

# ACTIVE PLAY, PHYSICAL ACTIVITY AND FUNDAMENTAL MOVEMENT SKILLS

Literature Review- Summary

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**Context:** This brief literature review provides the background literature to the evaluation of Inspiring Scotland's Active Play Programme. The evaluation has the following research question: does the implementation of an active play programme improve physical activity levels and fundamental movement skills competency in children?

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**Inspiring**  
Scotland

**go2play**  
active play

## **BACKGROUND: INSPIRING SCOTLAND AND ACTIVE PLAY**

Inspiring Scotland is a highly engaged venture philanthropy organisation designed and developed to transform Scotland's charities and change lives. Its aims are to tackle social issues in a way that brings greater cohesion and, through this, higher impact. In partnership with the Scottish Government, Inspiring Scotland has invested in play through their Go2Play fund since 2010, creating a track record in successfully supporting the development and expansion of free play in disadvantaged communities across Scotland. They have helped develop the play sector and create greater play opportunities in Scotland's most deprived communities. In 2014 Go2Play delivered an active play pilot with one venture based in east end of Glasgow. In 2015, the Go2Play fund invested in Play Ranger activities, Family Support for Play and further Active Play. In August 2015, Inspiring Scotland began a collaboration with the University of Strathclyde to help evaluate their active play investment, which are funded by the Scottish Government's Children and Families Directorate through the Go2Play fund. The aim of this evaluation is to determine if the implementation of an active play programme improves physical activity levels and fundamental movement skills in children.

Increasing physical activity levels and improving physical literacy (linked to fundamental movement skills) has been recognised within the Scottish Government's four policy areas: health, sport, education and, children and young people. The Active Scotland (2016) Outcomes Framework details Scotland's ambitions for sport and physical activity, with direct reference to increasing physical activity and developing, 'physical confidence and competence from the earliest age'. Active play may have the potential to achieve the aforementioned outcomes, therefore the primary aims of this brief literature review will be to examine evidence on the role of active play in increasing physical activity levels and fundamental movement skills. Secondary aims are to highlight how active play might lead to, or maintain, sports participation; identify the potential for active play to improve academic attainment and finally, the facilitators and barriers of active play.

## GLOSSARY

1. **Physical Activity (PA):** “any bodily movement produced by skeletal muscles that results in energy expenditure” (Caspersen, Powell & Christenson, 1985, p. 126). Examples include; sports participation, active transport and physical education among others.
2. **Moderate to Vigorous Physical Activity (MVPA):** MVPA is often described in lay terms as being accompanied by an increase in breathing, heart rate and body temperature and vigorous PA marks a rapid increase in heart rate and heavy breathing ([Department of Health, 2011](#)). The more technical definition of MVPA is PA with an energy cost of >2.9 but <6.0 times resting energy expenditure.
3. **Physical Activity Guidelines ([Department of Health, 2011](#)):**
  - a. Pre-school aged children: Children who cannot walk should be encouraged to be physically active through floor and water based activities. If they are able to walk, they should be physically active for three hours across the whole day at any intensity.
  - b. School aged children (5-18 years): Should participate in at least sixty minutes of MVPA per day. Activities which strengthen muscle and bones should be included at least three times a week. Lastly, all children should minimise amount of time spent being sedentary.
4. **Domains of PA:** Activities an individual can participate in, which contributes to their overall PA, examples pertaining to children are; physical education, active transportation, active play and sport.
5. **Active Healthy Kids Report Card:** First developed in Canada, it has been replicated in fourteen other countries and uses a grading system to report the performance of a country’s child health behaviours. It is a useful resource for identifying surveillance data on PA and health in children and adolescents. The first [Active Healthy Kids Scotland Report Card](#) was published in 2013
6. **Physical Literacy:** It is not just about the physical movement, it is the child’s ability to move with competence, motivation and confidence in a variety of sports and activities which develop them as a person (Whitehead, 2001).

