

# The Recommendation for Rest Following Acute Concussion

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The acute management of concussion is an important area of investigation and an area of clinical importance to the pediatrician. Recent studies suggest that concussions account for more than 10% of all sport-related injuries sustained by high school athletes and reveal an increase in the number of children with concussions being cared for in emergency departments.<sup>1-3</sup> At present, the mainstay of concussion management calls for both cognitive and physical rest until the acute symptoms resolve, followed by a graded return to activity.<sup>4</sup> As noted by several medical societies, the evidence on which the recommendations for rest are based is sparse.<sup>4-6</sup> This relative lack of evidence is due, in part, to the difficult nature of quantifying and tracking levels of physical and, particularly, cognitive activity. In this issue of *Pediatrics*, Thomas et al<sup>7</sup> take this challenge head on; they should be applauded for their efforts.

The authors describe the results of a randomized trial of 88 patients cared for in a pediatric emergency department who were prescribed either strict rest or standard care as treatment of a concussion. Those participants in the intervention group received recommendations for 5 days of strict rest at home, which specified no work, no school, and no physical activity. Those participants in the control group were prescribed usual care, treating physicians prescribed whatever activity restrictions they saw fit. Study participants who were prescribed strict rest had a slower resolution of their symptoms and had a higher symptom burden during the first 10 days after their emergency

department visit than those prescribed usual care. There were no significant differences between the intervention group (prescribed strict rest) and the control group (prescribed usual care) with regard to balance scores, computerized neurocognitive assessments, or most paper-based neuropsychological tests after injury. Interestingly, the intervention group performed better than the control group on the symbol digit modalities test 3 days after injury, but worse than the control group on day 10 after injury. The authors postulate that 5 days of strict rest requiring restrictions in activities may cause deleterious effects, namely an increase in emotional symptoms.<sup>7</sup> This sentiment is consistent with our clinical impression, as well as emerging evidence suggesting that emotional symptoms increase over the course of recovery from concussion.<sup>8,9</sup>

Although this study adds some data on which to base recommendations for rest after a concussion, the optimal duration of rest after concussion remains unknown. Indeed, the optimal period of rest may vary, depending on age, gender, point in the calendar year, initial symptom level, the particular symptoms that predominate, the level of cognitive function, or other variables. As clinicians, we are forced to use the existing evidence, however limited, to develop a plan for our patients. In light of current consensus recommendations, previous investigations, and the study by Thomas et al,<sup>7</sup> a recommendation of reasonable rest for the first few days after a concussion followed by a gradual resumption of cognitive

activities seems prudent. The resumption of cognitive activities by patients who remain symptomatic may require instituting academic accommodations.<sup>5,10,11</sup> In addition, symptomatic patients may benefit, after a period of rest, from a gradual resumption of aerobic exercise as tolerated by symptoms, provided no increased risk of trauma to the head.<sup>12</sup> Once again, the timing of the initiation of exercise after injury remains unknown. Given the variability of forces involved in different concussive injuries, the different symptom clusters and burdens experienced by patients who sustain concussions, and the observed variability of recovery patterns after concussion, the entire plan for managing a concussion should not be determined in the emergency department. Rather, a few days of rest followed by prompt follow-up with the pediatrician, sports medicine physician, or other capable provider should be recommended, and each management plan should be tailored to each individual patient.

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