

Brain Rest Is Best After Sports Injuries

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Cognitive rest has been recommended to help children recover from concussion symptoms, but until now data offering evidence had been scant.

Children's participation in contact sports has come under close scrutiny as a result of the high rate of brain injuries sustained by young athletes. According to the Centers for Disease Control and Prevention, U.S. emergency departments each year treat an estimated 173,285 sports- and recreation-related traumatic brain injuries, including concussions, among children and adolescents ranging in age from birth to 19 years.¹

The American Academy of Pediatrics,² the American Medical Society for Sports Medicine,³ the American Academy of Neurology,⁴ and the American College of Sports Medicine⁵ all have issued reports or statements discussing postconcussion management in the pediatric population. The consensus of these groups and others calls for cognitive and physical rest during the initial stages of recovery from a concussion.

In their recent study, Brown and colleagues⁶ provide empirical evidence that cognitive rest is beneficial in decreasing the duration of postconcussion symptoms in children and adolescents. Their study looked at the independent effect of cognitive rest—limiting activities requiring attention and concentration, such as reading, texting, video games, and schoolwork—on the number of days needed to fully recover from a concussion.

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This single-center, prospective cohort study included 335 patients ranging from 8 to 23 years (mean, 15 years) who presented to a sports concussion clinic in Boston between October 1, 2009 and July 31, 2011. Patients presented within 3 weeks of injury. Injuries that qualified patients for inclusion in the study were sports-related concussions and concussions resulting from a similar mechanism, such as a fall at a playground. Children with more severe injury mechanisms, such as a motor vehicle accidents or falls from above ground level, were excluded.

The authors defined concussion as a traumatic acceleration of the brain followed by the onset of symptoms of concussion, signs of concussion, or changes in neurocognitive function. They evaluated standardized forms completed at each patient's visit. Athletes were considered recovered from their concussion when they met all of the following criteria:

- They were symptom-free at rest.
- They were symptom-free with exertion and after discontinuing medications prescribed for postconcussion symptoms.
- Their balance error symptom scores had returned to baseline.

• Their computerized neurocognitive test scores were at or above baseline.

Children and adolescents who engaged in the highest quartile level of cognitive activity after a concussion had the longest times to symptom resolution. Participants who engaged in lower levels of cognitive activity showed a shorter duration of symptoms. However, complete abstinence from cognitive activity did not appear to be necessary for an improvement in the duration of postconcussion symptoms.

Despite the consensus that limiting extensive cognitive activity reduces postconcussion recovery time in young athletes, limited data had been published until now demonstrating the beneficial effects of cognitive rest on recovery after concussion. This study's observations support the academic accommodations for student-athletes experiencing symptoms of sports-related concussions. Such accommodations allow for cognitive rest in the school setting and are an important first step in the management of concussions among schoolchildren. ■

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REFERENCES

1. Centers for Disease Control and Prevention. Concussion in sports and play: get the facts. <http://www.cdc.gov/concussion/sports/facts.html>. Updated October 6, 2011. Accessed February 28, 2014.
2. Halstead ME, Walter KD; Council on Sports Medicine and Fitness. American Academy of Pediatrics. Clinical report—sport-related concussion in children and adolescents. *Pediatrics*. 2010;126(3):597-615.
3. Harmon KG, Drezner J, Gammons M, et al; American Medical Society for Sports Medicine. American Medical Society for Sports Medicine position statement: concussion in sport. *Clin J Sport Med*. 2013;23(1):1-18.
4. Giza CC, Kutcher JS, Ashwal S, et al. Summary of evidence-based guideline update: evaluation and management of concussion in sports: report of the Guideline Development Subcommittee of the American Academy of Neurology. *Neurology*. 2013;80(24):2250-2257.
5. Herring SA, Cantu RC, Guskiewicz KM, et al. Concussion (mild traumatic brain injury) and the team physician: a consensus statement—2011 update. *Med Sci Sports Exerc*. 2011;43(12): 2412-2422.
6. Brown NJ, Mannix RC, O'Brien MJ, Gostine D, Collins MW, Meehan WP III. Effect of cognitive activity level on duration of post-concussion symptoms. *Pediatrics*. 2014;133(2):e299-e304.