



# PHYSICAL LITERACY: DO OUR KIDS HAVE ALL THE TOOLS?



ACTIVE HEALTHY KIDS  
AUSTRALIA

The University of South Australia is the Lead Research University for the Report Card initiative and the Administering Organisation of Active Healthy Kids Australia.



## University of South Australia

The National Heart Foundation of Australia is the endorsing partner of Active Healthy Kids Australia, assisting in the dissemination and communication of the 2016 *Active Healthy Kids Australia Report Card on Physical Activity for Children and Young People*.



The 2016 AHKA Report Card was developed via a harmonised process as a part of the Active Healthy Kids Global Alliance.



This work is copyright. You may download, display, print and reproduce this material in unaltered form only (retaining this notice) for your personal, non-commercial use or use within your organisation. Apart from any use as permitted under the Copyright Act 1968, all other rights are reserved. Requests and inquiries concerning reproduction and rights should be addressed to Dr Natasha Schranz, Active Healthy Kids Australia Research Fellow, [AHKA@activehealthykidsaustralia.com.au](mailto:AHKA@activehealthykidsaustralia.com.au).

The 2016 Report Card on Physical Activity for Children and Young People should be cited as follows:

Active Healthy Kids Australia (2016). *Physical Literacy: Do Our Kids Have All the Tools? The 2016 Active Healthy Kids Australia Report Card on Physical Activity for Children and Young People*. Adelaide, South Australia: Active Healthy Kids Australia. <http://dx.doi.org/10.4226/78/57AAD6BD49165>

**The 2016 Report Card is available online at:**

[www.activehealthykidsaustralia.com.au](http://www.activehealthykidsaustralia.com.au)

ISSN: 2206-5881



**ACTIVE HEALTHY KIDS  
AUSTRALIA**

[www.activehealthykidsaustralia.com.au](http://www.activehealthykidsaustralia.com.au)

Active-Healthy-Kids-Australia @AHK\_Aus





# CONTENTS

Report Card Development Team	2
Executive Summary	3
Active Healthy Kids Australia	4
Physical Activity	5
Physical Literacy: Do Our Kids Have All The Tools?	6
Methods and Data Sources	7
Indicators	8
Reading the Grades	9
Overall Physical Activity Levels	10
Organised Sport and Physical Activity Participation	14
Physical Activity Participation in Schools	18
Active Transport	22
Active Play	24
Sedentary Behaviours	26
Family and Peers	30
School	34
Community and the Built Environment	38
Government Strategies and Investments	42
Physical Fitness	46
Movement Skills	48
Showcase Pages	50
National	51
Australian Capital Territory	52
New South Wales	53
Northern Territory	54
Queensland	55
South Australia	56
Tasmania	57
Victoria	58
Western Australia	59
Summary of Grades	60
Summary of Standardised Methodologies, Questions and Metrics	61
Detailed Description of Data Sources	65
Abbreviations	66
Acknowledgements	67
References	68





# REPORT CARD DEVELOPMENT TEAM

## Date of Publication

November 16 2016

## AHKA Executive Committee

A Prof Grant Tomkinson (Co-Chair)

Dr Natasha Schranz (Co-Chair)

Dr Louise Hardy

Prof Tim Olds

Prof Leon Straker

## AHKA Research Fellow—Project Manager & Lead Author

Dr Natasha Schranz

## AHKA Research Assistant

Mrs Charlotte Vincent

## Design and Production

Argon Design Pty. Ltd.

## Research Working Group

A Prof Grant Tomkinson  
(Lead Investigator)

University of South Australia/  
University of North Dakota

Dr Natasha Schranz (Lead Investigator)

University of South Australia

Prof Tim Olds (Lead Investigator)

University of South Australia

Prof Roslyn Boyd

The University of Queensland

Prof John Evans

University of Technology Sydney

Dr Sjaan Gomersall

The University of Queensland

Dr Louise Hardy

University of Sydney

A Prof Kylie Hesketh

Deakin University

Prof David Lubans

University of Newcastle

Dr Nicky Ridgers

Deakin University

Prof Leon Straker

Curtin University

Dr Stewart Vella

University of Wollongong

Prof Jenny Ziviani

The University of Queensland



# EXECUTIVE SUMMARY

In today's fast paced, time-poor, digital age, we find ourselves sitting still for longer than ever before. All this sitting and inactivity is problematic for the current and future health of children. Relative to inactive kids, active kids have better concentration, are more confident, have stronger muscles and bones, to name just a few of the health-related differences. So, how can we encourage and support our kids to be more physically active every day? Furthermore, how do we help them to achieve the recommended daily physical activity levels in spite of the ever-growing sedentary demands of our lifestyle?

