Early sport specialisation, does it lead to long-term problems?

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SPORT SPECIALISATION: FRIEND OR FOE?
Sports participation is increasing in the USA (US population 313 million inhabitants) and in Icelandic (population 320 thousand inhabitants) adolescents, it is estimated that 35–45 million youth 6–18 years of age participate in some form of organised or recreational athletics.1 2 However, sports specialisation including year-round sport-specific training, participation on multiple teams of the same sport and focused participation in a single sport is purported to be increasing in frequency in preadolescent children across the world. There are several factors that contribute to the desire of young athletes to specialise in a single sport including the pursuit of scholarships or professional contracts, being labelled as talented by parents or coaches, retailing industry and media reports.3 A 2006 New York Times article notes “A growing number of coaches, parents, and children believe that the best way to produce superior young athletes is to have them play only one sport from an early age, and to play it virtually year-round.”4 Despite this increase in global sports participation, physical fitness levels of children and adults are declining and more people around the globe are becoming obese and physically inactive.5 The efforts to specialise youth sports underlie the effects of reduced general opportunity for all children to participate in a diverse year-round sports season, and possibly leading to lost development of lifetime sports skills. These lost opportunities for ‘fun’ focused physical activity during youth likely contribute to deficits in current and long-term physical activity and health. Physical inactivity is a major factor in obesity and other comorbidities that are driving up healthcare costs. We hypothesise that sports specialisation in preadolescent children may lead to reduced overall comprehensive motor skill development, increased injury risk and therefore could contribute to reduced lifetime physical activity.

Specialisation in a single sport was perceived to have begun in Eastern Europe with activities such as gymnastics, swimming, diving and figure skating.3 Most Olympic sports have selection processes that attempt to identify future champions and initiate specialised training-often before the prospect finishes elementary school.5 The relative success of these programmes has led to early talent identification and developmental programmes focusing on a single sport, globally. The glamour of a professional contract is too good to pass up and more athletes are turning professional at a younger age. Unfortunately, most athletes and their parents fail to realise that only 0.2–0.5% of USA high school athletes ever make it to the professional level.6

RISKS OF SPORT SPECIALISATION
Sports specialisation in youth may lead to reduced motor skill development. This occurs as young athletes focus on the motor skills needed for their sport but ignore the motor skills developed through a diversified participation programme. Multiple comparisons revealed that boys aged 10–12 years, who spent many hours in various sports, performed better on standing broad jump and gross motor coordination.7 As young athletes continue to progress in their level of play their opportunities for participation in various sports continue to decline. Is it possible that a cycle develops that hinders young athletes overall comprehensive motor skill development and predisposes them to future injury?

Physical fitness levels in youth are declining and the combination of increased exposure and decreased preparedness for sports participation has led to increasing rates of sports-related injuries.8 Limited data suggest that there are tangible risks due to sports specialisation for young athletes; including cardiac, musculoskeletal, nutrition, sexual matur-ati on and burnout.5 The musculoskeletal risks are predominantly overuse injuries as up to 50% of all injuries seen in paediatric sports medicine are related to overuse.9 These sports-related injuries attributed to participation in a single sport may provide a deterrence for future physical activity.

Can the combined effects of sports specialisation and injury lead to sports drop out, reduced development of lifetime sport skills and reduced lifetime sports and fitness? Specialisation in a single sport leads to success for few and physical inactivity for many. The injuries that young athletes get may deter them from participating in other forms of physical activity, as they get older. Another issue with sports specialisation is Burnout Syndrome, which is associated with changes in a young athlete’s cognitive and mood profile, and can be a deterrent. The American Academy of Paediatrics recommends that “young athletes should participate in sports at a level consistent with their abilities and interests and pushing children beyond these limits is discouraged as is specialisation in a single sport before adolescence.”10 We suggest that the significant risks of sports specialisation noted above may contribute to physical inactivity across the lifespan. If true, this may represent an entry point to mitigating the increasingly alarming rates of physical inactivity.

BENEFITS OF DIVERSE SPORTS PARTICIPATION
The National Association for Sport and Physical Education Guidelines for Participation in Youth Sport Programmes suggested that delayed sports specialisation provides enhanced opportunities for youth development.10 Beyond the physical development benefits gained from participation in a variety of sports psychological and social development can be enhanced as well. For example, a wide range of sports activities during youth will promote diverse relationships and experience in children and adolescents. As adolescents grow into young adults, their multiple sport background can expand their adult physical activity options and foster an intrinsic interest in lifelong sports participation. Beyond the psychological benefits, youth who participate in multiple sports can gain an expanded interest and identify from their diverse experiences and may be less likely to be drawn in to a ‘specific sport culture’ that is focused more on winning than overall child development.10 A variety of sports are needed for the young athlete to develop proper motor skills. Diverse sports participation along with utilisation of an integrative neuromuscular training regimen to support motor skill deficit reduction may help reduce the likelihood of sports-related injuries in young athletes.11 The benefits of a comprehensive programme would include preparatory

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conditioning, enhanced sport performance, reduced injury and reduced burnout. Cumulatively, it is not surprising that the most elite athletes are most commonly those who specialised in sports later in life.12

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