

# CORNERSTONE Critiques

Commentary by Richard A. Johnson, MD, on Current Literature

## Study of School Sports Accidents Reinforces Need for Coordination and Basic Motion Training

### School Sports Accidents: Analysis of Causes, Modes, and Frequencies

Kelm J, Ahlhelm F, Pape D, et al. *J Pediatr Orthop.* 2001;21:165–168.  
 Study conducted at Chirurgische Abteilung, Krankenhaus Neunkirchen/Saar,  
 Akademisches Lehrkrankenhaus der Universität des Saarlandes, Germany

About 5% of all school children are seriously injured during physical education every year. Because of its influence on children's attitude toward sports and the economic aspects, an evaluation of causes and medical consequences is necessary. In this 18-month prospective study, 213 school sports accidents were investigated. Besides diagnosis, the localization of injuries and the duration of the sick leave were documented. Average age of injured students was 13 years. Frequency of accidents showed most (55.7%) of the accidents happening in the middle of the physical education class. The most common injuries were sprains, contusions, and fractures. Main reasons for the accidents were faults in basic motion training. Playing soccer and basketball were the most frequent reasons for injuries. The upper

extremity was more frequently involved than the lower extremity. Of all injured students, 3.7% had to be hospitalized for an average stay of 12 days, whereas seven (3%) patients had to undergo surgery. Three cases required a second surgical procedure because of the explantation of a metal implant. The time involved in remaining away from sports activities was 18.2 days. In this study, there was not one case in which physician and teacher contacted each other and no case in which a student was partially exempted from sports. The authors concluded that sports physicians and teachers should work out a program outlining the individual needs and capabilities of the injured students to reintegrate them into physical education.

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### COMMENTARY

The lesson to learn from this study by Kelm et al of sports injuries during school physical education classes is that these children are much more vulnerable to upper-extremity injuries, primarily the hand. It is postulated that most of these injuries occur because of a basic failure with required motion and coordination control. This makes intuitive sense in that those students who may be exposed much less frequently to ball movement and coordination activity will be at more risk for hand and upper extremity injuries, which are the point of first contact with most balls. In contrast, the more trained athlete has greater susceptibility to lower-extremity injuries from increased speed and force. This information would imply that coordination and motion training might be useful with injury prevention for physical education students in school.

## Studies Examining Renal COX-2 May Provide Insight into the Kidney's Response to the New COX-2 Inhibitors

### NSAIDs and the Kidney Revisited: Are Selective Cyclooxygenase-2 Inhibitors Safe?

Eras J, Perazella MA. *Am J Med Sci.* 2001;321:181–190.

Selective cyclooxygenase-2 (COX-2) inhibitors have provided relief for patients suffering from chronic pain and other inflammatory conditions and have reduced adverse gastrointestinal effects. The documented reduction in gastric erosions, ulcerations, and perforations during the use of COX-2–selective inhibitors raises the question: would the kidney be similarly spared? Understanding of these enzyme isoforms in the kidney is incomplete. However, kidney tissue seems to possess “constitutive” or homeostatic COX-2 enzyme, suggesting a role for prostaglandins produced by this isoform. In addition, studies evaluating the renal effects of the selective nonsteroidal anti-inflammatory drugs

(NSAIDs) are inconclusive, and available data on the renal effects of COX-2–selective inhibitors are conflicting. Inadequate numbers, varied baseline patient characteristics, and different doses and lengths of drug treatment hamper comparison of the small number of clinical investigations available for review. This article reviews the role of cyclooxygenase enzyme activity and associated prostaglandins in the kidney and the adverse renal effects of nonselective NSAIDs. The authors also touch on the COX-1/COX-2 selectivity of NSAIDs, the localization of COX enzymes in kidneys, and clinical studies examining the renal effects of selective COX-2 inhibitors.

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### COMMENTARY

The authors provide the reader with a thorough review of the effects of NSAIDs (including COX-2 inhibitors) on the kidney. It appears that the clinician should heed the same precautions for nonselective NSAIDs with respect to the potential kidney injury when using COX-2 inhibitors. Whether the COX-2 renal toxicity is the result of crossover inhibition of COX-1 or from actual blockade of renal-induced COX-2 is unknown. Nonetheless, the same cautions relating to advanced age, preexisting renal impairment, and the likelihood of volume and sodium depletion must be considered. These issues affect the elderly in high proportion. It is just this group of patients that the clinician might be inclined to more liberally prescribe COX-2 inhibitors because of the increased incidence of painful and limiting osteoarthritis, and the concern for gastrointestinal bleeding with COX-1 inhibitors—KIDNEY BEWARE!