

**Irene Battel, 2021 Abstract**

## **Surface EMG Biofeedback For Treating Dysphagia In IPD Sufferers**

### **Objective**

The study examined a therapeutic approach using **surface electromyography (sEMG)** aimed at improving swallow function in people with Idiopathic Parkinson's Disease (IPD) and swallowing disorders.

### **Results**

The research found that **biofeedback** had positive effects on increasing swallowing function in people with IPD and dysphagia. The narrative synthesis of the findings suggested that visual biofeedback as part of a swallow intervention programme for people with IPD and dysphagia was likely to benefit swallowing function.

Moreover, **surface electromyography (sEMG)** was the most common method to deliver swallowing biofeedback in people with IPD and dysphagia.

### **Participants and Researcher**

Twelve participants were recruited; two withdrew from the study at the beginning of the research, the remaining ten participants completed the study.

The researcher was Irene Battel for a PhD thesis at The University of Dublin, Trinity College Dublin, Ireland.

### **Methods**

The intervention involved **biofeedback** with **sEMG**. Participants received the intervention for one hour per day, five days per week, for four weeks (20 hours). The intervention programme incorporated a progression of swallowing tasks using the sEMG biofeedback and the treatment approach was based on motor learning and neuroplasticity principles.

The **NeuroTrac MyoPlus Pro sEMG** device (Verity Medical) and **NeuroTrac Software** was chosen to conduct the sEMG biofeedback. For the purpose of the study, two programmes were selected: "open display" and "plane game". The sEMG signals from the device were transferred to portable computer using the specialised **NeuroTrac Software**.

The full abstract can be found at

<http://www.tara.tcd.ie/bitstream/handle/2262/94216/Thesis%20Post-viva%2027.11.20%20Irene%20Battel.pdf?sequence=5&isAllowed=y>