Active Healthy Kids Australia (AHKA) is a collaboration of physical activity researchers from across Australia who share a common interest in increasing the physical activity levels of all young Australians. The vehicle we use to help increase awareness and drive this need for change is the **Report Card on Physical Activity for Children and Young People**. The Report Card synthesises the best available Australian evidence in order to assign grades to physical activity indicators, and provides a national snap shot of the current levels of physical activity in Australian children and young people.

To date, AHKA has released two Report Cards: an inaugural Full Report Card in 2014 and a Progress Report Card on Active Transport in 2015. The 2014 Report Card, which contributed to the first 'Global Matrix' of grades where our grades were compared to 14 countries from around the world, posed the question "Is Sport Enough?" Unfortunately, with Overall Physical Activity Levels being graded a D-, the conclusion was that Sport is not enough. On the back of Australia being graded a C for Active Transport, coupled with recent declines in children's use of active transport, the 2015 Progress Report Card suggested that Active Transport was now "The Road Less Travelled". Both Reports can be accessed at [www.activehealthkidsaustralia.com.au](http://www.activehealthkidsaustralia.com.au)

This year marks the release of the second Full AHKA Report Card on Physical Activity for Children and Young People, which assesses 12 physical activity indicators (physical activity behaviours, traits, and the settings and sources of influence, and strategies and investments, which have the potential to impact these behaviours and traits). As in 2014, Australia was assigned a failing grade (D-) for Overall Physical Activity Levels. This Report highlights the concept of Physical Literacy, specifically the 'tools' children need to be physically active for life. The results of the 2016 Report Card will contribute to the second 'Global Matrix' of grades, this time benchmarking Australia against 37 countries.

AHKA advocates for a coordinated national response to the current physical inactivity pandemic. There is no single solution to this problem. In order to see real improvement in physical activity levels we need a united effort across: government, non-government organisations, communities, sporting organisations and groups, schools, teachers, parents, coaches, friends, families, and children themselves. Physical activity needs to be prioritised every day, and it should not be viewed as something we feel like we *should* do, rather it should be viewed as something we all *want* and *choose* to do for fun, enjoyment, and better health and wellbeing.



# ACTIVE HEALTHY KIDS AUSTRALIA

## Who are we?

Active Healthy Kids Australia (AHKA) is a collaboration among Australian children's physical activity and health researchers (13 researchers from 9 universities), which is led by a team from the University of South Australia (the Lead Research University for the Report Card and the Adminstrating Institution of AHKA) and comprises the AHKA Research Working Group (RWG) and Executive Committee.

The primary goal of AHKA is to advocate for actions to increase the physical activity levels among Australian children, using the Physical Activity Report Card for Children and Young People as the core monitoring metric. The purposes of the Report Card are:

- *to encourage all Australians to make changes in their lives to promote, facilitate and model positive lifestyle behaviours of increased physical activity participation and reduced sedentary behaviours among the children and young people of today and tomorrow;*
- *to inform policy changes and decision-making across various sectors with the aim of increasing physical activity participation; and*
- *to highlight where more research is needed to better understand the physical activity of Australian children and young people.*

## What have we done?

The inaugural AHKA Physical Activity Report Card covering 12 indicators was released in 2014, alongside Report Cards from 14 other countries as a part of the first Active Healthy Kids Global Alliance 'Global Matrix' ([www.activehealthykids.org](http://www.activehealthykids.org)) that benchmarked Australia against the rest of the world.

Last year, the AHKA 2015 Progress Report Card focused on a single indicator, Active Transport, to which it assigned a C grade, with only about half of Australian school students using active transport to get to and from school at least once per week. The 2015 Progress Report Card received interest from various national and state/territory-based stakeholders and it was the first time AHKA included 'showcase' pages from each state and territory highlighting current programs, policies or initiatives that promote, facilitate or support active transport participation.

