Preventing sports burnout and overuse injuries in youth athletes—focus on fun and diversification first!

By Jessie Fudge, MD, Sports Medicine

Clinical question
How do we, as health care providers, support young athletes in reaching their sports goals while also preventing overuse injuries and burnout?

Why did we choose this topic?
You may need more than 10,000 hours of practice to become an expert chess player or violinist... but the 10,000-hour rule does not apply in the same way to sports! In fact, prematurely focusing on a single sports activity could lead to early burnout or overuse injuries. Exposure time is only a small piece of achieving elite status in sports.

Sports participation and physical activity are very important for youth to develop lifelong physical activity habits, social skills, and teamwork and leadership skills. Yet 70% of youth athletes drop out of organized sports before the age of 13.

How could this change my practice?
Physicians are in the perfect position to ask about early specialization, year-round sports, and playing the same sport on multiple teams in the same season. Recognizing the potential for burnout and overuse injury early on allows us to educate young athletes and their families on the importance of sports diversification and free play.

What is “sports specialization,” and how soon is too soon for young athletes?

Sports specialization is defined as focusing on one sport, usually to the exclusion of other sports and usually year-round. Select and travel leagues in the Seattle area are starting as young as age 7 and encouraging athletes to pick a single sport. The pressures for sports specialization come from numerous directions—parents wanting what is “best” for their kids, kids aspiring to be the next big name in their sport, families looking for college scholarships, and coaches thinking that specialization is best for the athlete and for their team.

Who makes it beyond high school?

- 3–11% of high school athletes compete at the NCAA level,
- 1% get a college athletic scholarship, and
- Fewer than 0.05% make it to a professional level of their sport.

When to specialize?

Sports specialization may lead to higher athletic performance, but the optimal timing of specialization is unclear. Studies have shown that Division 1 NCAA athletes are more likely to have played multiple sports in high school, and that their first organized sport is likely to have been different from the one they went on to specialize in. In fact, limited studies suggest that early diversification—participation in multiple sports—with later specialization is more likely to lead to elite status.
Current evidence recommends that for most people we discuss the following:

- Delay specialization in most sports until after puberty (age 14–16) to minimize risk and improve athletic success.
- In a few sports, like dance and gymnastics, athletes peak sooner and may require earlier specialization to achieve elite status.

**Risks of early specialization**

Risks of early specialization include physical, emotional and social changes. Athletes can become socially isolated from their peers when invested fully in one team. For some, the pressure from sports can lead to anxiety and depression. And athletes can develop overuse injuries that lead to pain, loss of playing time, or even the inability to continue competing in that sport. Ultimately, all these factors can lead to burnout and loss of interest in sports and/or physical activity.

**Recommendations**

**Encouraging sports diversification, free play and FUN will increase long-term sports involvement, decrease burnout, and decrease overuse injuries.**

When you encounter a patient younger than 18 years old who has specialized in a single sport or is considering specialization, remember and counsel as follows:

- The primary focus of sports should be to have fun and learn life-long physical activity skills.
- Participating in multiple sports, at least until puberty, decreases the chance of injuries, stress, and burnout in young athletes.
- Most athletes who make it to college scholarship and professional levels were multi-sport athletes in high school!

Advise young athletes to:

- Limit weekly and yearly participation time by:
  - Taking one season off from one sport—it's OK to play another sport during "time off"
  - Taking at least one rest day per week
  - Delaying single-sport specialization
- Limit sport-specific repetitive movement (e.g., pitch counts in baseball)

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_Sports have changed a lot since I was a youth athlete. I loved sports and survived the difficulties of adolescence with the support of my teams and by staying physically active. There was a soccer season and a track season and a ski season._

_By taking 3 months off from soccer to focus on skiing, I allowed my body to recover from the repetitive running and kicking drills. Not only did the time away increase my excitement to return to my favorite sport, but the incredible endurance I gained from my season on the cross-country ski courses of Minnesota made me a better soccer player overall._

—Jessie Fudge, MD

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**References**
