



What is the Maturational Process?

Children develop in sequential and predictable ways from young children into fully-grown adults. Yet, while individuals develop in similar ways, the timing of this maturation process can vary greatly. In fact, at any one chronological age individuals can vary by as much as five years maturationally. This means that with two swimmers who are chronologically 11 years old, one may be 10 and the other 15 biologically. The difference between 10 and 15 years of age is huge, as we all know, yet we often do not recognize these differences in training and competition expectations. A better approach is to consider the maturation process when working with young individuals. Keep in mind that while we are generalizing about early maturers and late maturers and approaching them as two distinct groups, there is a lot of overlap in terms of all areas of development and their athletic performance.

Identifying early maturers and late maturers

One way of trying to identify the kids who are going to be early maturers and late maturers is just by eyeballing them. In childhood, early maturers tend to be taller, heavier, and have more muscle mass than their peers. Alternately, late maturers are generally shorter and very light and lean in childhood. Often, however, the late maturers end up being taller as adults because they are in the childhood growth phase longer.

Another way to identify early maturers and late maturers is to track the athlete's growth. We know that, on average, children grow 2.5 inches a year and gain about 5 lbs. a year until they hit their growth spurt. For girls, this growth spurt occurs roughly around age 12-13 and around age 14-15 for boys. If the growth spurt occurs earlier than this average, you have an early maturer, if it occurs later, you have a late maturer. It is important that young athletes have regular physical check-ups to ensure that growth is on track. Excessive weight gain or loss should be addressed by a physician.

Why is understanding maturation something parents need to know?

In and of itself, being an early maturer or a late maturer is not a concern. However, the potential short-term and long-term ramifications if one ignores maturational differences are of concern.

Early maturers, who hit their growth spurt prior to their same aged peers, tend to have an advantage in sports, especially sports requiring speed, power, and endurance where body mass is helpful. For biological reasons, not because of greater talent or ability, they are often able to outperform their peers. In childhood, they have much early success for which they receive reinforcement and recognition and, therefore, tend to initially stay with the sport.

Into high school we start seeing problems as the early maturers, who are used to experiencing success, get frustrated because now peers are catching up with them. Others may ridicule and tease them because they are not experiencing the same outcome success and assume it is because they are not training hard or not putting forth the effort. Part of the dropout from sport we see around age 14 is due to early maturers leaving the sport out of frustration when they are not experiencing the same success as they did when they were younger. In reality, it's the physical changes that are occurring in their peers that are allowing others to catch up with them. We need to figure out a way to help our early maturers keep early success in perspective.



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With late maturers, we have a different set of issues. The late maturing kids often experience early failure because they are at a biological disadvantage (they are not as physically strong or developed) that affects performance outcomes. In training, even though they may be working as hard, they often can't keep up with their peers, which is a huge source of frustration. This leads to much ridicule by their peer group. These late maturers, who are not demonstrating success relative to their peers, then don't get the coaches' attention, encouragement, or recognition that their early maturing peers are getting.

Unfortunately, in developmental sport programs, we often don't allow late maturers the time to allow their physical maturity catch up and their skills to develop. Instead, these children often leave the sport early because of lack of success and extreme frustration. This seems to hit late maturing boys the hardest because they are at an extreme disadvantage. Ironically, they may have the potential to be better athletes but we have to keep them involved at the younger ages to make sure they continue with their skill development. We need to figure out how to keep late maturers interested and involved in sport despite a lack of early success.

Strategies to deal with early maturers and late maturers

First, we need to keep in mind that early success does not predict later success. This is nicely illustrated in a study looking at growth and development in boys (Medford Boys Growth Study) and its relation to sport abilities. Specifically, coaches were asked to rate kids in terms of their abilities in elementary school and again in junior high. They found that only 25% of the kids that were rated outstanding in elementary school were also rated as outstanding in terms of their abilities in junior high. This suggests that early talent/ability is a poor predictor of future abilities since only one-fourth of the boys that demonstrated ability in elementary school also demonstrated ability in junior high.

Given this, we need to be cautious about focusing attention and energies into only the young athletes who are showing initial talent. The success demonstrated by early maturers is due to a biological advantage and, as we know, biological maturation is genetic. Remember that late maturers, who are at an initial physical disadvantage, don't have control over biology.

Parents and athletes must be aware of some of the factors involved in why some are experiencing much success (as is the case with early maturers) or limited success (late maturers). An awareness of the situation will aid in keeping both success and failure in perspective while maintaining an eye towards individual skill development. Help athletes focus on long-term development rather than performance today.

With early maturers, who have trouble keeping early success in perspective, we may want to think about moving them "up" in competitions so they are competing on a more level playing ground and experiencing some defeat. They can still practice with their peers (so social development is not affected) but compete against others of a similar maturational age.

We need to search for strategies to keep late maturers involved in skill development programs as they are the ones getting left behind. We need to be creative in structuring situations so they can experience success and see improvement. Some examples that have been used include: posting and rewarding personal improvement in training which focuses the athletes on themselves rather than peer comparison; design team competitions that emphasize skill development; find a way to get the athletes to compare themselves to others of the same maturational age.



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Gender plays a role in the influence of the maturation process on performance, dropout and self-esteem. Specifically, we need to pay special attention to early maturing females and late maturing males. An early maturing female develops a woman's body at a young age and may become very self-conscious. Conversely, the late maturing male is ridiculed for being small and also becomes very self-conscious. Parents and coaches need to help these athletes with self-confidence, self-image and self-worth.