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Can Repetitive Transcranial Magnetic Stimulation (RTMS) Have a Role in the Treatment of Chronic Medically Unexplained Pain?

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Introduction: Chronic pain is one of the most common symptoms in the general population and it can lead to worsened quality of life, reduced productivity, significant economic loss and higher comorbidity of physical and mental disorders. Particularly when the underlying causes are not identified its treatment becomes a serious challenge.

Objectives: To review the current existing evidence base regarding the rTMS therapeutic role on chronic unexplained symptoms of pain.

Methods: A literature review, based on a PubMed research, takes stock of the studies that have investigated this subject in the latest years.

Results: Despite only a small amount of research available, findings from some case series and randomized sham-controlled rTMS study on fibromyalgia provide a growing body of evidence indicating that high frequency rTMS has promising analgesic efficacy on chronic unexplained pain, particularly when targeted at the left prefrontal and the left motor cortex. Overall, the actual mechanisms of rTMS's analgesic effects on these symptoms are unknown, but may include endogenous opioid releases and the functional improvement in certain brain regions such as the prefrontal cortex, the anterior cingulate cortex and the primary sensory cortex.

Conclusions: In the future, rTMS may become an important therapeutic option for the treatment of unexplained chronic pain. Until then, further consistent clinical experience is needed. The optimization of the rTMS parameters and the specific mechanisms involved also demand additional research.