



Philip M. Farrell, MD, PhD

Guest Editorial

Much more research needed on injury prevention

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Personally, I wish I knew more about injury prevention, the theme of this issue of the *Wisconsin Medical Journal*. Such knowledge might have helped me avoid some of the many sports-related injuries I've sustained in my life. During my youth, I tore my rotator cuff as a baseball pitcher, and I fractured a rib water skiing. Later in life, I suffered a terrible hamstring pull, again while water skiing. More recently, I tore cartilage in my knee when I jumped from my drifting boat on to a pier—an injury that required arthroscopic surgery. At that point, my wife asked, "Are you getting the message?" And, indeed, since then I've been thinking about prevention.

I've learned the hard way that recreational athletes are at significant risk of injury, and I think this is particularly true as we age. But we cannot let that deter us! As we all know, Americans are more sedentary and overweight than ever before; for the sake of our collective health, we absolutely must become more physically active. I heartily endorse the fitness challenge Governor Jim Doyle recently issued in hopes of motivating Wisconsinites of all ages to start exercising regularly. Here in the Badger State, almost 60

percent of our residents are either overweight or obese. Even a minimal amount of activity can go a long way in helping to reduce that alarming number.

But as more people increase their physical activity, we no doubt will see a related rise in injuries. We will need to rely on the experts for instructing us in ways to prevent injuries. The specialists at the UW Health Sports Medicine Center immediately come to mind. These physicians, athletic trainers, physical therapists, and other professionals are part of one of the most comprehensive sports medicine programs in the country.

As with other sports medicine specialists, the UW experts spend most of their time diagnosing, treating and rehabilitating athletes and active individuals with sports-related injuries and medical conditions. In recent years, however, several in the Wisconsin group also have begun conducting research that examines injury predictors and ways to avoid them.

Take, for example, the work of Tim McGuine, PhD, a licensed athletic trainer at the center. He concentrates on ankle injuries, the most common of all sports injuries among youth, high school, and college athletes. Preliminary results of a study recently completed by McGuine and co-principal investigator James Keene, MD, suggest that balance board exercises will

reduce ankle injuries in high school athletes. The full results of the study will be discussed at the American Orthopaedic Society for Sports Medicine later this summer, but it appears that the exercises improved stability by strengthening the hips, knees, ankles, and core muscles.

European studies have found balance boards to be equally effective at preventing ACL tears in professional soccer players. Locally, UW sports medicine physical therapists and exercise science staff are using balance exercises to reduce knee, ankle and hip injuries in athletes on area teams.

Tom Best, MD, PhD, also of the UW Sports Medicine Center, is taking another tack. He and his collaborators have developed a mechanical model that helps them understand tissue responses to a variety of loading patterns. Ongoing studies are directed at clarifying the role growth factors, cytokines and inflammatory cells play in tissue repair. The researchers also use MRI to examine the frequency of injury—muscle by muscle. By understanding more about injury and recovery, they hope to be able to approach prevention and treatment more scientifically.

In a topic dear to my heart, Best and physical therapist Marc Sherry also have studied rehabilitation programs aimed at preventing the recurrence of acute hamstring strains. Their protocol compared a traditional hamstring stretching and strength-

Doctor Farrell is Dean, University of Wisconsin Medical School, and Vice Chancellor for Medical Affairs at UW-Madison.

ening program to the UW program they call a “trunk stabilization and dynamic agility program,” which entailed broader stabilization of muscles around the pelvis and hamstring through movement-based exercises.

The research found that the re-injury rate was 70 percent for the traditional approach and 7.7 percent for the newer approach. Published in the *Journal of Orthopedics and Sports Physical Therapy*, the study was selected by the American Physical Therapy Association for the 2004 Research Excellence Award.

Clearly, we need much more research like these examples. We need more information on injury prevention as it pertains specifically to gender, age, and type of activity. As a profession and a society, we urgently require scientific knowledge that will help us remain injury-free as we significantly alter our lives to become much more active.

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