

Internship offer
M2 Musculo-Skeletal system, Locomotion, Exercise (MuSkLE)

Title of the Internship: Effects of perceived shoulder dysfunction on the biomechanics of physical performance tests for upper limbs in athletes

Laboratory (name, n°, website):

Laboratoire Interuniversitaire de Biologie de la Motricité – UR7424 (LIBM) [<https://libm.univ-st-etienne.fr/fr/index.html>]



Research team (name, website):

Team Sport Performance and Injury Prevention (SPIP) [<https://libm.univ-st-etienne.fr/fr/equipes/spip.html>]

Supervisor to contact (name, email address):

Pr Isabelle Rogowski (isabelle.rogowski@univ-lyon1.fr) & Mr Yoann Blache (yoann.blache@univ-lyon1.fr)

Project description including a short introduction, aim/objectives and methods/approach to be used

In order to screen for risk of shoulder injury occurring during sport practice or to assess the effectiveness of shoulder rehabilitation, coaches and clinicians need to characterize the shoulder functions. In this context, several physical performance tests, such as the Closed Kinetic Chain Upper Extremity Stability Test, Unilateral Seated Shot Put Test or Upper Quarter Y-Balance Test, have been proposed to characterize shoulder stability, power, motor control, strength or endurance. However, whether the biomechanical mechanisms contributing to perform such tests have been investigated in healthy athletes, the biomechanical adaptations at the shoulder complex in the athletes presenting alterations in shoulder functions remain to be understood.

The aim of this research will be to study the effects of perceived shoulder dysfunction on the biomechanics of physical performance tests for upper limbs in athletes.

References:

- Degot, M., et al. (2019). "Intersession reliability of the upper quarter Y balance test score." *Computer Methods in Biomechanics and Biomedical Engineering* 22(S1): S264-S266.
- Degot, M., et al. (2019). "Intrarater reliability and agreement of a modified Closed Kinetic Chain Upper Extremity Stability Test." *Physical Therapy in Sport* 38: 44-48.
- Degot, M., et al. (2021). "Intra- and intersession reliability and agreement of the Unilateral Seated Shot-Put Test score." *BMC Sports Science, Medicine and Rehabilitation* 13: 72.

Skills required:

Interest in shoulder biomechanics (Motion analysis, Electromyography, Dynamics, Elastography), human experimentation and programming.