

## Dos Anjos, Typhanie, et al.2024 Abstract

### Neuromotor Treatment of AMI After Knee Injury Or Surgery

#### Objective

After an injury or surgery to the knee, it is common to observe a deficit in the muscle strength of the quadriceps, in particular the vastus medialis oblique (VMO) muscle, a teardrop-shaped muscle that helps move the knee joint and stabilize the kneecap. It is one of the four quadriceps muscles.

The study aimed to assess quadriceps **electromyographic (EMG)** activity with neuromotor (NR) treatment and the effects on extension deficits in persons with arthrogenic muscle inhibition (AMI) after knee injury or surgery.

#### Results

The study indicated that the innovative NR method can improve VMO activation and extension deficits in patients with AMI, and can be considered a safe and reliable treatment modality in patients with AMI after knee injury or surgery.

The researchers found that the clinical relevance of this multidisciplinary treatment modality for AMI can enhance outcomes through the restoration of quadriceps neuromuscular function and subsequent reduction of extension deficits after knee trauma.

#### Participants and Researchers

A total of 30 patients, with a mean age of 34.6 (range 14-50 years), who underwent knee ligament surgery or sustained a knee injury were included in the study.

The researchers were *Typhanie Dos Anjos*, PhD, Université Claude Bernard, Laboratoire Interuniversitaire de Biologie de la Motricité, Villeurbanne Cedex, France, Lyon, France; *François Gabriel*, Centre Paramédical Santy, Lyon; and *Thais Dutra Vieira* MD, *Graeme Philip Hopper* MD FRCS, and *Bertrand Sonnery-Cottet*, MD PhD, all from the Centre Orthopédique Santy, FIFA Medical Centre of Excellence, Groupe Ramsay-Générale de Santé, Hôpital Privé Jean Mermoz, Lyon.

#### Methods

The quadriceps surface **EMG** activity, using **transcutaneous electrical nerve stimulation (TENS)** during maximal voluntary contraction, was assessed in persons who completed one session of NR treatment in addition to their standard rehabilitation.

To provide a more reliable recording, a **NeuroTrac Simplex Plus** (Verity Medical) EMG device was used for transcutaneous electrical nerve stimulation and **electromyographic (EMG) biofeedback**.

The full abstract can be found at <https://pubmed.ncbi.nlm.nih.gov/37102673/>.