



This is an excerpt from [Long-Term Athlete Development](#) by Istvan Balyi, Richard Way & Colin Higgs.

Specialization Defined

Hill (as cited in Hill & Simons, 1989) described specialization as athletes limiting participation to a single sport, which they train for and compete in on a year-round basis. Baker, Cobley, and Fraser-Thomas (2009) used four parameters to define early specialization:

1. Early start age in sport
2. Early involvement in one sport (as opposed to participating in several sports)
3. Early involvement in focused, high-intensity training
4. Early involvement in competitive sport

Balyi, Cardinal, Higgs, Norris, and Way (2005) introduced the notion of early or late specialization sports. Early specialization sports (mostly acrobatic and artistic sports such as diving, figure skating, and gymnastics) are defined as sports in which early sport-specific training (by ages 5 to 7) is necessary for future excellence. In these sports, complex movement and sport skills should be acquired before the onset of the adolescent growth spurt (or peak height velocity, or PHV), which is approximately 12 years of age for females and 14 years of age for males. Because one cannot specialize late in early specialization sports, some of the negative consequences of early specialization are unavoidable, although they are manageable. Late specialization sports are practically all other sports, including team sports, racket sports, combative sports, and gliding sports. Late specialization refers to the idea that early specialization is not warranted, and that specializing early in late specialization sports has its own negative consequences (see the next section).

Côté, Lidor, and Hackfort (2009) argued that early diversification (multisport or multilateral involvement in the LTAD jargon) enhances athlete development, whereas early specialization hinders it. They identified the following seven postulates about youth sport activities:



1. Early diversification (sampling) does not hinder elite participation in sports in which peak performance is reached after maturation.
2. Early diversification is linked to a longer sport career and has positive implications for long-term sport involvement.
3. Early diversification results in participation in a range of contexts that promote positive youth development.
4. A lot of deliberate play during the sampling years promotes intrinsic regulation and builds a solid foundation of intrinsic motivation through involvement in enjoyable activities.
5. A lot of deliberate play during the sampling years establishes a range of motor and cognitive experiences that children can ultimately bring to their principal sports of interest.
6. Around the end of primary school (about age 13), children should have the opportunity either to specialize in their favorite sport or to continue in sport at a recreational level.
7. Late adolescents (around age 16) have developed the physical, cognitive, social, emotional, and motor skills needed for investing their efforts into highly specialized training in one sport.

Negative Consequences of Specializing Too Early

Although focusing on one sport develops the skills, coordination, and sport-specific fitness necessary for doing well in that sport in the short term, it limits or prevents the development of other transferable sport skills (see the chapter 3 opening vignette). Transferable skills allow athletes to participate in a variety of sporting and social situations, which increases the likelihood that they will have a positive and fun experience in sport. Consequently, it is beneficial for young athletes to participate in various sports and to meet and interact with a number of coaches.

Some of the negative consequences of specializing in one sport too early are overuse injuries (DiFiori, 2002) and chronic injuries such as tennis elbow, rotator cuff injuries, stress fractures, and ACL injuries, especially in female athletes (Harber, 2007). Early specialization also contributes to a



one-dimensional self-concept as a result of “a constrained set of life-experiences” (Coakley, 2000, as cited in Hill, 2009, p. 133).

To become positive and productive, athletes need to develop the social and mental skills that allow them to adapt to various situations outside of their sporting community. Young athletes may put too much of their selves into one sport and then feel devastated when they fail. They may become obsessed with winning and grow especially frustrated when they do not win. This can lead to an imbalanced lifestyle as they abandon their social lives, spend all of their time training, and deny themselves the opportunity to build the mental and social skills needed for living a successful life away from the playing field (Coakley, as cited in Hill, 2009).

Specialization in one sport contributes to “the progressive loss of freedom in exchange for increased excellence and precision” (Novak, 1976, as cited in Hill, 2009, p. 108). Athletes face not only demands from themselves and their coaches to win, but also intense pressure from their parents.

Consistent training and specialization in a sport can lead to psychological burnout (Gould, Udry, Tuffey, & Loehr, 1996). Among school, sport, and the basic demands of life, athletes' schedules may allow little time for socializing with friends and other recreational activities. When their schedules become too busy, athletes can feel as though they no longer have any control over their lives. Symptoms such as depression, eating disorders, and chronic fatigue may manifest.

Ironically, the initial intention of creating an exceptional athlete can result in hindered development and increase the likelihood of that athlete dropping out as a result of anxiety from the extreme pressure to win.

Positive Effects of Specialization at the Optimal Time

Athletes who experience a relaxed and fun approach emerge more balanced and well rounded than those who do not. This increases their chances of reaching elite levels in their sports. Youth who try a number of



sports and specialize at older ages reach higher performance levels than those who specialize early. Such athletes are less likely to burn out and do not develop the perfectionist attitudes that often come with early specialization. They develop better movement patterns and decision-making skills because they are involved in a range of activities that require a variety of cognitive and physical functions. Being in various sport situations also keeps them mentally fresh and open-minded. The more sports youth practice at young ages, the greater ease they feel when eventually selecting one sport that suits their mental makeup and body composition. If they choose to specialize, they will know the sport in which they will excel.

Participating in a variety of sports also allows athletes to become more athletically diverse and adaptable. For example, a basketball player may be a good center, but if he spends all of his time training for this specific position and fails to win this position on a new team, he is left with limited skills to apply to other positions. This dramatically decreases the chance that he will be able to get a position on the team. Such an experience can be emotionally rough on youth, especially if they have invested a lot of time in the sport. Young athletes may end up dropping sport permanently and settling for a sedentary lifestyle because it is emotionally easier. However, if young athletes have the chance to try a number of sports and experience various positions within those sports, they are more likely to have a positive experience when they choose to specialize. This, in turn, helps ensure that they remain active for life.

When children are between the ages of 6 and 12, parents are responsible for getting them involved in a variety of sports and activities. Côté (1999) refers to this important period as the sampling years. Sampling various sports and activities gives young athletes the opportunity to develop their fundamental movement skills and experience a variety of environments. After this period of diversity and skill development come the specializing years, when the athlete begins to focus on one or two sport activities.



Baker, Côté, and Abernethy's (2003) research further described the importance of sport sampling in youth. Their findings demonstrated a positive correlation between an increase in sports sampled as a youth and the chances of succeeding and becoming an elite athlete. This is most likely because young athletes who sample sports acquire a broader range of movement and decision-making skills, and this contributes to their success later in life. Baker and colleagues' evidence also showed that to reach excellence and elite levels in a sport, single-sport training is not the vital factor in determining success; developing physical literacy and specializing late is. When sport-specific training begins too early, athletes have less success in their sporting careers. Consequently, late specialization is encouraged.

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