

Enora Le Flao
MEng, PhD candidate

Research specialization: Sports related concussions, Injury prevention, Biomechanics.

Experience: Between her Master's in mechanical engineering and her PhD with AUT SPRINZ, Enora has worked for 4 years as a biomechanical engineer. She was project manager and lead researcher for several projects focusing on sports epidemiology, sports traumatology, ergonomics and personal protective equipment for an important French sports good company (Decathlon). Other experiences include Finite Elements Analysis and mechanical design, and Enora has also worked for the Federation Française de Rugby when she was a student.



Research overview: Her PhD focuses on neck neuromuscular capacities as a risk factor for concussions in rugby. The first steps consisted in designing an experimental device to assess head and neck dynamic responses when the head is submitted to an impact (how strong and how fast do the neck muscles react). This device will allow pre-season baseline evaluation of a group of rugby players' that will be followed prospectively. Enora will use instrumented mouthguards and injury records to investigate the association between neck neuromuscular control and head impacts and concussion risk. Enora is also involved in other injury prevention projects with the ACC.

Research publications:

Le Flao, E., Imbert, C., Wloch, H., & Gueguen, N. (2015). Perceived grip, balance and comfort of yoga and gym mats correlate with biomechanical and mechanical assessment. *Computer methods in biomechanics and biomedical engineering*, 1-2.

The majority of Enora's work as a researcher has not been published because of confidentiality issues, but included epidemiological studies (cohort study on sport accidents), literature reviews (shoulder injury mechanisms in skiing and snowboarding, head injuries in rock climbing, effectiveness of bicycle helmets) and biomechanical analyses (force, speed and energy of boxing strikes, effect of compression garments on soft tissue vibrations).

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