This 2016 AHKA Report Card was prepared to coincide with the second Active Healthy Kids Global Alliance 'Global Matrix' involving collaboration among 38 countries to release individual country Report Cards using a harmonised process.

**The primary goal of AHKA is to advocate for actions to increase the physical activity levels among Australian children, using the Physical Activity Report Card for Children and Young People as the core monitoring metric**

## What will we do?

Active Healthy Kids Australia is committed to releasing annually updated Report Cards, at least up until 2018, with the hope of continued releases thereafter. The current Report Card release cycle will continue through to 2018, with a **Progress Report Card** (focusing on a single physical activity indicator) released in **2017** and then a **Full Report Card** (long and summary forms) that covers all physical activity indicators released in **2018** (again, aligning with the Active Healthy Kids Global Alliance's 'Global Matrix').

## How can you be involved?

We need to work together as a nation if we want to see real improvement in the physical activity levels of Australian children and young people. To assist with this, AHKA is keen to engage with people from all sectors: government representatives (at the federal, state/territory and local levels); non-government organisations, community leaders; data custodians; sporting bodies, leaders and organisations; physical activity and health advocates; researchers and academics; schools and their communities; principals and teachers; parents and families; and most importantly all young Australians. It is vital that Australians be aware of how we can encourage, facilitate and support children and young people to better engage in physical activity every day.

**We need to work together as a nation if we want to see real improvement in the physical activity levels of Australian children and young people... It is vital that Australians be aware of how we can encourage, facilitate and support children and young people to better engage in physical activity every day**

Anyone who wishes to contact AHKA with regard to how they can be involved can do so via email: [AHKA@activehealthykidsaustralia.com.au](mailto:AHKA@activehealthykidsaustralia.com.au). More information about AHKA, and/or the current and previous Report Cards, can be found at: [www.activehealthykidsaustralia.com.au](http://www.activehealthykidsaustralia.com.au).



# PHYSICAL ACTIVITY

## Why is it important?

Achieving adequate levels of physical activity is vital for good health and wellbeing of all Australians. There is substantial evidence showing that children and young people who are active on a daily basis: are at a lower risk of conditions including overweight or obesity, Type II diabetes, metabolic syndrome and other comorbidities; and, are more likely to have a higher level of aerobic fitness and bone health and experience positive mental health benefits.<sup>1-5</sup> Research also shows that children who are physically active achieve greater academic success and maintain higher attention levels during class at school.<sup>1,6,7</sup>

## What do the guidelines say?

The Australian Physical Activity and Sedentary Behaviour Guidelines (from the Australian Government Department of Health) provide clear recommendations for the minimum amount of physical activity and maximum amount of sedentary behaviours, respectively, in which children and young people should engage to experience meaningful health benefits.<sup>8</sup> A summary of the guidelines for infants (birth to 1 year), toddlers (1–3 years), pre-schoolers (3–5 years), children (5–12 years) and young people (13–17 years) is summarised in Table 1.

**Table 1. Summary of the recommended Australian Physical Activity and Sedentary Behaviour Guidelines for children and young people.<sup>8</sup>**

Age group	Physical activity recommendations	Sedentary behaviour and screen time * recommendations
Infants (Birth to 1 year)	Physical activity should be encouraged from birth, especially supervised floor-based play.	Children (0–5 years) should not be sedentary, restrained or kept inactive for more than 1 hour at a time, with the exception of sleeping.
Toddlers (1-3 years) & Pre-Schoolers (3-5 years)	Toddlers and pre-schoolers should accumulate at least 3 hours of physical activity (light, moderate or vigorous intensity) every day.	Children (less than 2 years) should not take part in any screen time* activities.  Children (2–5 years) should be limited to less than one hour per day of screen time*.
Children (5-12 years) & Young People (13-17 years)	Children and young people should accumulate at least 60 minutes of moderate <sup>#</sup> to vigorous <sup>^</sup> intensity physical activity every day.  A variety of aerobic activities should be undertaken, including some physical activities that are vigorous <sup>^</sup> in intensity.  Physical activities that strengthen muscles and bones should be included on at least three days per week.  For additional health benefits, children and young people should engage in more physical activity (up to several hours) every day.	Children (5–12 years) and young people (13–17 years) should minimise the time spent being sedentary every day and break up long periods of sitting as much as possible.  Children (5–12 years) and young people (13–17 years) should limit their screen time* to no more than 2 hours per day.

