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Retrain Your Brain: A Systematic Review of Functional Electrical Stimulation's Effect on ADL Participation Post-Stroke


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Title: Retrain Your Brain: A Systematic Review of Functional Electrical Stimulation's Effect on ADL Participation Post-Stroke

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Primary Focus: Rehab, Disability & Participation

Learning Objectives:

- Describe the impact of stroke on ADL performance
- Identify the role of OT in stroke rehabilitation
- Explain how Functional Electrical Stimulation (FES) falls within the scope of OT practice
- Interpret the current evidence on how FES influences ADL participation for individuals post-stroke

Abstract:

Stroke is one of the leading causes of long term disability in the United States (Centers for Disease Control and Prevention, 2015). According to Hartman-Maeir, Soroker, Ring, Avni, and Katz (2007), 57% of stroke survivors will eventually discontinue their meaningful activities, including activities of daily living (ADLs). Lack of independence in ADLs has a negative psychosocial impact (Kitson, Dow, Calabrese, Locock, & Athlin, 2012), contributes to decreased quality of life, and increased caregiver burden (Rigby, Gubitz, & Phillips, 2009). In this presentation, practitioners will be exposed to the current literature that examines the efficacy of Functional Electrical Stimulation (FES) as an intervention within the scope of occupational therapy practice to improve participation in ADLs in adults with stroke. A systematic review of the literature was conducted by searching PubMed, CINAHL, and Scopus databases. After abstract screening and full-text re-screening, 13 articles met the inclusion criteria: participants were adults with stroke, the intervention involved electrical stimulation concurrent with a functional task, and ADL performance as an outcome measure. Articles were critically appraised using the Law McDermid Quantitative Review Form and examined for level of evidence. After critical appraisal, 3 themes were evident: FES + additional therapy, location of FES intervention, and frequency of FES intervention. While control groups that received standard therapy demonstrated improvements in ADL performance, treatment groups receiving FES in addition to standard therapy had significantly better ADL performance than control groups (You et al.,

2014, Tanovic, 2009, & Tan et al., 2014). Treatments that took place within a clinic demonstrated significantly improved ADL performance (Kowalczewski et al., 2007; Tan et al., 2014; Tanovic, 2009; & You et al., 2014) while home-based treatments did not. Lastly, the only studies that demonstrated a statistically significant improvement in ADL performance consisted of FES conducted 5 or more days a week (Kowalczewski et al., 2007; Tan et al., 2014; Tanovic, 2009; & You et al., 2014). In this session, practitioners will learn how FES can be used in stroke rehabilitation and will apply this insight to guide best practice for clients who have sustained a stroke. Practitioners will understand how setting, frequency and additional therapy influence efficacy of FES for improving ADL participation.

Level of material being presented: Introductory

Target Audience: OT, OTA, OTS, Researcher

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