

How Combined Cognitive Testing and Physical Exercise Can Assess Readiness for Return to Play in Concussed Athletes

In concussed athletes,

the decision to return to play (RTP) is critical, as premature RTP can increase the risk of subsequent injuries



Conventional approach to assess RTP



Self-reported symptoms



Computerized test batteries

However, existing evidence shows that this approach is not optimal, owing to low reliability and sensitivity

Is there a better way to assess RTP after concussion?

?

Combined post-concussion cognitive testing and physical exercise



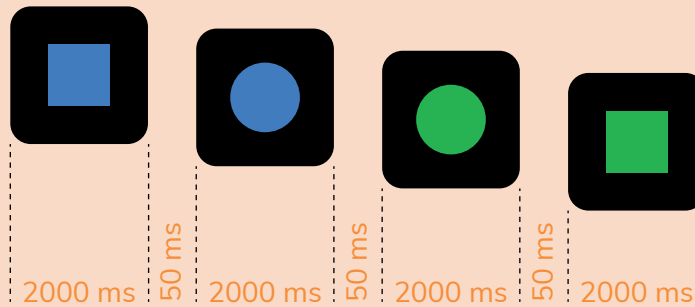
80 University athletes from different teams



40 Recently concussed

40 No history of concussion

Aerobic exercise followed by a "switch" task specifically designed to assess executive functions



Cognitive Testing and Exercise to Assess the Readiness to Return to Play After a Concussion

Sicard et al. (2020) | *Translational Journal of the ACSM*

Compared to healthy controls



Concussed athletes showed lower cognitive performance

↓ Response accuracy

↑ Performance costs

Despite being asymptomatic



Up to 30% of concussed athletes who had successfully completed the conventional RTP protocol showed cognitive impairments

Irrespective of conditions such as rest or exercise



10%

of concussed athletes performed normally at rest but showed cognitive impairment after exercise



A sensitive cognitive task should be combined with physical exercise to assess readiness of RTP



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