

Evidence does not support concussion grading

As a family physician who has been teaching and practicing sports medicine for more than 17 years, I found the article on concussion (“Concussion care: Simple strategies, big pay-offs,” *J Fam Pract.* 2009;58:410-414) very disappointing. The reference the evidence is based on is more than 12 years old and advances the use of a concussion grading system that is lacking in any solid medical data. Consensus statements from the 3 international conferences on concussion in sport—held in 2001, 2004, and 2008—state that grading systems should not be used to dictate concussion management. Rather, concussion is seen as an evolving diagnosis that is made when the symptoms stop advancing and a complete return to a neurological baseline is reached. The authors’ statement that patients with a “grade 1” concussion can return to the playing field within 15 minutes as long as their neurologic exam is normal and they have no symptoms is simply incorrect.

The article ignores the newest cognitive testing tools, heralded by the International Concussion Consensus Committee as an evidence-based means of facilitating an athlete’s safe return to play, and the recommendations in the table on return to play after multiple concussions have no evidence to support them. Nor is there any evidence for waking concussed patients every 2 hours at home to see if they are OK. A physician who believes that this level of care is required should admit the patient to a hospital for observation.

Drs. McConnell and Shubrook correctly point out that neuroimaging should be reserved for focal neurologic symptoms, advancing symptoms, or prolonged symptoms as seen in post-concussion syndrome, and they cite a relatively new article to support the use of sertraline in post-concussion treatment—which many of us in primary care sports medicine have been using for years. Overall, however, I was surprised to see such antiquated thought in a review article in *The Journal of Family Practice*. I hope to see more up-to-date information

with practical applications in concussion management, should you cover this topic again.

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Same-day return to play? Not for young athletes

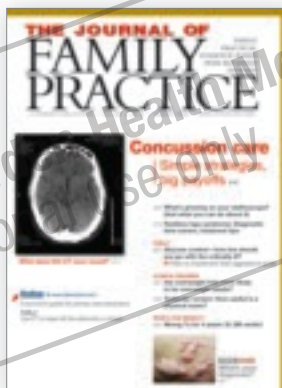
I’m a certified, licensed athletic trainer who often works with family physicians when dealing with high school athletes, and was excited to see an article on concussion in the August 2009 issue. After reading the article by Drs. McConnell and Shubrook, however, I felt it was important to voice my concerns about some of the statements they made.

The authors cite the position statement of the National Athletic Trainers’ Association (NATA),¹ which I co-authored, and indicate that “concussion scales are a useful guide for making treatment decisions.” The NATA paper does not state this. Rather, it discusses 3 methods related to grading, and recommends either grad-

ing after symptoms resolve or using adjunct assessment tools to plan individualized injury management.

Of greater concern is the statement regarding return to play (RTP) after sports concussions. The authors suggest that athletes with a grade 1 concussion can return to the field in 15 minutes if they are asymptomatic, citing American Academy of Neurology (AAN) guidelines. But the recently published summary statement based on the 2008 International Conference on Concussion in Sport in Zurich² states that, “It is not appropriate for a child or adolescent athlete with concussion to RTP on the same day as the injury regardless of the level of athletic performance.”

The statement further notes that “concussion modifiers apply even more to this population than adults and may mandate more cautious RTP advice.” The concussion modifiers referred to include individuals under the age of 18 and loss of consciousness, both of which are discussed in the hypotheti-



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cal case presented in the article.

Even with adult athletes, the recommendations from Zurich for same-day RTP indicate that this should occur only in instances in which there are team physicians present and sufficient resources, including access to neuropsychologists, neuroimaging, and sideline neurocognitive assessments.

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1. Guskiewicz KM, Bruce SL, Cantu RC, et al. National Athletic Trainers' Association Position Statement: management of sport-related concussion. *J Athl Train.* 2004;39:280-297.
2. McCrory P, Meeuwisse W, Johnston K, et al. Consensus statement on concussion in sport—the 3rd International Conference on Concussion in Sport held in Zurich, November 2008. *J Sci Med Sport.* 2009;12:340-351.

DRS. McCONNELL AND SHUBROOK RESPOND

We appreciate these thoughtful comments, and recognize that practitioners from many specialties treat concussions—family medicine, emergency medicine, sports medicine, internal medicine, and neurology, among others. Many of these specialties have their own recommendations for diagnosing and treating concussion. Likewise, there are several diverse published guidelines, most notably those of the First International Conference on Concussion in Sport in Vienna,¹ which are used to diagnose concussion.

Unfortunately, space limitations prevented us from discussing each set of recommendations at length in the current manuscript. As this article was written from the viewpoint of a neurologist, we opted to use the AAN guidelines. However, the discrepancies in the various guidelines illustrate the importance of continued evidence-based research on this topic.

We recognize the challenge of being a sideline practitioner, in that specific guidelines may not always fit your clinical situation. And we agree that treatment must be based on the individual patient and circumstances. We do not oppose more conservative approaches if practitioners feel this is appropriate for their patients.

In response to the comment concerning checking on the concussed patient every 2 hours, we would like to point out that this practice is still recommended and is referenced within the article. Concussed patients are routinely awakened in the hospitalized setting, with orders for “neuro checks” throughout the night to evaluate for neurologic deterioration. Adopting this

practice outside of the hospital can be beneficial and cost-effective, as it allows for scheduled monitoring within the home environment.

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1. Aubry M, Cantu RC, Dvorak J, et al. Summary and agreement statement of the First International Conference on Concussion in Sport, Vienna, 2001. Recommendations for the improvement of safety and health of athletes who may suffer concussive injuries. *Br J Sports Med.* 2002;36:6-10.

Stethoscope study overlooks bacteria on clinicians' hands

“What’s growing on your stethoscope? (And what you can do about it),” *J Fam Pract.* 2009;58:404-409, is a thought-provoking article. The study seems to prove that the simultaneous washing of hands and stethoscope with an alcohol-based foam will reduce the bacterial count on the stethoscope. This leads to the question, What’s growing on our hands?

The study implies that decreasing the colony count on the stethoscope may decrease the transmission of harmful bacteria to the patient. This theory may have been strengthened if the participants’ hands had also been cultured during both the pre- and post-wash phases, along with the stethoscopes. It has been proven that handwashing decreases colony counts if the proper technique is used.¹ However, the simultaneous washing of the stethoscope and hands, as done in this study, may not be as effective as handwashing alone. If the hands remain contaminated with harmful bacteria such as MRSA, there is a likelihood that the bacteria can be re-transferred to the stethoscope soon after the post-wash period.

In order for clinicians to make effective use of this line of research, these more basic questions—Do bacteria really transfer from stethoscopes to patients? And, if so, does this transfer result in clinically relevant infections?—need to be answered.

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1. Weber WP, Reck S, Neff U, et al. Surgical hand antisepsis with alcohol-based hand rub: comparison of effectiveness after 1.5 and 3 minutes of application. *Infect Control Hosp Epidemiology.* 2009;30:420-426.



More basic questions need to be answered, such as: Do bacteria really transfer from stethoscopes to patients?