Cognitive rest following concussions: rethinking ‘cognitive rest’

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The concepts of physical and cognitive rest are described as the ‘cornerstones’ of concussion management.1 Over the past several decades, we have seen significant swings in the extremes of these concepts. With physical rest, we have seen approaches from allowing a return to full participation within 1.5 min after clearing of symptoms to restricting all physical activity until the athlete is without any symptoms. Recently, work by Leddy et al2 encourages more active rehabilitation as tolerated by the athlete promoting exercise before symptoms have completely resolved. Although Leddy’s work most likely has not been adopted by most primary care physicians, and possibly some sports medicine physicians, as of yet, clearly we are seeing concussion management take on a more moderate, and likely a more common sense approach, rather than at an extreme.

So what about cognitive rest? Unfortunately for many, cognitive rest is often telling an adolescent after a concussion that they should avoid text messaging, watching television, playing video games and staying out of school until symptoms improve. Yet, despite these recommendations and many individuals preaching the extremes of these, until now, there is no research study to show the harm of text messaging or any of the other myriad of restrictions often placed on adolescents after their concussion. Clearly, the research as to the benefit or harm of cognitive rest is lagging behind most other aspects of concussion management.

WHAT DOES THE RESEARCH SHOW?

A few recent studies have looked at the effect on recovery by using the cognitive rest concept. A study by Brown et al3 demonstrated that not reducing any cognitive demand to the brain, particularly for the school-aged athlete, can delay recovery following a concussion. Interestingly, the study also found that whether you take an extreme approach to restricting the amount of ‘cognitive stress’ a brain endures or mildly reduced the stress from the athlete’s norm, recovery rates were essentially identical. Another study by Thomas et al4 had athletes practise ‘strict rest’ for 5 days, where most of the typical cognitive rest principles were applied, compared with a more moderate ‘normal rest’ period of 1–2 days of rest followed by a return to school. The athletes who had the normal rest period recovered more quickly and reported less symptoms than the strict rest group. In looking at these two studies, basically too much restriction and no restriction may slow recovery. Even with this limited research, we are starting to see, as with physical rest, evidence that a more moderate approach is probably ideal for recovery.

An interesting study by Majerske et al5 that actually preceded these two other studies by 6 years was probably under-recognised for what its results demonstrated. The study evaluated primarily young male football players. The analysis looked at their performance on ImPACT computerised neurocognitive testing and compared it to the level of physical activity and school activity. Not surprisingly, the athletes who performed the best on all four aspects that ImPACT assesses were those who were at school and doing light physical activity. Those who performed the worst were those who were not active and not at school, as well as the group which was at school and doing the highest level of physical exertion. This certainly would also suggest a moderate approach but also hints that there may be a sweet spot, which has yet to be determined, as to how much cognitive and physical activity we should allow for athletes following a concussion. Certainly, the extremes do not seem to be ideal.

As the research continues to grow and management plans continue to evolve, we need to keep the mental health of athletes in mind when making management decisions. As it stands currently, cognitive rest is equivalent to punishing a teenager indefinitely. We tell them to not do anything, they cannot do the sport they love, they are removed from their highly digital socially connected lives and we tell them that we do not know how long exactly that is going to last. Students become extremely stressed and anxious about completing their assignments, particularly if kept from a significant amount of schooling for a long time. They also worry about how are they going to get caught up and getting behind compared with their peers. Since each of the authors here has experience with young concussed athletes, the longer we do that, we strikingly increase the odds of creating a very anxious and depressed individual. Symptoms of depression and anxiety also often mimic many concussion symptoms, which can make an even bigger challenge sorting out what may be from the concussion and what may be underlying anxiety or depression.

When did text messaging and watching a television show become as mentally challenging as algebra and physics? It is time to rethink the ‘punishment’ approach of cognitive rest.

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