

PHYSICAL ACTIVITY

Physical Activity in Early Childhood: Topic Commentary

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Introduction

The six contributions which make up the topic of physical activity in early childhood provide critical summaries of the recent research evidence in this area from subject specialists.¹⁻⁶

Physical activity is important to many aspects of child health and development, and increasing levels of physical activity would have many benefits, both in the short term (for the child) and the longer term (when the child becomes an adult).⁷ Traditionally, early childhood has been seen as a period characterized by high levels of physical activity: young children have been regarded as naturally physically active, and have been described in textbooks as “supercharged dynamos.” Parents and health and educational professionals who work with young children tend to perceive that their levels of physical activity are very high, and parent reports usually overestimate levels of childhood physical activity. The recent research evidence gives cause for concern that levels of physical activity in early childhood are typically much less than optimal. The contributions in this chapter also reflect increasing evidence in the scientific literature that sedentary behaviour, particularly screen time/electronic media use, starts early in life and exceeds recommended levels.

For modern children – in the Western world, at least – it is clear that the “digital childhood” begins early, and concerns over levels of physical activity and sedentary behaviour (which may be independent of physical activity i.e. a child could be sufficiently active but also very sedentary) form the background to this chapter.

Research and Conclusions

Cardon and colleagues¹ summarize the research evidence on physical activity and sedentary behaviour in infants and toddlers. All authors contributing to this topic provide a list of research gaps, but these are greatest for infants and toddlers. Cardon and colleagues¹ note the potential for objective methods such as *accelerometers*

to provide the kind of insights into physical activity in infants and toddlers that they have provided for pre-school children over the past decade. It is not clear precisely when or how unhealthy levels of physical activity and sedentary behaviour habits are established, but the evidence synthesized by Cardon and colleagues¹ suggests that they may become established well before the preschool period.

Cliff and Janssen² summarize the evidence-obtained using objective measurement methods such as researcher direct observation and *accelerometry* on usual levels of physical activity among young children. Most of the evidence is from children in the preschool age range (3-5 year olds), and the authors note that much of it is difficult to interpret. Differences in methods used between the various studies have produced marked differences in apparent levels of physical activity. Nonetheless, on the whole the evidence reviewed by Cliff and Janssen² suggests that usual levels of physical activity are typically lower than those being recommended in recent evidence-based guidelines.³

Jones and Okely³ review recent recommendations on levels of physical activity in early childhood. While early life physical activity recommendations have been available for some time, it is only recently that enough evidence has accumulated to allow these to become evidence-based, derived from a rigorous process of systematic review and formal critical appraisal of the literature.³ For toddlers and pre-schoolers, three hours per day of physical activity is recommended by the recent Australian Department of Health and Ageing guidelines; these guidelines also recommend that age-appropriate physically active play be encouraged from infancy.³

Okely and Jones⁴ review recent recommendations on levels of sedentary behaviour in early childhood, noting that most of the literature is on screen-time. Screen exposure risks a wide range of harms for child health and development, and there is now sufficient evidence for evidence-based recommendations to restrict screen time from infancy to the preschool period.⁴ It is of particular concern that typical levels of exposure to screen-time are typically much higher than recommended, even in infants and toddlers.^{1,4}

The final two contributions in the chapter provide hope that interventions to promote physical activity in early childhood are worthwhile. Hinkley and Salmon⁵ review the evidence on the factors which influence levels of physical activity in early childhood, and most of the evidence is from 3-5 year olds. Identifying modifiable factors (e.g., parenting habits, environmental factors such as the design of childcare facilities) should help inform future interventions. Evidence on non-modifiable factors (e.g., age or gender) might help when planning how to 'target' interventions. Hinkley and Salmon⁵ demonstrate the importance of empirical research evidence in this area, because a number of the research findings to date have been counter-intuitive. Trost⁶ reviews the evidence on interventions aimed at increasing overall levels of physical activity in early childhood, or at increasing levels of physical activity in childcare. The evidence base is limited, but increased physical activity can produce beneficial changes in body fatness of children. The interventions to date can be regarded as promising, and 'best bets' in interventions have been identified. It is clear that future interventions have a useful foundation to build on.

Conclusion

In summary, the topic provides a critical summary of current scientific evidence on physical activity and sedentary behaviour in early childhood. It highlights concerns that levels of usual physical activity and sedentary behaviour in young children are inconsistent with optimal health and development, identifies a wide

range of research priorities, and provides a number of useful pointers to parents, health and education professionals and policymakers.

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