- 7. Fundamental Movement Skills (FMS):** A set of skills which children should be competent in, such as; throwing catching, running and jumping (Lubans et al., 2010). Fundamental movement skills are usually characterised by object control and locomotor skills. FMS are somewhat related to physical literacy as they encourage children to move with competence. Unlike Physical Literacy, FMS does not develop motivation and confidence to be physically active.
- 8. Free Play:** Behaviour that is freely chosen, personally directed and intrinsically motivated (Scottish Government, 2013).
- 9. Play:** Similar to free play, play are activities which are freely chosen, personally directed, intrinsically motivated, spontaneous and enjoyable (Brockman, et al., 2010). Play typically involves minimal physical movement, examples include; playing board games or drawing (British Heart Foundation, 2015).
- 10. Active Play:** Encompasses components of traditional play but extends to unstructured PA which takes place outdoors in a child's free time (Veitch, et al., 2007). Active play requires the use of large muscle groups in activities such as running, catching or jumping which increase the heart rate to MVPA levels (British Heart Foundation, 2015).

## SUMMARY

The recent HBSC (2015) highlighted that PA levels in Scottish children are low, in fact, only 30% and 21% of 11-year-old boys and girls reached the recommended guidelines of 60 minutes of MVPA per day. Regular PA is associated with improved; blood cholesterol, blood pressure, weight management, bone density and mental wellbeing (Janssen and LeBlanc, 2010). Furthermore, the more active you are as a child, the more likely this behaviour will continue into adulthood (Hallal et al., 2006).

One way of increasing children's PA levels is through active play, defined as "unstructured physical activity which takes place outdoors in a child in a child's free time" (Veitch et al., 2007). Unlike sports participation and active transport, children can participate in active play for prolonged periods (Janssen, 2014). Both active play and outdoor play may lead to increase habitual PA levels and MVPA levels in children (Brockman et al., 2010; Gray et al., 2015). Brazendale et al. (2014) presented data which highlighted that an hour of active play generates more MVPA than commonly played sports and activities. Furthermore, Jones et al. (2011), highlighted that improvements in FMS could be gained through free play. Improving FMS is vital as FMS are poor in modern children (Van Beurden et al., 2002; Hardy et al., 2012).

FMS underpins physical literacy, which has been described as the foundation for participation and excellence in both PA and sport (Canadian Sport for Life, 2014). Those who are physically literate are more likely to be active for life as it develops a child's confidence, ability and desire to be physically active (The Aspen Institute, 2015). The Aspen Institute (2015) suggested that free play is a fun, less-structured way of developing physical literacy and instilling intrinsic motivation to be active. Therefore, it appears that active play could play a key role in developing physical literacy and a life of PA and sport.

Fun and choice are two components central to active play, as these are two major reasons why children participate in sport and PA (The Aspen Institute, 2015). Despite fun being a priority for children's PA participation, the absence of fun is often cited as the main reason for PA disengagement (Visek et al., 2015). Visek et al. (2015) highlighted that the benefits from participating in PA can only be gained through regular participation, which is achieved through fun experiences for children. Active play can be a fun activity which is

inclusive and instils intrinsic motivation to give children positive PA experiences before progressing onto sport (The Aspen Institute, 2015).

Active play has wider benefits beyond improving health outcomes, it can improve academic attainment. Barker et al. (2014) found that children who participated in less structured PA had improved mathematics, language, vocabulary, literacy, reading and science. Finally, Becker et al. (2014) presented findings which suggested that pre-school children with higher levels of active outdoor play had improved performance in reading and mathematics.

To conclude, FMS are poor and PA levels are low in children. Active play can be a good way of increasing activity levels, improving FMS and physical literacy, and improving academic attainment. An active play intervention which is, in part facilitated by adults but stays true to the nature of active play by creating a fun, inclusive environment where children can make their own decisions is needed. This may increase PA levels in children and improve FMS, and ultimately lead to a happier and healthier childhood.

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