In concussed athletes, the decision to return to play (RTP) is critical, as premature RTP can increase the risk of subsequent injuries. Conventional approaches to assess RTP, such as self-reported symptoms and computerized test batteries, have low reliability and sensitivity. 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?

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

Combined post-concussion cognitive testing and physical exercise:

- University athletes from different teams: 80
- Recently concussed: 40
- No history of concussion: 40

Aerobic exercise followed by a “switch” task specifically designed to assess executive functions:

- Performance costs
- Response accuracy

Compared to healthy controls:

- Concussed athletes showed lower cognitive performance
- 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.

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

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