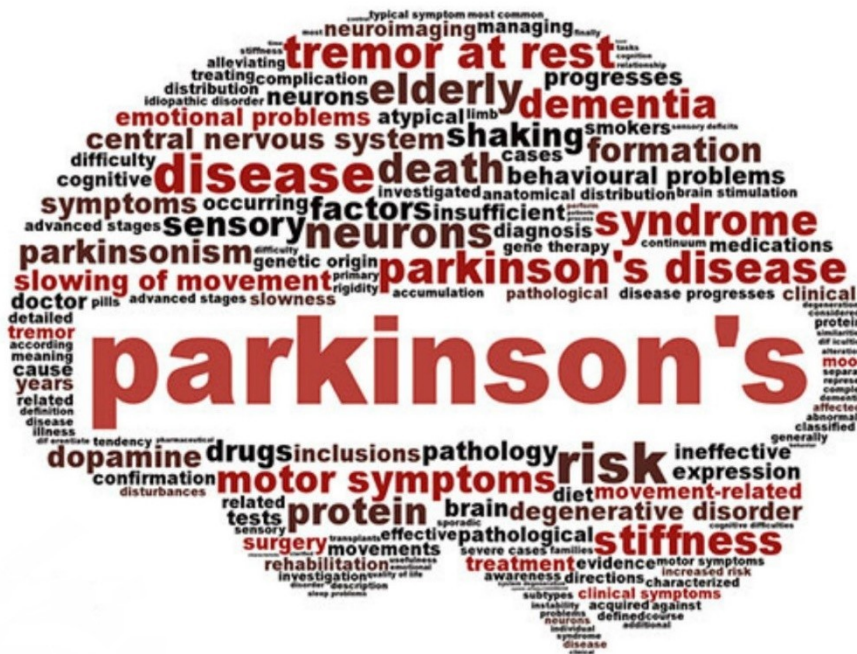
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Magnetic fields in the treatment of Parkinson's disease.



1. Int J Neurosci. 1992 Mar;63(1-2):141-50.

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Levodopa-induced dyskinesias are a common complication of chronic dopaminergic therapy in patients with Parkinson's disease (PD). The overall prevalence of levodopa-induced dyskinesias ranges from 40%-90% and is related to the underlying disease process, pharmacologic factors, and to the duration of high dose levodopa therapy. The mechanisms underlying the emergence of levodopa-induced dyskinesias are unknown, although most investigators favor the theory that striatal dopamine receptor supersensitivity is directly responsible for the development of these abnormal movements. In laboratory animals, the pineal hormone melatonin has been shown to regulate striatal dopaminergic activity and block levodopa-induced dyskinesias (Cotzias et al., 1971). Since the pineal gland is known to be a

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magneto-sensitive organ and as application of external magnetic fields has been shown to alter melatonin secretion, we studied the effects of application of external artificial weak magnetic fields in a Parkinsonian patient with severe levodopa-induced dyskinesias ("on-off"). Application of weak magnetic fields with a frequency of 2 Hz and intensity of 7.5 picotesla (pT) for a 6 minute period resulted in a rapid and dramatic attenuation of Parkinsonian disability and an almost complete resolution of the dyskinesias. This effect persisted for about 72 hours after which the patient regressed to his pretreatment state. To ascertain if the responses elicited in the laboratory were reproducible, the patient was instructed to apply magnetic fields of the same characteristics daily at home. These subsequent treatments paralleled the initial response with a sustained improvement being maintained during an observation period lasting at least one month. This case demonstrates the efficacy of weak magnetic fields in the treatment of Parkinsonism and motor complications of chronic levodopa therapy.

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