

PhD in Health & Exercise Science: Concussion Electrophysiology and Rehabilitation Research

The Concussion Electrophysiology & Rehabilitation Research Laboratory (Cerebral Lab; Department of Health, Kinesiology, and Applied Physiology at Concordia University) is looking for a PhD student to begin in Fall 2023 under the supervisor of Dr. Elizabeth Teel. The trainee will lead projects investigating the effects of acute exercise (e.g., single sessions) and exercise-based interventions on clinical and physiological outcomes in individuals with concussion. The candidate will be trained in electroencephalography (EEG) methodology and analysis (e.g., data collection, signal processing, and feature extraction), submaximal exercise testing, exercise-based rehabilitation interventions, and concussion assessment and management tools (e.g., symptom checklists, tandem gait, vestibular/ocular motor screen, etc.). The successful candidate will work alongside a multidisciplinary research team, including local and national concussion experts, clinician-scientists (e.g., physicians, physiotherapists, athletic therapists), neuroscientists, engineers, and neuroimaging experts. The PhD candidate will be well prepared to enter clinical, academic, or industry career pathways at the conclusion of their training.

Expected Roles and Responsibilities:

- **Project Management:** Creating and maintaining documentation of study protocols (manual of operating procedures, assessment manuals, etc.) as needed; communicating relevant project updates with co-investigators and collaborators.
- **Recruitment and Enrollment:** Screen potential research participants; recruit and enroll eligible participants; schedule initial and follow-ups visits (including phone and/or email communication with participants); maintain recruitment and enrollment logs.
- **Data Collection:** Collect data per study protocol including patient demographics, EEG, clinical concussion assessments, and exercise testing outcomes.
- **Data Management:** Enter data in a timely manner; ensure data is securely stored and organized; perform data quality checks and clean data as needed.
- **Data Analysis & Dissemination:** Perform required statistical analysis; generate documentation surrounding analysis procedures (annotate code, version control, etc.); present findings at conferences; submit manuscripts for publication.
- **Supervision:** Assist in the oversight of undergraduate and MSc students on the project (e.g., training new personnel on equipment, study protocols, etc.).
- **Research Ethics:** Ensure ethics procedures are followed and maintained; amend ethics protocols as needed; report required information to the ethics boards.
- **General Laboratory Duties:** Participate in regular lab meetings; maintain research equipment; order supplies as needed.

Required Qualifications:

- A research/thesis-based MSc degree in Kinesiology, Exercise Science, or a related discipline (e.g., Physiology, Medicine, etc.).
- Demonstrated experience conducting research in concussed populations.
- Established research productivity as evidenced by peer-reviewed publications,

- conference presentations, and/or thesis documents.
- Strong oral and written communication skills.
- Excellent interpersonal skills (contribute to a positive and inclusive environment).
- Self-motivated, organized, and a sense of ethics.
- Ability to work autonomously and take a lead role on projects under supervision of principal investigators.

Preferred Qualifications:

- Prior experience in EEG and/or exercise testing (ideally in patients with concussion).
- Proficiency in MATLAB, Python, and/or R/RStudio.
- Prior experience in clinical research/collecting data in clinical environments.
- Comfortable working with pediatric (5-17 years) and adult concussion patients.
- Mentorship and/or supervisory experience.
- Ability to communicate (both orally and in writing) in both English and French (please note that French language skills are *preferred*, not required).

Start date, Duration, Stipend, and Location:

The start date for this position is September 1st, 2023. Degree completion is expected in Winter/Summer of 2027, aligning with a traditional 4-year PhD timeline. A stipend consistent with Fonds de Recherche du Quebec funding levels will be provided to the successful candidate. Annual conference/travel funds will also be provided. The successful candidate will be registered in the Department of Health, Kinesiology, & Applied Physiology (HKAP) at Concordia University (Montreal, Quebec, Canada). The official language of instruction at Concordia is English. As data collection is a required component of this position, the PhD is expected to reside within the Greater Montreal Area during the academic year.

How to apply:

- Follow the instructions provided under the “Application Process” tab on the [HKAP PhD in Health & Exercise Science website](#). The deadline for submitting application materials is **February 1st, 2023**. Short listed applicants will be contacted soon after the submission deadline.
- Any questions about the position, associated project, or application materials should be directed to Dr. Teel (elizabeth.teel@concordia.ca) using subject line “Cerebral Lab PhD Position”.