

# Youth Sports Health and Safety: Preventable Injuries

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**While it is impossible to completely eliminate the risk of incurring an injury during sports participation, many injuries sustained during training and competition are avoidable – especially those injuries related to simply doing too much too often. Repeated excessive physical activity without enough recovery time and rest between training sessions and competitions and throughout the year is a significant problem for young athletes whose bodies are still developing. Careful attention to ensuring a diversified, balanced and progressive athletic exposure with appropriate scheduling and sufficient time off can reduce musculoskeletal injury risk and enhance performance.**

For young athletes, regular participation in youth sports can provide myriad health and fitness benefits, as well as an opportunity to learn about discipline, commitment, setting and achieving goals, teamwork, and fair play. The advantages can extend even to enhanced academic achievement. And it can (and should) be a lot of fun too! Unfortunately, for boys and girls, when playing sports long enough, hard enough, and often enough, sustaining an injury becomes a reality of the game as well.

Playing by the rules, using the right equipment and protective gear, and learning proper technique all contribute to minimizing injury risk. Moreover, getting enough sleep, eating well, and adequate hydration are integral to maintaining performance and safety. A comprehensive pre-participation exam can also help in identifying certain potential problems and avoidable risks. And every youth athlete, no matter the level of ability, should be able to enjoy any sport in a clean and safe environment. All of these

factors play key roles in keeping sports safe and enjoyable. But even with all of these precautions taken and conditions provided, injuries will still occur. The very nature of sport and competition carries the risk of getting hurt.

## **Overuse – A Preventable Problem**

These days, there is an increasing prevalence of musculoskeletal injuries that, for the most part, are avoidable. With earlier sports specialization and higher expectations of athletic and performance “success” at a young age, the underlying culture of youth sports has changed... and more and more kids are paying the price. Without an emphasis on healthy, long-term progressive development, diverse and seasonal participation, social interaction, and fun, overuse-related injuries are increasing — the result of doing too much too often. Whether it is driven by parents, coaches, media, or other stakeholders in the youth sports industry, the pressure to specialize early

and train and compete year-round at young ages, in the hopes of making the travel or “select” team or securing a college scholarship or professional endorsement, is increasingly widespread and stronger.

## Key Contributing Factors

**Excessive Loading.** Overuse occurs when repetitively there is less-than-maximum loading of one or more parts of the body without sufficient rest and recovery to allow the muscle, tendon, bone or other tissue to positively adapt. The child's body is overwhelmed by the excessive stress and inadequate recovery periods to the point where there is a weakened condition and breakdown, resulting in one or more areas of damage to the shoulder, elbow, knee, spine, or other vulnerable area of a youth athlete's immature, developing musculoskeletal system.

**Growth and Immature Bodies.** An imbalance between training or competition load and recovery is particularly a problem in young athletes, because they are still growing and their musculoskeletal systems are far from being mature and able to handle the physical stress. Accordingly, a number of growth-related injuries typically occur in early adolescence. Importantly, growth, maturation, and development rates are very individual. These factors must be considered in athletic loading and physical and performance expectations.

**Early Specialization.** While it may seem intuitive to specialize earlier to achieve greater athletic success in a certain sport, there are many unintended potential consequences. Except for highly technical sports such as gymnastics, figure skating, and swimming/diving, where elite-level competition exposure and achievement seem to be required before adolescence for those who want to excel in these sports, specializing too early encourages overload and overuse, and limits exposure to other training and sporting activities that could help develop a broader and higher level of athletic capacity, resilience, and achievement. Moreover, early specialization limits exposure to one or more other sports that a young athlete might be better at and enjoy more!

## The Solution

**Development Takes Time.** For all youth athletes, the focus should be on diversified, balanced, and progressive athletic exposure and development across childhood and early adolescence. And with a properly planned and well-supervised program that emphasizes building on a foundation of optimal functional movement, balance, strength, endurance, and neuromuscular control, musculoskeletal injury risk is reduced and athletic capacity and sustained performance are enhanced. Moreover, because of the vulnerability to overuse injuries during rapid adolescent growth, this may be a more optimal time to focus on technique versus ramping up the training and competition loads. It is also important to appreciate that

improving fitness takes time! Young athletes who are not fit going into a pre-season training and preparation period are not going to make measurable changes in conditioning and fitness in just a couple of weeks. Achieving significant improvements and attaining optimal athletic fitness is a long-term process.

**Recovery.** Prior injury history is one of the best determinants of injury risk. No child should train or play hurt. If an injury occurs, it is essential that full recovery and rehabilitation are complete before starting up again. Moreover, the factors that prompted or otherwise contributed to the injury need to be addressed and corrected — faulty technique and mechanics, inadequate fitness or maturity to tolerate the training and/or competition load, and inappropriate training demands and performance expectations will prompt further injuries, unless appropriate changes are made. Properly addressing all injuries, and allowing enough time to heal and recover, can minimize overall time lost from sport and prevent more serious problems from developing.

**Scheduling.** Providing enough time and sufficient rest between (especially same-day) training sessions, matches/games, and tournaments can significantly improve safety and performance in young athletes, by enhancing recovery and minimizing the “carry-over” effects from previous physical activity, heat exposure, and physiological strain. Youth sports governing bodies and event administrators need to particularly address this issue and provide more specific, appropriate, and evidence-based guidelines for minimal rest periods between same-day contests for all levels of tournament play. Youth athletes are capable of tolerating a lot and performing well and safely in a range of conditions, if they prepare well, manage hydration and other nutrition sufficiently, get enough sleep, and are provided the opportunity to recover adequately between training bouts, individual contests, and long periods of sustained training and competition.

## The Message

Very few youth athletes have the inherent athletic gifts and the opportunities to play sports at a professional level. And there are certainly no guarantees for a college athletic scholarship or even regional success in high school. But thinking long-term, staying healthy, and avoiding preventable injuries from doing too much too soon gives young athletes the best chance. This is the foundation and pathway to developing healthy, capable, and resilient young athletes and sustainable participation and success at all levels of play. The responsibility for encouraging and implementing this healthier pathway falls on the shoulders of all stakeholders in youth sports — especially parents, coaches, sport governing bodies, and healthcare providers. Take an active role in changing the youth sports culture so that youth sports can become once again a foundation for life... and fun!



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