



Thesis Project Form

Title (tentative): Motor training with adapted bicycles to improve performance in children and adolescents with disabilities

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Description

Motivation and application domain

In subjects with disabilities, play-motor activity is effective in improving participation and, more broadly, quality of life (QoL). A recent literature review (Thevarajah et al, 2022) highlights that Adaptive Cycling (ADC) improves motor functions and physical activity in children and adolescents with intellectual-motor disabilities. However, there is still limited evidence regarding the increase in participation after the use of ADC, especially due to the lack of data collected in ecological settings. Based on this hypothesis, researchers from OPBG conducted a pilot study on the impact of using Assistive Biking (BA) on the QoL of children/adolescents with intellectual-motor disabilities during the pandemic. Preliminary results have shown that ADC, through the use of BA, improves the child's functional outcome, harmonious development, communication and relationship skills, reduces the stress level of the family unit, and promotes the maintenance of an active lifestyle.

General objectives and main activities

The project proposal consists of a single-center uncontrolled intervention study using Assistive Biking (BA). The study aims to assess, quantitatively and through an evaluation protocol and motor training, the impact on motor performance, endurance, and quality of life (QoL) in children/adolescents with intellectual-motor. The student will collaborate with the team of Movement Analysis Robotics Laboratory of the U.O.C DH Neuroriabilitazione e Attività Sportiva Adattata.

Training Objectives (technical/analytical tools, experimental methodologies)

Study of the state of art

To use K5 Cosmed (IT) device

Data analysis

Place(s) where the thesis work will be carried out: IRCCS Bambino Gesù¹ Children Hospital Roma and NeuroLab UNIGE

Additional information

Maximum number of students: 1