<sup>#</sup> Moderate intensity physical activity requires some effort but children and young people should still be able to speak easily (e.g., brisk walking, active Mplay, riding a bike or scooter).

<sup>^</sup> Vigorous intensity physical activity requires more effort and should make children and young people breathe harder and faster (“huff and puff”) when participating (e.g., running, playing sport).

\* Screen time refers to time spent using electronic media such as television, seated electronic games, portable electronic devices or computers for entertainment.

# PHYSICAL LITERACY: DO OUR KIDS HAVE ALL THE TOOLS?

The AHKA 2014 Physical Activity Report Card showed that, as a nation, Australia was failing in regards to the overall physical activity levels of its children and young people<sup>9,10</sup>. Two years on the story is much the same with, a grade of D- again assigned for both Overall Physical Activity and for Sedentary Behaviours. What this means is that, despite all the evidence showing the health benefits associated with increased activity<sup>1-5</sup> and the detriments associated with excessive screen time,<sup>11,12</sup> Australian children (of all ages) still need to “move more and sit less”<sup>13,14</sup>.

But why are we still failing when it comes to our kids moving more? Australia is lucky in having excellent physical activity facilities in both communities and in schools: we are well equipped with grassed playing fields, indoor and outdoor courts, and swimming pools, with an abundance of play areas and walk and cycle-ways. Just as being academically literate requires skills, practice and tools, being physically literate also requires specific skills and capabilities. Perhaps we need to ask: “Do our kids have all the tools they need to be physically literate and engage in physical activity now and in the future?”

The term ‘Physical Literacy’ has become more widely used in recent years<sup>15</sup>, however there are many questions that still need to be answered in order to understand how to unpack it, measure it, improve it and consider how it changes across the lifespan<sup>16</sup>. But what is it? Physical Literacy encompasses the physical, cognitive, emotional and social capabilities an individual needs to be physically active for life\*.

\*At time of writing the Australian Sports Commission had engaged with an expert panel of academics (working in and around Physical Literacy), which included representatives from AHKA, to develop a unified definition of Physical Literacy in an Australian context. The terminology and concepts used throughout the Report Card, with regard to Physical Literacy, are consistent with discussions had so far amongst the expert panel. For further information please visit the Australian Sports Commission website: <http://www.ausport.gov.au> or contact: Penny Carlson, [penny.carlson@ausport.gov.au](mailto:penny.carlson@ausport.gov.au)

The ‘tools’ of Physical Literacy include, within the constraints of individual capabilities, a mastery of movement skills like catching, throwing, jumping and riding a bike; an understanding of the benefits of being physically active; and the confidence and motivation to enjoy and try new movements<sup>17-22</sup>, all of which combine to enable people to be physically active for life<sup>23-25</sup>. A child’s Physical Literacy ‘toolkit’ does not comprise pens and computers, but instead skipping ropes, bicycles, open spaces and encouragement and guidance from loved ones, friends, coaches and teachers. These ‘tools’ are developed through the learning that takes place not only in homes and schools, but also on playing fields, beaches and walking trails with significant others (i.e., teachers, coaches, family and friends).

**Physical Literacy encompasses the physical, cognitive, emotional and social capabilities an individual needs to be physically active for life**

Everyone is different and therefore how these ‘tools’ interact and develop simultaneously will result in each child taking a different ‘Physical Literacy journey’ from infancy through adolescence, and then into adulthood<sup>20,26</sup>. Just like academic literacy, Physical Literacy is not something that a child acquires or develops at just one age or milestone. Rather, Physical Literacy requires ongoing acquisition and development across all stages of childhood, with significant others all playing an integral role<sup>27</sup>. The end result is that they become a physically literate individual who has the physical, cognitive, emotional and social capabilities needed to support physical activity participation and is someone who makes the choice to be active (for fun, enjoyment, and better health and wellbeing) at an appropriate level throughout their life<sup>19,22,28-31</sup>.

