

Motor Control Laboratory, which is part of the Research Centre for Motor Control and Neuroplasticity at KU Leuven

Our research is characterized by a multidisciplinary approach, spanning a broad range of disciplines that encompasses the behavioural sciences, neurosciences and movement sciences/kinesiology. Whereas our research was originally embedded in the behavioural sciences and kinesiology, we have gradually embraced the neurosciences to provide a more complete picture of the control of human movement under normal and disordered conditions. Indeed, our team members make use of medical imaging techniques (e.g. Functional Magnetic Resonance Imaging and Diffusion Tensor Imaging), as well as neuronavigated brain stimulation techniques (e.g. Transcranial Magnetic Stimulation) to better understand brain-behaviour and structure-function relationships.

Our primary focus is to understand the principles underlying control of human movement with special emphasis on coordination and cognitively demanding motor tasks in association with sensory processing. Furthermore, we have developed a long-standing interest in skill acquisition and the neurobehavioral changes that occur as a result of practice.

Brains-Hub is a centre devoted to the study of Brain Activity, Imaging & NeuroStimulation for Human Behaviour.

It is a multimodal facility for human brain imaging and neurostimulation to describe, understand, and improve motor performance (perception, action, decision making) under normal and disordered conditions. It consists of a number of laboratories to study human movement control and neuroplasticity using brain activity registration (electrophysiological imaging) and neuronavigated brain stimulation, together with muscle, motion and force tracking techniques. It focuses on the study of eye-hand, inter-finger/hand, and upper and lower limb coordination and dexterity by means of computer-based robotic setups and virtual reality environments.

Without a doubt, neuroplasticity across the lifespan is at the heart of developing into unique individuals. Our multidisciplinary approach, in collaboration with teams within the university as well as at the national and international levels, has attracted many foreign students and junior and senior research fellows to join us in our scientific

endeavor during the past decades. Please have a more detailed look at our website and let us know whether we can assist you with your questions.

<https://gbiomed.kuleuven.be/english/research/50000737/groups/50487173>



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