1. Introduction

1.1 The benefits of physical activity for children

Children participating in a variety of physical activities gain valuable experience and can learn skills such as running, throwing, jumping, catching and kicking. Active play and informal games, as well as organised sport, provide opportunities to develop these skills, help to build their confidence and give them more options to take part in a wide range of activities as they get older.

The Australian Department of Health and Ageing recommends that young people should participate in at least 60 minutes of moderate to vigorous physical activity every day. Moderate activities include a brisk walk, a bike ride or any sort of active play. More vigorous activities will make children ‘huff and puff’ and include football, netball, ballet, running and swimming.

Physical activity is associated with a wide range of benefits from infancy to old age. Health benefits at a young age include favourable skeletal development, improved physical and psychological wellbeing, and an increased likelihood of physical activity later in adulthood.

Students who are well-nourished and physically active are better able to reach their academic potential and exhibit positive behaviours in the classroom.

As put by Active Living Research (a research program administered by University of California, San Diego) in its Active Education Fall 2007 Research Brief:

> The available evidence shows that children who are physically active and fit tend to perform better in the classroom, and that daily physical education does not adversely affect academic performance. Schools can provide outstanding learning environments while improving children’s health through physical education.

Exhibit 1: Case study – benefits of physical activity

We had a child arrive in Year One at school and he was continually in trouble. His parents were called to the school several times because he was aggressive in the playground and causing problems in class. He then became very interested in sport.

This interest led to his eager participation in our school sport program and he also began playing sport outside school. By the time he had reached Year Five (2010) he had changed completely from the child he was in Year One. He was representing the school in every sport we played, achieving well academically and, due to his outstanding attitude and behaviour in class and the playground, was elected as one of our school captains for 2011.

Perhaps the biggest indicator of the maturity and sportsmanship that being involved in sport has taught was an event at the school a few weeks ago. Year Six were playing a game of continuous cricket. We have a boy with special needs in Year Six who came to bat. He hit the ball straight to our star sportsman and captain who held the ball and allowed our special needs student to achieve in the game and make a run. Once the child had made the run he threw the ball back.

Source: Audit Office from school visits 2011.

According to the NSW Board of Studies’ Personal Development, Health and Physical Education (PDHPE) syllabus: ‘School programs at all levels have a responsibility to encourage the physical growth and development of all students, support the acquisition of movement skills and nurture positive attitudes towards physical activity’. Further, the Board says schools should provide ‘regular and frequent opportunities for students to acquire and apply movement skills, enhance their creativity and aesthetic awareness and develop positive attitudes towards regular physical activity.’
1.2 Physical activity and childhood obesity

One of the key mechanisms for managing a child’s body weight is physical activity. Lower physical activity levels are associated with a higher prevalence of obesity in children. A review of international studies conducted in this area identified a significant association between higher levels of physical activity and reduced adolescent body weight.

Since 1985 the proportion of Australian children who are overweight has doubled and who are obese has increased fourfold. The concern with childhood obesity arises from its association with adverse psychological and social outcomes, as well as health problems in the short and long term. Excess weight gain increases the likelihood of developing chronic diseases including type-2 diabetes, cardiovascular disease, and fatty liver disease. More importantly, childhood overweight and obesity tracks into adulthood.

In New South Wales, the proportion of young people (5–16 years) who are overweight or obese is currently around 23 per cent. As the graph below illustrates, rates have increased rapidly between 1985 and 2004 although they now appear to have stabilised.

Exhibit 2: Prevalence of combined overweight and obesity among boys and girls for the 1985, 1997, 2004 and 2010 NSW data sets (%) (unweighted data)

Source: NSW Department of Health’s 2010 Schools Physical Activity and Nutrition Survey (page 3).

There is likely to be a significant growth in costs to Government and society more generally if we do not reduce childhood obesity. The Productivity Commission staff working paper ‘Childhood Obesity: An Economic Perspective’ 2010 refers to estimates from Access Economics on the cost of obesity in Australia. The financial costs of obesity were estimated to be around $8 billion in 2008, and included:

- health system costs (such as hospital and nursing home costs, GP and special services, and pharmaceuticals) ($2.0b)
- productivity losses ($3.6b)
- carer costs ($1.9b)
- other indirect costs (such as aids, modifications and travel) ($776m).