We need to make sure that from the very beginning of children’s lives we are providing them with daily opportunities to develop their Physical Literacy<sup>32</sup> so that they grow up to become individuals who choose to engage in physical activity that challenges and benefits their bodies and minds because they know they are capable, because they want to and because they know the benefits<sup>31</sup>. So what can we do to ensure that our children and young people are equipped with all of the ‘tools’ they need?

**We need to make sure that from the very beginning of children’s lives we are providing them with daily opportunities to develop their Physical Literacy**

Building Physical Literacy, like academic literacy, needs the involvement of parents, schools, communities, local, state/territory and federal governments; it needs teachers with appropriate training (experts in the design and delivery of physical activity experiences for young people); the right resources in the home and in the school (e.g., bicycles and balls); and the right physical environments (outdoor play spaces that take on many forms and inspire creativity and imagination). Each and every one of us needs to value physical activity, but there is no single answer and no single person or sector that can solve this problem. As a nation we all need to set positive examples and play our part in order to develop physically literate children and young people who are equipped with all the ‘tools’ they need to be physically active every day, now and in the future.



# METHODS AND DATA SOURCES

In 2016, during the development of the Report Card, the AHKA RWG was responsible for: (a) deciding which indicators (in addition to the nine core indicators) would be assessed; (b) deciding how each indicator would be operationalised (i.e., the specific metrics/variables used to assign grades); (c) deciding which data sources to use to inform each of the grades; and (d) evaluating data in order to assign letter grades to each of the 12 indicators using pre-determined criteria and benchmarks and providing a confidence rating for the data used to inform each grade.

Data from a number of national and state/territory-based surveys were synthesised to inform the grades assigned to each of the Report Card indicators. Included surveys were conducted from 2010 onwards to ensure recent data assessing the physical activity or sedentary behaviours of children and young people, the settings and sources of influences that impacted on, or traits linked with, physical activity participation, were used. A brief description of the data sources used to inform the grades and key findings are reported in Table 2, with a more detailed description found in Table 6. While all available data were considered, the grades assigned were based primarily on national data, where possible.

**Table 2. Description of each of the data sources used to inform the grades assigned and key findings for each indicator of the 2016 AHKA Report Card.**

Survey	Sample	Indicator <sup>a</sup>
<sup>b</sup> ABS AHS/NHS <sup>33,34</sup>	National	1, 2, 4, 5, 6, 7
ABS CPSLAS <sup>35</sup>	National	2
<sup>b</sup> ABS PSPRA <sup>36,37</sup>	National	2
<sup>b</sup> ERASS <sup>38</sup>	National	2, 5
<sup>b</sup> LSAC <sup>39–41</sup>	National	2, 7, 8, 9
<sup>b</sup> NaSSDA (child) <sup>42,43</sup>	National	1, 2, 3, 4, 5, 6, 7, 9
<sup>b</sup> NaSSDA (school) <sup>43</sup>	National	8
<sup>b</sup> ACTPANS <sup>44,45</sup>	Territory (ACT)	1, 2, 4, 6, 7
<sup>b</sup> ISCOLE <sup>46</sup>	State (SA)	1, 2, 6, 8, 9
<sup>b</sup> LOOK <sup>47</sup>	Territory (ACT)	1, 2, 4, 6, 9, 11
<sup>b</sup> NSW PHS <sup>48–51</sup>	State (NSW)	1, 4, 6, 10
<sup>b</sup> NSW SSHBS <sup>52,53</sup>	State (NSW)	1, 2
<sup>b</sup> OPAL <sup>54</sup>	State (SA)	1, 3, 6, 7, 9
<sup>e</sup> QLD CHSS <sup>55–58</sup>	State (QLD)	1, 2, 3, 4, 6, 9, 10
<sup>b</sup> SAMSS <sup>59</sup>	State (SA)	1, 2, 9
<sup>b</sup> SmartStart <sup>60</sup>	Territory (ACT)	11
SPANS (child) <sup>61</sup>	State (NSW)	6, 7, 10, 11, 12
SPANS (school) <sup>61</sup>	State (NSW)	8
<sup>b</sup> VCHWS <sup>62</sup>	State (VIC)	1, 4, 6, 9
<sup>b</sup> VSHAWS <sup>63</sup>	State (VIC)	1, 6, 9

Note, please see abbreviations on page 66 for each survey name in full.






