The Impact of Sport Related Physical Activity on Child Development

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Introduction

The body and brain develop and change from the time of conception to death. A variety of factors can influence how these developments occur, especially during critical development periods in infancy and childhood. Exposure to toxins, medications, experiences, family dynamics, socio-economic status, and many other factors influence a child's development. Some of these factors are not so easy to control. If parents tend to a child's needs, if the child is neglected, if there is fighting in the home, and sibling dynamics are some aspects of the family that can influence development.

The family’s socio-economic status can have a great deal of influence on how children grow up. If a family has a low socio-economic status, the child (or children) is less likely to have access to different opportunities growing up. Parents need to focus resources on keeping a roof over everyone’s head and food in the fridge. When families have a higher socio-economic status, more resources are often available. With more resources, children can likely participate in more activities and experiences. These activities or experiences could be different learning opportunities, travel locations, sports, and more. A child may even be able to participate in various sports throughout the year and lifespan, which could aid in both short- and long-term development.

However, the impact of sports and other related physical activities does more than it may seem at the surface level. A great deal of research has been conducted regarding the relationship between sports-related physical activity and child development. Physical, mental, and emotional well-being have long been promoted as important for youth, but the why should be explained more readily to increase engagement from parents and children for such activities. Children in higher socioeconomic households may have greater access to different sports options and likely have higher chances of improved development. If a child is limited in extracurricular activities for any reason, participation in school-offered physical activity should be maximized to promote healthy development. Child involvement in sport-related physical activity impacts development from the body to the brain and everything in between.
In the early Canadian days, children were moving a lot of the time. This could have looked like working on the family farm, walking to school, or playing with friends. While some children still work on family farms, with the advancement of technology, the work is nowhere near as rigorous as it once was. Walking to school in modern times is also not as common as it used to be. Parents drive kids to school, or a bus picks them up and drops them off. For those who still walk to school, the walk is rarely further than a few blocks and is often accompanied by an older participant. However, safety concerns may play a role in reducing children's walking to school, especially if they are walking alone. Even playing with friends is not what it used to be. Children used to go to playgrounds roam their neighbourhoods, ride bikes, and so much more. Now, neighbourhoods and playgrounds seem quiet, and it looks as if many children have traded these physical activities for more passive options. Video games, phones, and tablets all present a modern barrier to getting children involved in physical activities. This steady decline in physical activity among children is a huge concern when factoring in how this sedentary lifestyle may impact their development. Even the attitude towards sports seems to have changed with time. There appears to be less emphasis on skill development and having fun, with an increased focus on winning and being the best.

Physical activity is enough of a concern that the Government felt the need to be involved and set guidelines for what this should look like at various ages. In Canada, physical activity guidelines for children did not come around until 2002 (Janssen and LeBlanc, 2010). A revision of these guidelines did not take place until 2006 (Tremblay et al. 2012). But even now, those guidelines are for children aged five to eleven and twelve to seventeen years of age. There isn’t mention in the government guidelines for children younger than five years; they appear to have forgotten that children four years and under are also undergoing rapid development that could be fostered through physical activity. The Canadian Government (2019) suggests that the health benefits of physical activity include opportunities for socializing, improved fitness, increased concentration, better academic scores, stronger heart/bones/muscles, healthy growth and development, improved self-esteem, better posture and balance, and lowered stress. Healthy habits formed at young ages are the ones that follow a person as they progress through the life stages. Starting these healthy habits young is crucial for sustained development. The most recent guidelines set by the Canadian Government (2019) suggest an hour of moderate to vigorous physical activity per day for children ages five to seventeen. While an hour may seem like a decent chunk of time, when looking at a child's average school day, it really isn’t much time. Just looking at a full school day, a child gets a morning break, lunch, and an afternoon break; the time of each varies by the school, and there is no requirement for the children to move during these breaks. Gym class (or physical fitness time) should encourage children to get up and move around to engage in the activities that are part of their school’s curriculum. Physical fitness class is an opportunity for engagement with various activities that a child may otherwise not have access to. Kurc and Leatherdale (2009) noted that school-based activity participation declined as grade levels increased and suggested that schools look into options for reducing barriers to programs by doing things such as improving funding and increasing access through activity variety and time.
accessibility. However, programming through the school is not required and may do little to sway children’s participation if they don’t like being at school in the first place. There is an understanding that this suggested daily hour of movement doesn’t have to happen all at once; rather, it can accumulate in five-to-ten-minute increments over the course of the day (Janssen and LeBlanc, 2010). Janssen and LeBlanc (2010) also concluded that it is unknown if one hour per day or different amounts each day to accumulate the seven hours per week of physical activity would have varying health benefits for the child.

