

An intensive neurorehabilitation programme with sEMG

Rehabilitation Biofeedback For Dysphagia Patients With Idiopathic Parkinson's Disease

Objective

The researchers used fiberoptic endoscopic examination of swallowing (FEES) to examine the effectiveness of a neurorehabilitation intervention involving **surface electromyography (sEMG) biofeedback** to improve swallowing in people with idiopathic Parkinson's disease (IPD), and to explore the feasibility of the intervention approach.

Results

An intensive neurorehabilitation with **sEMG biofeedback** showed positive effects in improving swallow function in IPD.

Statistically significant improvement in oral intake methods and in pharyngeal residue from saliva and solids post-intervention were confirmed using FEES, with improvements at three months. The intervention protocol was well tolerated. Participants reported positive change in saliva control and duration of mealtimes as well as unanticipated improvements in voice and cognitive attention.

Participants and Researchers

The study recruited 12 participants with IPD and dysphagia. A total of ten patients completed the study.

The researchers were *Irene Battel* and *Margaret Walshe*, Department of Clinical Speech & Language Studies, Trinity College Dublin, Dublin, Ireland and Department of Biomedical, Surgical and Dental Sciences, University 'La Statale', Milan, Italy.

Methods

Intervention was delivered for one hour per day, five days per week, for four weeks (20 hours). Swallowing tasks using **sEMG biofeedback** incorporated principles of motor learning and neuroplasticity. Instrumental and non-instrumental assessment, including quality-of-life measures were carried out at four different time points (two pre-treatment and two post-treatment). The final assessment was at three months post-intervention.

Biofeedback with **sEMG** was provided using the **NeuroTrac MyoPlusPro** device (Verity Medical) using **NeuroTrac** software.

The full abstract can be found at
<https://onlinelibrary.wiley.com/doi/10.1111/1460-6984.12824>