<sup>a</sup> Number coincides with how indicators are presented in the Report Card.

<sup>b</sup> Shows new data that were not used to inform the grades for the 2014 AHKA Report Card. This may only be for one wave of a given survey.

All synthesised data were evaluated by the RWG, with grades assigned after purposeful discussions, based upon each primary metric/s (e.g., the proportion of Australian children and young people meeting the national physical activity guidelines every day for Overall Physical Activity Levels) and pre-determined benchmarks that are consistent with those used by other countries participating in the 2016 Global Matrix (see grading benchmarks below).

<b>A</b> = succeeding with a majority of children and young people (81–100%)	<b>B</b> = succeeding with well over half of children and young people (61–80%)	<b>C</b> = succeeding with about half of children and young people (41–60%)
<b>D</b> = succeeding with some but less than half of children and young people (21–40%); and	<b>F</b> = succeeding with very few children and young people (0–20%)	<b>INC</b> = the available data does not reflect what the indicator represents or a consensus on how to operationalise the indicator could not be reached

For the first time this year, the RWG also graded the confidence they had in the data using a 1, 2 or 3 star scale. Each confidence rating reflects how representative (e.g., national vs. state/territory-based survey, sampling frame/procedure and response rate, age range of children surveyed, sample size obtained) and robust (e.g., objective vs. subjective, how subjective questions were asked, reliability and validity data) the data are with:

	= substantial concerns and not considered representative or robust
 	= some concerns regarding representativeness and robustness
  	= minimal concerns regarding representativeness and robustness

# INDICATORS

The 2016 AHKA Report Card assigned grades to a total of 12 indicators (nine core indicators endorsed by the Active Healthy Kids Global Alliance and three additional indicators [identified by the \* below]). Each indicator clustered under the categories: Strategies and Investments (Government Strategies and Investments), Settings and Sources of Influence (Family and Peers, School, Community and the Built Environment), Overall Physical Activity Levels (Organised Sport and Physical Activity Participation, Physical Activity Participation in Schools\*, Active Play, Active Transport, Sedentary Behaviours and Traits (Physical Fitness\*, Movement Skills\*) (see Figure 1).

