
Kids and Training - *Athletic development based on maturity, not ability*

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Children are not miniature adults. Combining that fact with our social emphasis on competition and winning is a difficult challenge confronting most coaches. Coaches strive for winning programs while delicately trying to avoid swamping their young athletes with “too much, too soon.” So what can coaches do to achieve maximum performance from athletes who aren’t yet emotionally and physically developed?

The key is education. Coaches need to educate themselves and their athletes about growth cycles and then factor that into their training regimen. For example, it’s a known fact that peak growth occurs during puberty. But, did you realize that athletes of the same chronological age could vary by as much as five biological years, especially during adolescence? When comparing two 11-year-old swimmers, one may be biologically 10 years old while the other may be biologically 15. That’s a tremendous difference.

The problem is that they are trained in the same way, even though developmental differences – flexibility, balance, coordination, body composition, motivation, etc. – are intrinsically different. Think back to when you were that age. Remember how there were always a few kids who were bigger and stronger than you, while others were smaller and less developed? There was a reason for that. Performance at puberty is based on rate of maturity – not skill or ability – giving some kids a biological advantage.

As further testament, a study that tracked athletically “outstanding” children in elementary school found that only 25 percent were still outstanding in later years, suggesting that early success does not predict later success.

Such influences as aerobic and anaerobic capacity and muscular strength, power and endurance all change with growth and development. These components should be maximized during “sensitive periods,” a term used to describe when significant growth and progress occurs. This growth during puberty is a result of an abundance of the hormone testosterone in males and estrogen in females. Coaches should optimize aerobic training during this sensitive period, which results from ages 12 to 15 years for females and 17 to 21 for males. It is suggested that pre-pubescent athletes, ages 9 to 12/15, focus on longer distances because of skill development and aerobic capacity development.

It’s been found that high levels of anaerobic exercise results in insignificant improvements in athletes ages 10 to

13 years old. However, aerobic work during this time results in increased performance. It’s recommended that coaches first develop aerobic capacity and then gradually increase anaerobic load.

Now what about strength training? Should young athletes pump iron? Prior to puberty, children undergo neuro-muscular changes, not changes in muscle size. Children will not increase muscle size through strength training. It is only after puberty that muscle growth occurs. Prior to puberty, athletes will not have significant gains in muscle size regardless of the amounts of weight lifted.

Early and late maturation rates need to be assessed when training children. Problems arise in high school when early maturers get frustrated because peers have caught up with them. These kids often quit sports around age 14 due to not experiencing the same success as when younger. Late maturers get frustrated also because of lack of success. They are biologically disadvantaged, and don’t get attention or encouragement due to being deemed inferior. These kids often quit due to lack of success before allowing physical maturity and their skills to develop. Ironically, they have the potential to be better athletes once puberty hits – if only they’d be encouraged to wait that long.

Coaches can play a major role with young athletes by explaining that these differences aren’t their fault and encouraging them to stick with sports. Coaches need to make athletes and parents aware that long-term development is what’s important, not who has the most success at a very young age. One idea is to move early maturers “up” in competitions so they are competing on a more level ground. That way, they’ll get used to experiencing defeat. Ideas to keep late maturers from quitting include: rewarding personal improvement by focusing solely on the athlete without comparison to peers, designing team competitions that emphasize skill development and getting athletes to compare themselves to others in their same maturational age group.

Again, children are not miniature adults. Youth sports involve a complex array of physical, cognitive and physiological factors. Understanding that biological differences at puberty – not skills and abilities – are the driving force behind performance is crucial in training young athletes. Coaches play a critical role in the long-term development of our young athletes. It is their responsibility to supply the necessary arsenal of knowledge to optimally develop our youth.

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