

Risks Associated with Sport Specialization in High School Athletes

By Timothy A. McGuine, Ph.D, ATC; David R. Bell, Ph.D, ATC; Eric G. Post, Ph.D, ATC

In recent years, there is an increasing trend toward intense sport-specialized training (sport specialization) among youth and high school athletes. Sport specialization is often characterized as intense, high-volume training in a single sport at the expense of participation in multiple sports.

In response to this trend, numerous national and international medical and sport organizations have released position statements warning against early sport specialization due to the potential for psychological stress and overuse injury. These organizations also called for more research to determine the scope of specialization in various ages and sports, the attitudes that lead to specialization and the increased risk for injury that is associated with sport specialization.

Scope of the Problem?

Determining how many high school athletes actually specialized in a sport was difficult since there was limited, if any, information regarding the issue. Recently, a sport specialization scale has been developed to better classify athletes as low, moderate or high based on their behavior, rather than classifying by the number of sports in which an athlete might participate. The scale consists of three “yes” or “no” questions (Figure 1).

Figure 1. Sport Specialization Scale

Have you quit another sport to focus on one sport?	YES	NO
Do you consider your primary sport more important than your other sports?	YES	NO
Do you train more than eight months a year in your primary sport?	YES	NO

Scores are calculated by a “yes” response being 1 point and a “no” response being 0 points. Specialization level is classified by scores 0-1 being low specialization, 2 being moderate specialization and 3 being high specialization.

Through a series of studies using these questions, we now know that 10 to 38 percent of teenagers who play sports are classified as highly specialized. Females are more likely to specialize compared to males, and school size influences specialization rates with

larger high schools more likely to have large numbers of specialized athletes. In addition, some of the highest rates of specialization are in the most popular high school sports of basketball, soccer and volleyball. Finally, 50 percent of high school athletes who specialize in a single sport also participate on a club team in the same sport.

Sport Specialization and Injury

The association of sport specialization and risk of injury has not been well understood for many years. Early research showed that baseball pitchers, tennis players and female runners with specialization behaviors sustained more injuries than their peers. While useful, these studies did not fully capture the full association of sport specialization and increased risk of injury.

In 2016, the NFHS Foundation funded a study to obtain more complete data regarding sport specialization and risk of injury in high school athletes. Researchers found that specialized high school athletes in a wide range of sports were more likely to report sustaining previous lower extremity (foot, ankle, knee, hip) injuries.

Equally important, however, the research team followed these same athletes over the course of an entire school year and recorded all the injuries sustained in every sport in which they participated. They found that moderately specialized athletes had a 50 percent increased risk and highly specialized athletes had an 85 percent increased risk of injury compared to the athletes with a low level of specialization.

While this increased risk was more pronounced for overuse injuries such as tendonitis and stress fractures, it was also found in ankle sprains. Further, the increased risk of injury was present regardless of the sport and the number of competitions they participated in during the previous 12 months.

Sport Specialization Attitudes

As the risks of specialization have become more well-known, parents and coaches have grown increasingly concerned about sport specialization. Recent surveys have found that the majority of parents and coaches are highly concerned about specialization. So, why is specialization still increasingly common?

also how I met my husband. He was from the school that I ran for as a co-op, Lac qui Parle Valley. Although larger schools could be more challenging, I wanted to prove that stigma wrong as a small-school kid. I had an opportunity and belief that I could compete with everyone in Minnesota. You don't have to have the best-of-the-best resources to be a great track athlete.

Question: What role did your parents play in your participation in sports?

Tollefson: My dad was a former college athlete who had all girls. When he had all of us outside, playing catch, throwing pop flies as high as he could when we were first learning to catch a ball, he never took it easy on us. He taught us to never be afraid of anything, including a talent. I think us three girls learned a little something different from our dad and mom. One thing that I really enjoyed was the time that I got to spend with my dad on our runs together, learning about him as an athlete. Being a lawyer, he'd use these analogies about how to race and train. It was my favorite time with him. Equally important, my mom knew how to train our brains and would constantly tell us how good we could be and to dream big. I was lucky to have them both in my corner providing so much support.

Question: What are your best memories from your participation in high school cross country and track?

Tollefson: I think the big one for me in high school is when I won my fifth cross country title. It wasn't so much about winning that race, it was more about conquering my fear year after year of

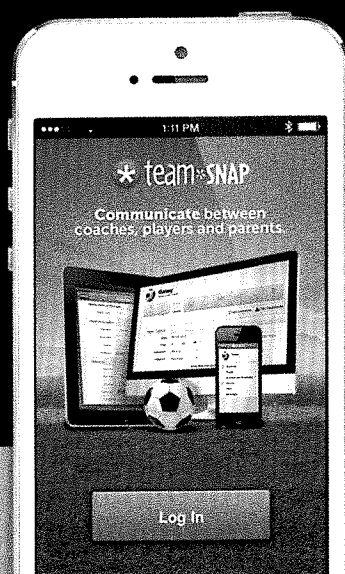
getting beat. It shouldn't be life or death, and it really wasn't, but it was important to see how tough you could be year in and year out, as well as handling more pressure. As an 18-year-old, you think you're getting older and can handle more things but you're still pretty young. In track, one of my favorite memories was being confident enough to step down in distance my senior year and run the 800 as my last race ever in Minnesota. I hadn't lost a race since eighth grade in Minnesota and I ended up getting second place in the 800 at state in Minnesota. I did it because I wanted the chance to run against an amazing athlete who had won every year as well, in addition to seeing how good I could be in a different event. It was one of those things where it showed character and that I was willing to try. You don't always succeed but I did very well that day.

Question: How have you been involved in track and cross country since your Olympic participation in 2004?

Tollefson: If you make the Olympic team, a lot of doors open. Depending on which door you choose, your path can go many different ways. I was able to use my education, and even before the Olympics I tried to remember that the sport can be gone with just one injury, so I always had my hand in other things. After my career as a professional runner in the Olympics, I got heavily involved with television and speaking. I have camps and now a podcast. I'm basically constantly talking about running and being physically fit and healthy. It has really been a great way to segue into life after being an athlete. **HST**

SAVE TIME WITH YOUR TEAM

TeamSnap makes it simple for coaches, managers, parents & players to organize teams in a snap.



Easy Team Scheduling



Emails and Text Messaging



Check Player Availability

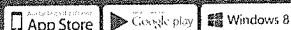


Game locations with Google Maps



Sign up at TeamSnap.com
Free and Paid plans available.

 **teamsnap**
THE EASIEST WAY TO MANAGE YOUR TEAM



To manage your team visit TeamSnap.com