

# Clinical utility of the neuro tracker in the long-term management of multiple conclusions in professional athletes

Cheyenne Yammine

Hôpitaux Universitaires Pitié Salpêtrière - Charles Foix, France

## Abstract

Although many consider concussions to be benign, sustaining one or multiple concussions can result in lasting cognitive dysfunctions that could disrupt athletic performance. The aim of this study was to assess the clinical relevance of the Neuro Tracker in the monitoring of professional athletes during chronic stages following a concussion. A multiple case study conducted with professional Lad-Jockeys (N=4) that have been diagnosed with at least one concussion up to 12 months prior to our experiment. To the following, we have conducted a clinical examination, followed by a series of neuropsychological tests, questionnaires and a 3D-MOT (Neuro Tracker) task. Deficits are observed in global cognitive functioning (M(MoCA)=23±1), information processing speed (M(IPS)=13.5±15.47), planification Abilities (M(ROCFcopy)=24.75±3.90), working memory (M(Corsiblocks-backwards)= 46.5±29, 52), decision making under risk (M (GDT) =12.75±2.59) as well as in attention and perceptual-cognitive skills (M (3D-MOT)= 0.81±0.21). Through common neural networks of cognitive functions, scores obtained at the 3D-MOT task are in coherence with those obtained at classic neuropsychological testing. The 3D-MOT therefore seems suitable towards the assessment of higher-order functions, such as executive functions, visual memory, action planning and information processing speed. Its clinical use is seems fit in the longitudinal monitoring of professional athletes that have sustained a concussion.

## Biography

Cheyenne Yammine is a young Canadian researcher and clinician. She has completed a Bachelor of Science in Psychology and a Minor in Biological Sciences (Cellular and Molecular Biology) at the University of Montreal. She is now finishing her Masters of Science in Clinical Psychology and Neuropsychology (clinical and research program) at the University of Paris VIII. She trained at high level institutions such as Henri Mondor teaching Hospital, Hotel Dieu Hospital and the Pitié-Salpêtrière Hospital, alongside world renowned researchers and clinicians. She has acquired many skillsets in Neurology, Neurorehabilitation and Sports Psychology that help her thrive in international, multicultural, and high paced workplaces.



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