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Topic **Pain**

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Abstract title **Pain Reducing Properties of the Mollii Suit on Adults with Chronic pain syndromes**

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Abstract text **Abstract Text**

**Background:** The Mollii suit, a garment with 58 built in electrodes, provides transcutaneous electrical stimulation to selected regions across the body. The stimulation induces pain inhibiting mechanisms in the central nervous system (CNS) and affects neurohormonal levels, leading to modulation of the CNS through activation of sensory afferent pathways. It is an approved non-pharmacological, non-invasive treatment to reduce spasticity and improve motor function in individuals with CNS lesions. Anecdotal evidence shows benefit in individuals with chronic pain syndromes.

**Aim:** Investigate the Mollii Suit effect on pain in adults with different pain diagnoses.

**Methods:** An open-label uncontrolled study included 200 adults (75 males and 115 females) who used Mollii suit therapy for one-hour. 72 were diagnosed with Fibromyalgia, 29 with Parkinson, while other diagnosis had a frequency < 20. Patients were asked to fill a Visual Analogue Scale (VAS) just before the intervention (VAS-0), immediately afterwards (VAS-1) and twenty-four hours (VAS-24) later.

**Results:** VAS-0 was  $6.5 \pm 1.24$ . A highly significant drop was noted in VAS-1 ( $3.46 \pm 1.4$ ) and VAS-24, ( $4.72 \pm 1.68$ ), paired test p-values < 0.001. A mixed-effect model, used to assess VAS change while controlling for sex, age, and diagnosis type, showed a significant drop in VAS-1 and VAS-24. The VAS-1 coefficient was -3.036 (p-value < 0.001) while the VAS-24 coefficient -1.789 (p-value < 0.001). The results were not affected by patients' diagnoses, age or sex.

**Conclusion:** Wearing the Mollii suit for 1 hour demonstrated significant subjective improvements in VAS scores. Placebo controlled studies are needed to further prove the efficacy of Mollii suit in treatment of pain.