

Current Perspectives On Multi-Sport Participation

By Paul Jurbala, PhD, Sport for Life

What's the best path to the podium? That's the question behind the debate between early specialization and early diversification. Drawing on the example of some well-known champions like Tiger Woods or the Williams sisters, the early specialization camp argues that an early start in the athlete's primary sport is essential for development of high-level skills and tactical abilities. That is, the ability to "read the game." The early diversification (sometimes called "sport sampling" or "multi-sport") camp looks at the high incidence of overuse injury, burnout and dropout among early specializers, calls for an end to early specialization. They cite the many champions who came to their primary sport late, like Steve Nash or Clara Hughes, as better examples of how to reach the top.

Which is correct? What does the latest research say? And if we aren't aiming at the podium but instead at healthy, lifelong participation, does early specialization make any sense at all? Based on a comprehensive review of 139 research publications, this article breaks down the latest evidence to help answer these questions.

Understanding Early Specialization, Early Engagement and The Multi-Sport Approach

Young athletes typically follow 1 of 3 paths: early specialization in a single sport, participation in multiple sports and activities with later specialization, or a hybrid combining an early preferred sport with continued participation in other activities.

Specialization is "intense, year-round training in a single sport with the exclusion of other sports" (Jayanthi et al., 2013). Specialization is normal for senior high-performance athletes, but it's also common in young athletes aspiring to high performance. Early specialization refers to "children who commit exclusively to a sport in the early-to-middle elementary school years," that is, ages 6 to 10 years (Jayanthi et al. 2013).

A multi-sport approach differs from early specialization in that the child participates in multiple sports and physical activities and doesn't spend most of their time in only 1 sport. The number and type of sports differ widely among athletes and aren't consistent across research studies. For example, the "sampling years" in the Developmental Model of Sport Participation include participation in multiple sports and a focus on "deliberate play." Deliberate play is defined as "early developmental physical activities that are intrinsically motivating, provide immediate gratification, and are specifically designed to maximize enjoyment... such as street hockey or backyard soccer" (Cote & Abernethy, 2012).

A third pathway, referred to as the early engagement hypothesis (Ford et al. 2009; Hendry and Hodges 2018), has more recently been identified in athlete

development literature. The early engagement hypothesis is based on early entry into the eventual sport of specialization, combined with participation in other sports and relatively high amounts of deliberate play. It's argued that this approach may: reduce the many risks associated with early specialization, allow development of specific foundational skills and avoid "political and social barriers" that can discourage late entry to the primary sport (Hendry and Hodges 2018, p.82).

Generally, early specialization or early engagement is more common in sports where highly developed motor skills (such as, tennis, golf) or a combination of motor and tactical skills (such as, soccer, hockey) are seen as essential. Early specialization or early engagement also tends to be more common when an early developing ability like flexibility is critical (for example, gymnastics). traditional views must be questioned when there's a possibility that disadvantages outweigh potential benefits. For this, we turn to the research.

What the Evidence Says

Which is the best path to the podium: early specialization, early engagement, or a multi-sport approach? There's much more at play than that. Athlete development is complex. Performance arises from a complex interaction of multiple factors, including genetic, social, and cultural factors. Plus, those factors happen across physiology, psychology, and other traits. The answer can't be reduced to whether the athlete follows a multi-sport approach, specializes early or engages in a main sport early (Gibbons et al. 2003; Gulbin et al. 2010; Collins, MacNamara and McCarthy 2016; DenHartigh et al. 2016).

Does early specialization lead to increased risk of injury? The majority of studies correlate early specialization with a higher likelihood of injury, burnout and dropout from sport (Carder et al., 2020). Simply, the more time an athlete performs a movement, the more likely overuse injury becomes. Starting early means more repetitions. In sports with repetitive motion, such as baseball pitching, professional players who specialized early had a higher probability of significant injury in their career (Wilhelm, Choi and Deitch, 2017). Similarly, NBA players "who were multisport athletes participated in more games, experienced fewer major injuries, and had longer careers than those who participated in a single sport" (Rugg et al. 2018).

Does early specialization lead to burnout and dropout from sport? Burnout is a psychological state accompanied by a reduced sense of accomplishment, physical and emotional exhaustion, and less desire to participate in sport. The American Medical Society for Sports Medicine recommends the multi-sport approach to minimize overuse injuries and related burnout (DiFiori et al., 2014). Burnout can lead to dropout (Fraser-Thomas, Cote and Deakin, 2007), which may be more common for in females (Isoard-Gauthier et al., 2015; Latorre-Román, Pinillos, and Robles, 2018).

Does the multi-sport approach result in athletes gaining transferrable skills? The multi-sport

approach in youth, up to roughly the age of puberty, appears to help young athletes develop a broad base of skills, which may transfer to a later sport of specialization (Arede et al., 2019). Skill transfer may depend on whether the experience was gained in similar sports. In a study of soccer decision-making, skills from other invasion sports seemed to transfer while decision-making skills from volleyball didn't transfer (Causer and Ford, 2014). "Deliberate play" (unstructured, unsupervised play) also seems important. Coutinho et al. (2016) found that highly skilled players had participated in more unstructured, "deliberate play" activities than less-skilled peers.