A large body of research supports the health benefits of physical activity, as suggested by the Canadian Government in 2019. Physical health may seem easy to link with youth physical development. However, it is important to consider how much activity a child should get and what types of activity a child should engage in to focus on physical health. Janssen and LeBlanc (2010) suggested that aerobic activities should make up the bulk of physical activity, but bone and muscle strengthening activities should be incorporated at least three days per week. Janssen and LeBlanc (2010) also suggested that vigorous activities should be incorporated when possible, including activities that strengthen muscles and bones. In many sports settings, there is some component of strength training to ensure a child can hold their own against others, but this comes in varying degrees depending on the sport. Activity intensity should also be considered; vigorous-intensity activity is believed to provide benefits beyond moderate-intensity activities, with little research supporting the impact of low-intensity activities (Janssen and LeBlanc, 2010).

If children do not move, they are at increased health risks for things that should normally only impact adults, such as obesity or high blood pressure. Even in the early years, from birth to four years old, obesity levels are high (Tremblay et al., 2012). Children should get enough movement and eat a balanced diet to prevent childhood obesity. Aerobic-based activities that stress the cardiovascular system have the greatest health benefit, other than for bone health, in which case high-impact weight bearing activities are required (Janssen and LeBlanc, 2010).

Regarding social development, children involved in group physical activity have greater opportunities for developing many skills. Social development is the gradual acquisition of skills, attitudes, relationships, and behaviours that enable an individual to interact with others and to function as a member of society (American Psychological Association, 2018). Sports participation is an important physical activity for children and youth (Cairney et al., 2018). A child participating in multiple sports may have an advantage over their peers who only engage in one sport. For example, a child plays hockey in the winter and soccer in the summer; both are team activities but require that child to interact differently and improve different skills. Communication and skill sets needed for the two sports overlap, but each has unique needs. Being a fast skater isn’t going to help if the person is a slow runner. This would require the child to pay better attention to their surroundings to ensure they know what is happening on the field and use other skills to compensate for the lack of running speed. On the ice, a child may be a fast skater but a puck hog, and the child is not using their skills to know where their teammates are. In these two sports, children can transfer their base skills to better themselves and become better teammates. Kurc and Leatherdale (2009) found “that a lack of social supports and participation in school- and community-based sports are associated with the amount of physical activity youth engage in.” If children are involved in sports, they are likely to have the support of their coaches and teammates. It may also help if the youth attend school with some people they play sports with, as those friendships can flourish.
even further. Though sports can be tricky, when crossing into specializing or higher-tiered sports groups, pressure can mount, and it is no longer seen as a positive aid to development. While the level of sports can influence the impact on development, Burner et al. (2021) found that “sport-based physical youth development interventions can be effective in improving positive youth development outcomes.”

Behavioural development ties in closely with social development. Children learn behaviours from those around them; this includes parents, classmates, teammates, teachers, coaches, and more. If children are immersed in a variety of different environments, they learn what is behaviourally acceptable in each. How a child talks to and interacts with their friends may look significantly different than how they interact with their parents and teachers. When skill development and mastery are the focus of the teammates, more enjoyment and pro-social behaviours are reported in children (Cairney et al. 2018). When a parent emphasizes skill development, there is a strong link to positive outcomes for the child as opposed to a focus on winning, which is linked to negative outcomes for the child (Cairney et al., 2018). The coach also has an important role to play in youth development related to sports. A positive relationship between the coach and athletes is related to developmental outcomes such as higher perceived competence, pro-social norms, and lower stress (Cairney et al., 2018). Coaches are in a position to build up children and need to use their position carefully. Therefore, it is not just the relationship between the child and others but the quality of the relationship.