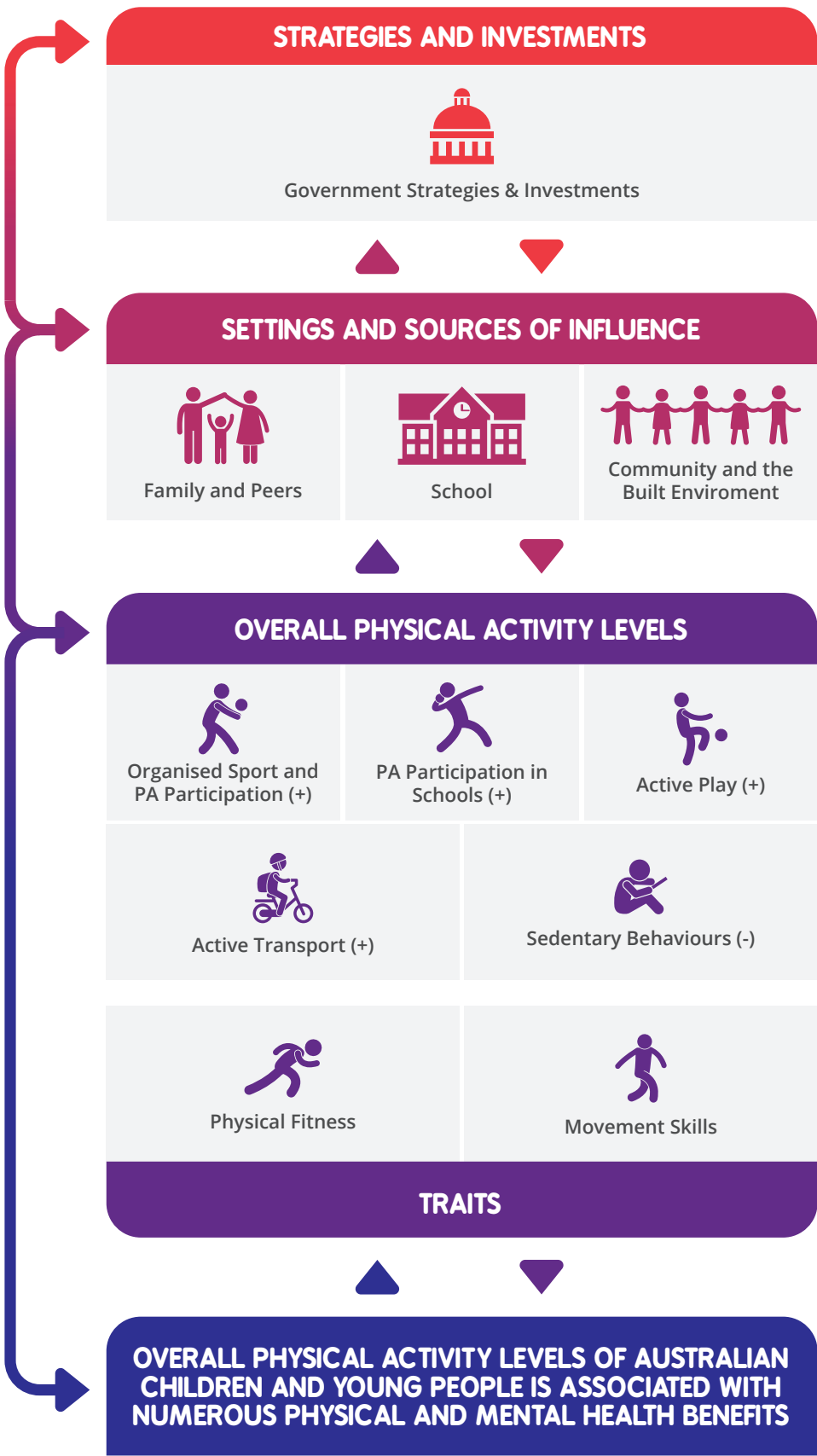


Figure 1.

Visual representation of the AHKA physical activity indicator categories. Note, this figure has been adapted from the 2015 ParticipACTION Report Card on Physical Activity for Children and Youth;<sup>64</sup> + = increases PA levels; - = decreases PA levels; PA = Physical Activity. \*Indicators included in addition to core indicators endorsed by Active Healthy Kids Global Alliance.



# READING THE GRADES

The following sections examine each of the 12 indicators, the grades that were allocated to each, and how the grades were allocated. Within each section, the following sub-sections will be used to examine each indicator:



## OVERALL PHYSICAL ACTIVITY LEVELS

2014

D-

2016

D-

In comparison to 2014 there is no evidence to suggest that Australia is performing any better (or worse) for Overall Physical Activity Levels, even when new national data<sup>43</sup> were considered. The majority of Australian children and young people aged 5–17 years are not meeting the daily Australian physical activity guidelines, however younger children aged 2–4 years are doing reasonably well.

### Confidence Rating



#### Rationale

In comparison to 2014 there is no evidence to suggest that Australia is performing any better (or worse) for Overall Physical Activity Levels, even when new national data<sup>43</sup> were considered. The majority of Australian children and young people aged 5–17 years are not meeting the daily Australian physical activity guidelines, however younger children aged 2–4 years are doing reasonably well.

- + National data indicate that 72% of children aged 2–4 years (as reported by their parents) are meeting the Australian physical activity guidelines by accumulating at least 180 minutes of physical activity each day.<sup>33</sup>
- + On average, parents report that Australian children aged 2–4 years meet the Australian physical activity guidelines on 6 days of every week.<sup>33</sup>