The NSW Government recognises the risks of increased obesity. A State Plan target is to reduce overweight and obesity rates of young people (5–16 years) to 21 per cent by 2015.
1.3 Physical activity levels of primary age children

The 2010 Schools Physical Activity and Nutrition Survey (SPANS) prepared by the NSW Department of Health estimated that less than half of Kindergarten and Year Two and Four students in New South Wales schools (government, Catholic and independent) met the Australian Physical Activity Guideline for young people of at least 60 minutes of moderate to vigorous physical activity every day.

Between 2004 and 2010 there was a significant decline in students’ physical activity, during both summer and winter school terms.

Exhibit 3: Prevalence of achieving at least 60 minutes of moderate to vigorous physical activity every day during summer and winter school terms among Year Six students in 2004 and 2010 (%).

Source: NSW Department of Health’s 2010 Schools Physical Activity and Nutrition Survey (SPANS) (page 4).

SPANS 2010 also found that only around 63 per cent of Year Four students and 73 per cent of Year Six students had satisfactory aerobic fitness based on a 20mSRT or ‘beep’ test. This requires students to run a 20 metre distance at progressively faster speeds. Low aerobic fitness increases the risk of cardiovascular disease and other chronic diseases. Between 2004 and 2010 there was a moderate increase in the cardio respiratory fitness of boys but there were signs of a decline in the fitness of girls.

1.4 Children and fundamental movement skills

Fundamental movement skills (FMS) such as running, throwing and jumping are necessary for a variety of activities and exercises. FMS proficiency is associated with increased physical activity in young people, and has a positive association with aerobic fitness and lower body weight. This suggests that developing proficiency in movement skills may have important health implications for young people.

A large proportion of young people, however, do not attain proficiency in fundamental movement skills during their primary school years. This may make it difficult for them to participate in the full range of physical activities both in childhood and throughout their lives.

According to the NSW Department of Health’s 2010 Schools Physical Activity and Nutrition Survey, it takes around ten hours instruction for most children to master one fundamental movement skill (FMS). By Year Four at least 80 per cent of children should have mastery of key fundamental movement skills. In New South Wales, the proportion of Year Four students with a mastery of fundamental movement skills is less than 40 per cent as the graph on the following page illustrates.
INTRODUCTION

SPANS 2010 assessed Year 4 students for seven fundamental movement skills using checklists developed by DEC.

Exhibit 4: Percentage of Year Four students who had mastered a FMS in 2010

Mastery of fundamental movement skills is low amongst Year Four students

Source: NSW Department of Health’s 2010 Schools Physical Activity Survey (page 170).

1.5 Importance of physical activity in primary school

Whilst parents have the major role in ensuring their children get enough physical activity, schools are an important venue for physical activity, including organised sport. DEC has 1,630 primary schools and 67 central schools delivering education services to more than 430,000 primary students. Approximately 125,000 of these students are from non-English speaking backgrounds and 26,000 are Aboriginal. The DEC employs approximately 27,000 primary teachers.

Research indicates that schools can make a difference to children’s physical activity participation and fitness. Primary school students are at an optimal age for motor skill learning and developing physical activity habits. A review of 26 research studies exploring interventions to increase physical activity in the school setting identified school programs that have significantly increased physical activity duration, increased oxygen uptake (as a measure of fitness) and reduced blood cholesterol.

For the purposes of this report, physical activities include rhythmic, outdoor, fitness and recreational activities, and games and sports that are performed individually and in groups.

Physical Development, Health and Physical Education (PDHPE) is a mandatory area of the primary school curriculum which provides opportunities for physical activity, as well as opportunities to learn about physical activity and active lifestyles.

DEC advises it is a key stakeholder in the ‘NSW Government Plan for Preventing Overweight and Obesity in Children, Young people and their Families’ and, to this end, leads school-based initiatives that take a whole-school approach to physical activity.