Title (tentative): Development of locomotor primitives in blind children

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## Description

### Motivation and application domain
Visually impaired children show developmental delays in several motor skills. Sighted toddlers acquire two specific gait patterns in the first 12-18 months that allow them to walk. However, it is unknown if/how these 2 additional patterns are developed in blind children and if a specific multisensory training could help for the development of the gait patterns. Application domain: neurophysiology of movement, neurorehabilitation.

### General objectives and main activities
The study aims to define if/when blind children develop the two above specified gait patterns. The student will carry out measurements on blind and healthy aged matched sighted children. He/she will analyze the data and provide the discussion of the results.

### Training Objectives (technical/analytical tools, experimental methodologies)
Technical tools: Cinematic data acquisition and analysis via a motion capture system (VICON). sEMG data acquisition and analysis. Analysis of muscle synergies.
Experimental methodologies: Development of an experimental protocol, data acquisition, literature review, interaction with patient populations.

### Place(s) where the thesis work will be carried out: Italian Institute of Technology, Genoa

### Additional information

Pre-requisite abilities/skills: basic knowledge of neurophysiology and rehabilitation

Maximum number of students: 1