



Press Release

Sport-related concussions

Altered hand movement behaviour in concussed athletes underlie the diagnosis

Cologne, 9th December 2019

Concussions are a regular occurrence in sport but more so in contact sports such as American football, ice hockey or soccer. The problem of diagnosing concussion is often complicated if the collision happens during a competition or training. Dr. Ingo Helmich's current study suggests clear markers for a diagnostic criterion. Helmich has been able to show that nonverbal hand movements differ between athletes with and without concussion.

Ever since the German midfielder, Christoph Kramer suffered a black-out in the final of the 2014 Football World Cup there has been a growing number of debates around the question of sport-related concussion. The emphasis here is on correct diagnosis. There are plenty of symptoms but these can be ambiguous. Researchers of the Department of Neurology, Psychosomatics and Psychiatry of the Institute for Exercise Therapy and Movement-Oriented Prevention and Rehabilitation have now been able to find evidence for their hypothesis, that non-verbal hand movement behaviour offers additional information concerning the state of health of the athletes, but specifically with respect to possible post-concussion symptoms.

Dr. Ingo Helmich and his team compared the hand movements of symptomatic and asymptomatic athletes after concussion. The findings show that non-verbal behaviour and hand movements differ between the two groups, in that symptomatic athletes are more likely to perform so-called "motion quality presentation gestures" which provide information on the athletes' post-concussion motor sensory experience.

The study provides evidence of significant non-verbal gestures and behaviour differences between people with and without concussion which can serve as behavioural markers for sports-related concussions and so improve diagnosis.

This study was published in the Journal of Science and Medicine in Sport on December 4, 2019 @ JSAMS: "Symptoms after sport-related concussions alter gestural functions".

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