




Annual RIMS Conference
Crossing the Interface to Explore New Possibilities
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IN PARTNERSHIP WITH  univerzitetni klinični center ljubljana
 Centre for multiple sclerosis, Department of Neurology and Neurorehabilitation unit, Division of Neurology, UMCL

Name: Giuseppina Pilloni

Educational background:

B.Sc. (December 2013) with honours in Biomedical Engineering (University of Cagliari, Italy) and M.Sc. (July 2016) with honours in Biomedical Engineering (Polytechnic of Milan, Italy)

Affiliation: University of Cagliari



Short description of your PhD project and trajectory (max 200 words):

A quantitative approach to assess cognitive-motor interference in neurorehabilitation

This is the third and final year of my PhD program in Industrial Engineering at University of Cagliari. The main aims of my project are the implementation and the clinical application of a consistent and quantitative method to explore cognitive-motor interference in people with MS (pwMS). The quantitative approach consists of using a motion capture system to assess gait biomechanics during single-task (walking only) and dual-task (walking + cognitive task, namely Visual Verbal Stroop test) performance. I validated this approach in a recent paper (MS and Related Disorders, 2018), by testing it on a cohort of 80 pwMS and 40 healthy controls. The next step following the validation was the definition of possible application of this method in the clinical rehabilitation field. Therefore, I applied this quantitative method to evaluate the effects of a treatment consisting in simultaneous application of transcranial direct current stimulation (tDCS) and aerobic physical activity.

To address this, I spent one year at New York University (Dep. of Neurology) as PhD visiting under the supervision of Dr. Leigh Charvet, who is specialized on the application of non-invasive brain stimulation techniques for cognitive and motor functional recovery. At NYU I designed and managed a randomized, double-blind, sham controlled pilot study to explore the effect of multiple and consecutive sessions of tDCS combined with aerobic physical therapy on walking and balance in pwMS (for more details see **ClinicalTrials.gov Identifier: NCT03658668**).

I want to give a (mark with X):

Presentation (8-10 min. presentation + 5-10 min. feedback from expert panel)