



In Motion

Highlighting Articles Advancing Pain Research in Canada and the World

Featured article:

Provencher, J., Beaulieu Guay, E.M., Desbiens-Loranger, S., Schneider, C. **Repetitive Peripheral Magnetic Stimulation to Improve Ankle Function and Gait in Cerebral Palsy at Adulthood: An open-label Case Study.** Brain Res 2022 1792:147999

<https://doi.org/10.1016/j.brainres.2022.147999>

Key insights from the study:

- **New Treatment Method:** This research explores how using repetitive peripheral magnetic stimulation (rPMS) in the theta-burst frequency over the lower limb and trunk muscles can help improve motricity and decrease spasticity-related pain in an adult woman with cerebral palsy.
- **Benefits for Brain and Body:** rPMS can reduce spasticity and improve motricity even in adults with cerebral palsy in parallel with the improvement of brain function.
- **Positive Patient Reports:** The patient improved her gait and better managed the foot movement and noticed less pain after receiving rPMS treatment, indicating it could be a helpful non-surgical treatment option for pain related to spastic paresis.

What happened?

Researchers used repetitive peripheral magnetic stimulation (rPMS) on a 30-year-old woman with mixed cerebral palsy (CP) to see if it could help her regain better control over her ankle movement and walking. The therapy involved four sessions where a painless, non-invasive magnetic stimulation was applied in a repetitive mode (theta-burst stimulation) on her legs and trunk muscles. Results showed that the therapy helped improve her ankle's ability to move, reduced muscle stiffness, led to better walking patterns, and alleviated the pain caused by spasticity. These changes lasted for over a month. treatment avenues.

Why is it important?

rPMS offers a promising new way to improve motor function and mobility in CP, even after the developmental period. The findings show that this therapy could help maintain or even enhance the quality of life for adults with CP by reducing muscle stiffness and improving walking ability and spasticity-related pain.

What now?

The case study suggests that rPMS could become a valuable tool for adults with CP. And the patient's physiotherapist reported recently (years after the project) that this rPMS-related improvement had made her better cope and respond to her physical therapy over time (retention and increase of the gains). However, more research is needed with larger samples to confirm these findings. Future studies will need to explore how this therapy can be used effectively for long-term improvements of functional autonomy.