Do different types of sport require different paths? It's likely, especially in sports where performance is measured in centimetres, grams or seconds (for example, racing sports like swimming, cycling and canoeing, or strength sports including weightlifting). For such sports, Moesch et al. (2011) found adult high performance is most often the result of later specialization (post-puberty) combined with an earlier multi-sport approach.

In sports requiring high degrees of technical skill or tactical ability or a combination of both, including many team sports, adult high performance appears to be enhanced by early engagement in late childhood before puberty (Learn to Train), together with participation in a range of other sports and physical activities. For example, among Scottish youth academy soccer players "less than 10% of the sample specialized only in soccer from childhood and no early specializers progressed to Adult-professional". However, "soccer was the majority sport from early childhood for nearly all players" (Hendry and Hodges, 2018).

In sports which traditionally specialize early, including artistic and acrobatic sports, very careful attention is needed to ensure the young athlete doesn't engage in excessive repetitive movements. Instead, they should also participate in a range of other sports and activities. It's also important to monitor and avoid factors that may lead to burnout.

But what about the all the early specializers who became Junior national or world champions? Were they on the wrong track? Gullich, Macnamara and Hambrick (2021) think so. The title of their paper says it clearly: "What makes a champion? Early multidisciplinary practice, not early specialization, predicts world-class performance." Their analysis of 51 research papers showed that adults who are world-class athletes were involved in more childhood and adolescent "multisport practice, started their main sport later, accumulated less main-sport practice, and initially progressed more slowly than did national-class athletes...that is, senior world-class athletes who began their main sport early and specialized are the exception, not the rule."

Early specialization may contribute to high performance in youth. Gullich, Macnamara and Hambrick's (2021) analysis also found that "higher performing youth athletes started playing their main sport earlier, engaged in more main-sport



Sport for Life

practice but less other-sports practice, and had faster initial progress than did lower performing youth athletes.” So, do we want youth champions or adult champions?

Key Takeaways for Sport Organizations, Coaches, Parents and Guardians

- 1. Early specialization makes no sense if we aren't aiming at the podium but instead at healthy, lifelong participation.** The idea of early specialization is based on the example of a few well-known exceptional champions who specialized very early. If we aren't aiming at the podium, based on the evidence of injury, burnout, and dropout, then early specialization makes no sense at all. The best advice for a pre-puberty athlete is to help them experience a variety of sports and activities, including unstructured play, and allow them to gravitate to a sport of their choice. Pay careful attention to holistic, multi-lateral development, appropriate rest, and discouraging excessive repetitive movements.
- 2. Sport parents, guardians, coaches, and sport organizations should be more aware of the risks of early specialization.** They must resist the temptation to gain a short-term advantage by earlier specialization or by allowing relative age effect (selecting the bigger or faster youth, when that is a temporary effect due to an earlier birth date) to influence athlete selection. In most cases, whether or not the young athlete reaches high performance (for example, Junior National Champion, selection to Junior World Championships), early specialization may shorten that athlete's sport career.
- 3. Youth sport programs for younger children should help develop diverse movement and game skills instead of focusing on only 1 sport.** In other words, whether it's a swim, baseball, soccer or gymnastics program, programs for children in the FUNdamentals stage of Long-Term Development (around 6 to 9 years old) should include a variety of non-specific games and movements. This would help children and reduce pressure on parents and guardians to register them in multiple different sports.
- 4. More research is needed about whether the multi-sport approach results in greater retention and longer participation in sport.** While early specialization may predispose athletes to early injury, burnout and drop out, it doesn't automatically follow that the multi-sport approach will result in long-term retention. There are many other factors at work when deciding to remain in sport or drop out.

It's often said that without participation, there can be no high performance. It's equally true that unless young participants stay in sport (healthy, happy, engaged, and excited), there can be no high performance. The research clearly shows the risks of early specialization and the benefits of multi-sport, multi-activity participation. Our challenge is to make diversification the easy, affordable option for parents, guardians, coaches, and sport organizations,

and to sustain a sport culture that enables each athlete to remain in sport long enough to fulfill their potential and their dreams.

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Paul Jurbala, Ph.D., is a Long-Term Development Advisor with Sport for Life Society as well as Principal of his own consulting business, **communityactive**. Before launching **communityactive** in 2005, he held senior management positions in sport. Since then, he has worked with over 40 national, provincial and community sport and recreation organizations on strategic planning, program evaluation, and athlete and coach development programs. Paul's Ph.D. (Brock University) focussed on how community sport organizations adopt innovation and adapt to change. He has taught in sport management programs at Brock University, York University and Humber College. In his own sport, cycling, Paul is a Master Coach Developer and helps lead Cycling Canada's coach education program.

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