Behavioural disturbances tend to emerge in childhood and persist into adulthood (Misztel et al., 2023). Given the early onset of behavioural disturbances, early intervention should be considered. But not all sports are appropriate for all children. Sport type and frequency of participation are also related to problematic behaviours (Misztel et al., 2023). Contact, team, and individual sport-related physical activities have pros and cons. Children who participate in team sports are likely to have lower levels of anxiety, withdrawn/depressive symptoms, social problems, and attention problems compared to those participating in individual sports (Misztel et al., 2023). Individual sports rarely ask the child to look beyond themselves to be successful, whereas team sports require the child to interact effectively with their peers. Starting children in team sports at younger ages will allow those skills to grow steadily and reduce the risk of being bullied if they join sports later in adolescence. A higher frequency of physical activity is associated with better behavioural control (Carson et al. 2016).

Cognitive development is another area that can be linked with aspects of physical activity in youth. The American Psychological Association (2018) defines cognitive development as “the growth and maturation of thinking processes of all kinds, including perceiving, remembering, concept formation, problem-solving, imagining, and reasoning.” Children involved in sport-related physical activity have the opportunity to participate in experiences that may help them build on each of these areas. “Physical activity is increasingly being recognized as an important determinant of cognitive and neural functioning” (Carson et al., 2016). Just as movement is important for the body, it is also important for the brain. Physical activity stimulates the brain by promoting neurogenesis, increasing the number and function of synapses, and the secretion of neuronal growth factors (Misztel et al., 2023). A child involved in team sports must think about what is currently happening in the game with their teammates, themselves, the object of the game, what needs to happen next and much more. The child must also call on skills previously learnt in
practice to best interact with everything happening in the game. While considering all these different factors involved in gameplay and practice, a child is working on their cognitive development. Carson et al. (2016) concluded that childhood represents a period when life-long habits for physical activity can be formed; therefore, regular physical activity should be promoted to optimize life-long cognitive health.

More physical activity is linked with greater health benefits; however, even modest amounts of physical activity can have tremendous health benefits in high-risk children (Janssen and LeBlanc, 2010).

**Conclusion**

A child’s participation can influence brain development to body development and everything in between with sports-related physical activity. Most children have the energy to move most of the day, but they aren’t given the chance to capitalize on that energy. Instead of having a child bulldoze through the classroom or the home, utilizing sports can burn energy and promote healthy development at the same time. Team sports specifically require a child to look outside of themselves and the other members of their home to develop the skills needed to thrive in that environment. Team sports can be hard to break into if a child joins at a later age when friendships have already been established between other team members. Early involvement in group-based activities, not just sports, may help a child navigate joining sports later in life. Further, participation in various physical activities throughout the year will help a child foster different skills and apply those skills in multiple settings, even outside the sports realm.

While the general consensus seems to be that a minimum hour per day of moderate to vigorous physical activity is enough for basic health benefits, it doesn’t seem like enough. More research is needed into the health benefits of seven hours of physical activity in varying amounts throughout the week. Though with recess, gym class, and sports involvement, it seems that most children should be able to obtain that minimum recommended amount of seven hours of physical activity per week. Sports tend to involve practices and games, often at least an hour each. This does not include whether a child needs to be at games early to warm up or get some practice before start time. When getting into higher-level club sports, practices may be longer than an hour and happen multiple times per week. These higher-level activities also seem to put more pressure on winning, which is suggested to negatively impact a child’s development. It is possible that the increased frequency and intensity that could benefit development may be hindered by the pressure associated with that activity. This could be an area for further research in the future.
Reference List


