**PhD Program University Côte d’Azur (Nice, France)**

**HAmstring strain injuries and fear of re-injury: Psychological and PhYsiological risk factors**

**(HaPPy)**

The University of Côte d’Azur (Nice, France) is offering a **3-year** **fully funded PhD position in the field of exercise psychophysiology** (see project summary below). During the PhD, the student will conduct her/his work in the **Laboratory of “Motricité Humaine, Expertise, Sport, Santé**” (LAMHESS, UPR 6312) in Nice under the supervision of Dr Enzo Piponnier, Dr Stéphanie Mériaux, and Prof. Fabienne d’Arripe-Longueville. At completion of the project, the student will receive a **PhD in “Sciences of the Human Movement” from the University of Côte d’Azur**.

The **University of Côte d’Azur** is a recently created cluster of higher education establishments on the French Riviera. The University of Côte d’Azur aims to develop a new University model based on interactions between disciplines, coordination between research, teaching, and innovation, and strong partnerships with the private sector and local authorities. The University of Côte d’Azur won the prestigious “IDEX” award from the French government, placing it among the **top 10 world-class, comprehensive universities** in France.

**Outstanding applicants** should have a background in one or several of the following research fields: sport psychology and health psychology, neuromuscular physiology. Data analysis and treatment skills (e.g. correlation, transition analysis), although not mandatory, will be valued. Essential requirements for this PhD position are excellent grades, the ability to learn, understand and apply new psychophysiological approach of injury related concepts and experimental methodologies, a strong motivation as well as the willingness to work in team.

**Fluency in French is not mandatory. An intermediate level in English (or higher) is expected**.

**The starting date is fall 2020. Applications are accepted until May 31st, 2020.** Short-listed candidates will be asked to prepare an interview for the hiring committee, composed of members from the doctoral school in Sciences of the Human Movement. Interviews will take place early July 2020 in Marseille (France). Net salary is approximately 1500€ (excluding potential extra income from teaching assistance) and includes a health insurance package. Professional expenses (e.g. experiments, hardware, software, publications) will be covered by the hosting laboratory / University.

Applicants should contact Dr Enzo Piponnier (enzo.piponnier@univ-cotedazur.fr), Dr Stéphanie Mériaux (stephanie.meriaux@univ-cotedazur.fr), and Prof. Fabienne d’Arripe-Longueville (fabienne.d-arripe-longuevilleuniv-cotedazur.fr) to prepare their application as soon as possible **(deadline May 31st).** A cover letter with a statement of research interests, CV, publications (if any), relevant certificates (degrees and grades), and the name and contact of at least two referents who are able to evaluate the research skills of the applicant should be attached to the email in one merged PDF. This document can be either in French or in English.

**Project summary**

**HAmstring strain injuries and fear of re-injury: Psychological and PhYsiological risk factors**

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Injury surveillance and understanding are fundamental elements of concerted efforts to protect the health of the athlete (Bahr & Krosshaug, 2005). Hamstring muscle injury is one of the most common muscle injuries across a range of different sports. Primary and secondary prevention of hamstring muscle damage currently represents a major challenge for technical and health professionals around athletes in disciplines involving sprints (e.g., Hägglund et al. 2009; Opar et al., 2012). Although many risk factors of these injuries have been apprehended, it seems appropriate to consider them in a systemic way. Then, more comprehensive approaches are developed and could be more efficient to consider the risk factors of the hamstring strain injuries.

In the literature psychological risk factors of the hamstring strain injury has been mentioned but have never been the subject of any scientific study. However, the psychological risk factors for sports injury (e.g., personality factors, previous experiences of stress and coping strategies; fear of injury) have received increased attention over the past decade (see the meta-analysis by Ivarson et al., 2017). In addition, recent studies suggest that lifestyle (i.e. eating habits, sleep, recovery strategies) play a role in the onset (Dennis et al., 2016; Reele et al., 218) or recurrence (Von Rosen et al., 2017) of sports injuries. It therefore appears essential to take into account the psychological and the psycho-behavioral risk factors related to healthy living in the area of hamstring strain injury, and to better understand their interactions with physiological factors. Moreover, one of the most important concerns in hamstring strain injury is its recurrence and therefore fear of reinjury. Buhmann et al. (2020) showed that moderate to severe hamstring strain injury was associated with long-term deficits in voluntary activation level during maximal eccentric contraction and with deficits in stretch reflex amplitude. These deficits could be result to a decrease of eccentric force production and therefore to the high recurrence percentage in hamstring strain injury. However, the psychophysiological origin of these deficits remains to be determined.

Therefore, this project will attempt to:

1. Identify the psychological and physiological risk factors of the hamstring strain injury and their potential interactions
2. Determine the psychophysiological origins of the long-term muscle activation deficit observed after a hamstring strain injury, and notably the role of fear of reinjury

At completion of project, it is expected that the candidate will master:

* Theoretical concepts related to psychophysiological factors of hamstring muscle injuries
* Experimental techniques including motor nerve stimulation, echography, psychological measurements, semi-directive interviews and content analysis, and statistical data analyses.

**Relevant literature (not exhaustive):**

Bahr, R., & Krosshaug, T. (2005). Understanding injury mechanisms: A key component of preventing injuries in sport. *British Journal of Sports Medicine*, *39*, 324–329.

Buhmann, R., Trajano, G., Kerr, G., & Shield, A. (2020). Voluntary Activation and Reflex Responses following Hamstring Strain Injury. *Medicine and science in sports and exercise.* doi: 10.1249/MSS.0000000000002327.

Hägglund, M., Waldén, M., & Ekstrand, J. (2009). Injuries among male and female elite football players. *Scandinavian journal of medicine & science in sports, 19(6*), 819-827.

Ivarsson, A., Johnson, U., Andersen, M. B., Tranaeus, U., Stenling, A., & Lindwall, M. (2017). Psychological factors and sport injuries: Meta-analyses for prediction and prevention. *Sports Medicine*, *47*, 353–365. doi: 10.1007/s40279-016-0578-x

Opar, D. A., Williams, M. D., & Shield, A. J. (2012). Hamstring strain injuries. *Sports medicine, 42(3),* 209-226.

Williams, J. M., & Andersen, M. B. (1998). Psychosocial antecedents of sport injury: Review and critique of the stress and injury model. *Journal of Applied Sport Psychology*, *10*, 5–25.

**More information:**
Laboratory of “Motricité Humaine, Expertise, Sport, Santé”: http://unice.fr/laboratoires/lamhess
Université Côte d’Azur : http://univ-cotedazur.fr/en
Doctoral School Sciences of the Human Movement: https://ecole-doctorale-463.univ-amu.fr/fr