

The Importance of Injury Prevention

- **Q:** Why is injury prevention so important?
 - **A:** Presently, approximately 12 million students age 5-22 currently participate in athletics. Within this group, the various injuries they will suffer this year alone will result in roughly 20 million missed days of school and 43 billion dollars in medical expenses. Moreover, suffering from even a single athletic injury increases one's risk of future injuries throughout childhood and adulthood and puts them at risk for various life altering conditions including osteoarthritis.
- **Q:** But aren't sports injuries unavoidable?
 - **A:** While some risks of injury with sport participation cannot be changed, such as genetics and chance of injury while competing, other factors can be improved including body mechanics, preparedness for activity, and conditioning levels. In other words, while injuries aren't 100% avoidable, a lot can be prevented! Additionally, injury prevention measures have been shown to be effective for athletes of all kinds as even our fastest, strongest, and most talented athletes are at risk for preventable injuries.
- **Q:** What's stopping us from preventing these injuries?
 - **A:** At the moment, our biggest obstacle is the lack of public education on the injury prevention topic as a whole. Presently, we live in a time where athletics focus less on youth health, proper development, and sport enjoyment and more on scholarship potential and performance statistics. In fact, levels of youth fitness across the board are readily declining, while issues involving overtraining, poor nutrition, and poor hydration are rising. In order to truly prevent injuries, we need to aim our focus on coach, family, and community education with specific attention to overuse, overload, and overexertion prevention in athletics.

Fundamental Areas

- **Implementing Injury Prevention Programs**
 - Incorporating an injury prevention program is critical for athletes of all ages, sports, and skill levels. In order to have the greatest impact/effect possible, these types of programs need to start in early off-season/preseason and continue for maintenance throughout an athlete's entire regular season with a minimum of 15-20 minutes dedicated 2-3 times per week.
 - These types of programs, such as ACL injury prevention programs, often consist of several fundamental components including exercises aimed at improving lower extremity plyometrics, dynamic muscle balance, overall strength, general flexibility, body awareness, and core/trunk control. Considering our ACL injury prevention program example, in focusing on these areas with the recommended consistency above, the goal is to decrease "non-contact" ACL injuries by increasing the effectiveness of our muscle activation patterns and by decreasing the landing force, varus moments, and valgus moments our knees can face.
 - It has been shown that with proper devoted time and compliance to these types of programs, there is a high likelihood of reduced injury rates by upwards of 50-60%. In fact, looking at the FIFA 11+ program specifically, it has been shown to increase general neuromuscular control, decrease number of overuse, acute, and ACL injuries in collegiate female soccer players, decrease common injuries such as ACL tears and hamstring tears in male collegiate athletes, decrease hamstring injuries in professional baseball players, and even increase win to loss ratios in various European teams.
 - As a bonus, not only do these types of programs have the ability to immensely benefit athletes in regard to their overall health and performance capabilities, they are also extremely cost effective, especially when considering the amount of money and missed playing time injuries can cost athletes and their families.
- **Planning Periodization**
 - Sport periodization is when a year is divided into periods of different training focuses. A properly designed periodized program begins with individualized screening assessments to evaluate for areas of imbalance, weakness, or lingering injury that may be detrimental to an athlete's overall development or performance. Based on the results of the screening tests, tailored corrective exercises can then be provided to help reduce each athlete's risk of future injury as well as enhance their overall performance.
 - Throughout the remainder of the training year, an athlete would then progress through different training phases including sport-specific preparation and skill development during preseason, skill maintenance and competition during regular in-season, rest/active recovery during post-season (exercising only for whole-body wellness/fitness purposes), and building/growing in areas of needed improvement during off-season. As a whole, this allows for efficient athletic progression throughout the year and optimizes overall development, sport performance, injury prevention, and burnout prevention.
- **Avoiding Early Sport Specialization**
 - Early sport specialization is defined as intentionally playing a single sport year-round, or engaging in a single sport for at least 8 months (3 seasons) per year, at the exclusion of other sports while under the age of 14.
 - Unfortunately, due to the belief that early sport specialization leads to a greater chance for elite play, early sport specialization has been on the rise for the past 20 years, with 30% of athletes today now highly specialized by the time they reach high school. Looking at the research however, it is clear that there is no evidence that links early sport specialization to high level play. In reality, most professional athletes even encourage younger athletes to play multiple sports for as long as they can in order to become more well-rounded, optimize their health/fitness, and improve their chances at collegiate and professional play.
 - Furthermore, when comparing early sport specialization to late sport specialization, it is clear that early sport specialization provides no benefits to athletes. In fact, late specialization has been shown to provide greater performance benefits, greater intrinsic motivation, and greater enjoyment as well as a decreased risk of overuse injuries, social isolation, and burnout when compared to early specialization. That being said, those athletes who choose to specialize later in life end up having greater mental health, physical health, and overall athleticism than those who choose to specialize early. Moreover, it has also been shown that individuals who specialize early have a much greater chance/higher risk of serious injuries in their athletic careers.
 - Altogether, as the most important part of youth sports is health and development, we need to find a balance between fun and success. As such, we need to optimize training and recovery by encouraging those involved in athletics to guide athletes to limit their training/competition in a single sport to no more than 8 months per year, participate in fewer hours of sports a week than their age (≤ 16 hours), take 1-2 days off per sport per week, and plan 1 hour of free play for every 2 hours of sport activity.