

## Editorial

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### **Injury prevention in professional sports: protecting your investments**

In this issue, Hägglund et al. (2009) report the prevalence of different types of injuries in elite soccer players and their respective time losses. Muscle strains, knee ligament injuries, and ankle sprains together accounted for approximately 60% of the total time lost to injury. This is noteworthy because the sports medicine literature is replete both with studies that identify specific risk factors for each of these injuries and with studies that demonstrate effective strategies for their prevention. It is unfortunate that the prevailing opinion among coaches and managers of professional teams, as well as the media, is that injuries are random events that are an inevitable part of the game. For example, Steven Gerard's departure from a recent Champions League game with a recurrence of his longstanding groin injury was dismissed by the team manager as "just bad luck." The reality is that the most common injuries can be prevented with the application of appropriate methods.

The scientific challenge in injury prevention is to identify extrinsic and intrinsic risk factors for specific injuries in particular sports and then apply effective interventions to reduce the risk associated with those factors. That may be the easy part. The bigger challenge is getting teams to buy into the concept of injury prevention itself. The idea that a professional sports team might spend billions of dollars annually on player salaries, without investing in protecting those players from injury, is incomprehensible. Yet this is exactly the case in some professional sports. In a recent *New York Times* article on injuries in professional baseball (Schmidt, 2009), the general manager of a Major League Baseball team was quoted as saying, "I just don't have the money to let someone spend all year looking into this." Given the fact that teams paid approximately a half-billion dollars to players on the disabled list in the 2008 season (Schmidt, 2009), teams should be motivated to implement injury prevention strategies.

Compounding the issue of injury prevention is the fact that some common medical practices in profes-

sional sports may have detrimental effects on injuries. The widespread use of non-steroidal anti-inflammatory medications (NSAIDs) in professional sports is well documented. Most alarming is the use of intramuscular injections of ketorolac tromethamine (Toradol) in professional American football: 93% of teams in the National Football League reported using the medication on game day, with an average of 15 players per team being treated (Powell et al., 2002). The primary purpose of pre-game NSAIDs appears to be pain relief. The possibility that pain-inhibiting medication might increase the risk of injury does not seem to be a concern. Furthermore, specific deleterious effects of NSAIDs have been documented. In a previous editorial in this journal, Mackey (2007) questioned the efficacy of giving healthy athletes NSAIDs when they are known to impair muscle regeneration after injury and inhibit normal anabolic processes. Ironically, NSAIDs also appear to increase exercise-induced markers of systemic inflammation (Nieman et al., 2006). If professional sports teams viewed their athletes as investments, they might realize that the short-term gains achieved with pre-game pain relieving medications may lead to substantial losses in the long term.

The analogy that injuries in sports are as random as being hit by lightning is apt, but with one caveat. Measurable risk factors can be identified for most injuries. Ignoring those risk factors is akin to allowing an athlete to walk into a lightning storm holding a metal pole above his or her head.

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