

The importance of age-appropriate care of pediatric and adolescent athlete

The following issue of *Annals of Joint* is a detailed examination of the pediatric and adolescent patient in sport. We have designed the articles to address a wide range of topics related to this theme, including current epidemiological information about pediatric sport participation, acute on-field injury management, medical and metabolic issues, and in-depth reviews of injuries to specific anatomic areas.

An estimated 30 million American youths participate in organized athletics, and this number is steadily increasing, in part driven by public health initiatives that promote sports activity for physical and psychological benefit. Participation in sports has been linked to improved self-esteem, reduced childhood obesity and decreased alcohol and drug use. However, sports are also one of the leading causes of injury in adolescents. There is a wide array of injuries that can occur during play, and previous studies have linked certain sports to an increased risk of specific injuries. In addition, the frequency of surgery for these injuries has increased in a pattern commensurate with the rise in sports participation.

Injuries in youth athletes present both as acute injuries from falls or on-field trauma and chronic, over-use injuries due to excess participation, improper technique and/or the unique anatomy and biology of the physis. Shoulder and elbow injuries include those specific to the throwing athlete, including traction injuries (physeal stress fractures and apophysitis), impingement syndromes, and osteochondritis dissecans lesions. Knee injuries range from acute anterior cruciate ligament (ACL) ruptures and meniscal tears, particularly with sports involving jumping, cutting, or pivoting, to more subacute chondral lesions or pain syndromes. In the spine, young athletes can present with pathology of the neurologic structures (i.e., stingers, neuropraxias), ligamentous support (i.e., strains), or bony vertebral support (i.e., fractures, spondylolisthesis).

Young athletes are also victims of similar metabolic syndromes and acute illnesses that can affect adults. The female athlete triad, for example, can have significant ramifications on ability to achieve peak mass, delayed or interrupted menarche and other endocrine abnormalities. On-field management of acute injuries or other medical conditions, such as sudden cardiac death or hyperthermia, are critically important. Concussions and their long-term sequelae are receiving increasing attention in the public sphere. Proper acute diagnosis and return to play management is absolutely necessary in the current climate.

With an ever-growing level of sport participation among pediatric and adolescent patients, there is also an increasing focus on injury prevention and rehabilitation. For example, research continues into pitch counts and limitations in the pediatric throwing athletes. Accurate diagnosis of acute concussions and stratification to return to play algorithms continues to be investigated and improved.

Awareness of injuries and knowledge of their diagnosis and treatments is paramount for the practicing orthopaedic surgeon. We hope that this issue of the journal focusing specifically on the pediatric athlete can aid in making all athletics as safe, and a beneficial, as possible for all pediatric and adolescent participants.

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