



Thesis Project Form

Title (tentative): An innovative methodology combining TMS, EMG and fNIRS to explore the dynamics of interhemispheric inhibition

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Description

Motivation and application domain

Although the ipsilateral silent period (iSP) is a frequently measured index of interhemispheric inhibition, the neural dynamics underlying the iSP effect are unknown. It is explored in both health and patient populations, to assess differences in its features such as latency, duration and normalized area. Dynamics may explain iSP differences within and between groups.

General objectives and main activities

This thesis aims to explore the iSP and the related neural dynamics through transcranial magnetic stimulation (TMS) and functional near-infrared spectroscopy (fNIRS). The main activities will involve the development of a suitable protocol combining the use of TMS and fNIRS, data acquisition, and data analysis.

Training Objectives (technical/analytical tools, experimental methodologies)

The candidate will deal with the experimental setup, learn how to properly use the TMS and fNIRS devices, and deepen methods to analyse TMS and fNIRS data to understand neural dynamics related to the iSP.

Place(s) where the thesis work will be carried out: Laboratorio per lo studio dell'Integrazione sensorimotoria e dell'esercizio (Viale Benedetto XV 3 e Centro Polifunzionale Scienze Motorie, Corso Europa 30)

Additional information

Maximum number of students: 1