

Long-Term Athletic Development & Coaching Series #1

Understanding Ages and Stages to Inform Developmentally Appropriate Youth Sports

Youth sports participation offers many benefits if led by qualified coaches, supported by parents and embraced by the players themselves.

At every stage of youth development there exist evidence-informed recommendations for the amount of sports-participation experiences boys and girls should get relative to practice and competition time as well as general guidelines for age-appropriate training strategies to support healthy development and sport success. As the first line of defense against overuse, overtraining and burnout among youth athletes, and the first line of promotion of sport-based youth development, it is important for youth sport coaches to know and apply these recommendations.

Long-term athletic development provides the framework in which to promote a holistic approach to sport-based youth development. Unfortunately, the term “developmentally appropriate” is often used but rarely explained. For youth sport experiences to be developmentally appropriate, the experience must match each child’s physical, psychological and social readiness to a level of activity/sport that will provide them with the challenges and support they need for growth. Meeting kids where they are and designing and implementing developmentally appropriate training at each age and stage supports fitness, sports participation and lifetime physical activity. Understanding the stages of childhood and adolescent development as they relate to physical, mental and social maturity can provide coaches with the tools needed to assess and evaluate growth and design training to support development. In turn, these growth and development milestones can be used to inform youth sports coaching decisions.

Ages and Stages Overview

Young athletes are always growing; even within a season, their growth can seem visible. For example, during adolescence, girls age 10 to 16 will on average grow 8 inches and gain 38 pounds while boys will grow an average of 12 inches and gain close to 48 pounds throughout an even shorter timespan (ages 12 to 16). And this is just the physical growth we can see! The psychological and social changes are not as easy to chart but are equally important as they relate to the developmental needs of the athlete.



While stages of development are associated with age categories, it is important to remember that these are only guidelines. The development pattern for each child will be as unique as they are, and that is okay. Table 1 highlights some of the characteristics of physical, psychological and social youth development that coaches should understand when coaching young athletes.

Table 1. Key Developmental Characteristics by Age and Stage

Stage (Ages in Years)	Physical Maturity	Psychological	Social
Early Childhood (up to 8)	<ul style="list-style-type: none">• Brain grows to 90% adult size• Motor skill development improvement	<ul style="list-style-type: none">• Can understand commands with up to three separate instructions	<ul style="list-style-type: none">• Depend on parents for emotional regulation and attachment
Middle Childhood (6-12) Early Adolescence (10-13)	<ul style="list-style-type: none">• Motor skill refinement• Rate of physical growth increases• Secondary sex characteristics begin to appear<ul style="list-style-type: none">• Girls may begin as early as age 8• Boys as early as age 9	<ul style="list-style-type: none">• Right and wrong are fixed and absolute	<ul style="list-style-type: none">• Building foundational skills for social relationships with others• Enhanced awareness of self• Comparison to peers• Increased need for privacy
Middle Adolescence (14-17)	<ul style="list-style-type: none">• Girls have reached full maturation	<ul style="list-style-type: none">• Better ability to think abstractly but may not always apply it in the moment	<ul style="list-style-type: none">• Increased desire for freedom and independence• Peak peer pressure
Late Adolescence (18-21+)	<ul style="list-style-type: none">• Both sexes have reached full growth height	<ul style="list-style-type: none">• Better impulse control• Frontal lobe is not completely developed until well into their 20s!	<ul style="list-style-type: none">• Focus on goal-oriented behavior• Emotional and social maturity may not yet be reached

Coaching Tips for Ages and Stages

While designing practices that are age and stage appropriate can be more challenging and time consuming for the coach, the benefit is a learning environment that supports opportunities for holistic development for the participants. Table 2 includes important tips for coaches navigating the world of training children and adolescents and striving to support their holistic development.

Table 2. Coaching Tips to Support Age- and Stage-Focused Development

Development Across Ages and Stages	Coaching Tips
Children are not miniature adults.	<ul style="list-style-type: none">• Training sessions need to include youth-focused process goals (e.g., motor skill improvement), not adult product outcomes (e.g., "Did the ball go 'in'?")• Creating scalable practice opportunities that allow for skill modification and adding in complexity as development occurs (see USA Hockey From a Child's View)
Growth and maturation are not linear; weight and height gains occur in different seasons	<ul style="list-style-type: none">• Changes in movement patterns may occur during periods of growth• Consider monitoring height and weight every season.• The fastest rate of growth increases risk of injury and so needs to be carefully monitored.
There can be significant differences between age in years (chronological age) and age to maturity (biological age); psychological age and social age do not always occur at the same rate.	<ul style="list-style-type: none">• Create practice plans that adjust for various levels of ability.• Consider all developmental aspects before suggesting that young athletes "play up."



References

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Key Take-Home Message for Coaches

Youth sport coaches are perfectly positioned to provide youth developmentally appropriate training at every age and stage to support fitness, flexibility and overall conditioning. Child-centered programming based on each age and stage can lead to successful sports participation for every child at every age and stage.



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