#### How can we improve the grade?

#### Key Findings

- + National data indicate that 19% of Australian children and young people aged 5–17 years<sup>33</sup> and 18% of Australian young people aged 12–17 years,<sup>43</sup> meet the national daily physical activity guidelines of accumulating at least 60 minutes of MVPA every day of the week.
- + On average, Australian children and young people aged 5–17 years and 12–17 years, meet the Australian physical activity guidelines on 4 days every week.<sup>33,43</sup>
- + Self-report state/territory-based data indicate that 22–62% of primary<sup>45–47, 51,54,58,59,62</sup> and 19–32% of secondary<sup>53,58,59,63</sup> school aged children, meet the daily physical activity guidelines.
- + Objectively measured (via the use of pedometers) national data indicate that, on average, Australian children and young people aged 5–17 years take 9,140 steps each day, with only 17% accumulating at least 12,000 steps per day<sup>33</sup> (60 minutes of MVPA per day can be approximated to 12,000 steps per day for children and young people<sup>65</sup>).
- + Objectively measured state/territory-based data (using accelerometry) show that 55% of children aged 9–11 years and 26% of young people aged 16 years, on average, accumulate at least 60 minutes of MVPA daily.<sup>46,47</sup>
- + It is crucial that all children be supported to develop the ‘tools’ they need to engage in physical activity across the lifespan<sup>31</sup> and that being active is easy and accessible. Being active needs to become second nature in order to prevent the age-related decline in physical activity participation typically observed in adolescence.<sup>33</sup>
- + A holistic approach regarding the benefits of physical activity participation needs to be taken so that all benefits (physical and mental health, social, academic achievement and cognitive function<sup>1–7</sup>) are given the focus they deserve.
- + It is vital that the Australian public not just be aware of the national physical activity guidelines, but information and resources be made easily accessible so that all individuals are equipped with a number of ways that they can embed physical activity throughout the entire day. This could be in the form of active transport, free play, organised sport and activities, family-orientated physical activity, physical activity in schools (e.g., active lesson breaks and during recess and lunchtimes) and everyday incidental activity (e.g., chores).





## What do we need to do?

### What do we need to know?

- + The collection of physical activity data, both national and state/territory-based, needs to occur via objective and subjective measures using consistent and standardised methodologies as we move forward. We need to harmonise the data collection and analytical methods of current monitoring systems.
- + Given the decline in physical activity participation (which begins from an early age), we need to unpack what motivates and encourages Australian children and young people to engage in physical activity on a daily basis, and how we can help them develop the 'tools' they need to be active for life.
- + Further exploration into whether health outcomes are just as good for children who, on average, accumulate 60 minutes of MVPA daily to those who accumulate at least 60 minutes of MVPA on all seven days of the week. This has implications for data collection methods and how we operationalise the primary metric for Overall Physical Activity.

### How to collect the data

Physical activity participation is complex and standardised methodologies for both objective and subjective measures should be considered.

Objectively, standardised data collection and analysis protocols should be used for various measurement tools (accelerometers, pedometers and multi-sensor devices), such that:

**Children are monitored for at least 3 days and ideally monitored for 7 days.<sup>66</sup> Researchers should report activity time (e.g., minutes MVPA and light physical activity) or step counts for each day (that data was collected on) and as a daily average.**

The proposed self-report question that should be employed is:

**Over the past 7 days, on how many days were you/your child engaged in moderate to vigorous physical activity (activity that increases heart rate and gets you/your child out of breath some of the time) for at least 60 minutes? Physical activity can be accumulated over the entire day (e.g., for example in bouts of 10 minutes).**

### How to operationalise the primary metric

Depending on how compliance with physical activity guidelines is operationalised (i.e., at least 60 minutes EVERY day, on MOST days or for 60 minutes ON AVERAGE over the week), very different estimates of compliance are reported.<sup>67</sup> However, to be consistent with the current Australian recommended physical activity guidelines, the primary metric proposed for Overall Physical Activity Levels is:

**Proportion of Australian children and young people meeting the recommended physical activity guidelines\* on all seven days of the week.**

*\*at least 60 minutes of accumulated MVPA every day OR if pedometers are used at least 12,000 steps every day.*

It is acknowledged, that typically, data collection via objective measures does not occur over a 7-day period (due to lack of compliance or wanting to reduce the burden on participants). Therefore, in this instance or until the guidelines are reviewed and revised, it is recommended that a secondary metric could be used to support the above for Overall Physical Activity Levels:

**Proportion of Australian children and young people meeting the recommended physical activity guidelines daily, on average\***

*\*Proportion of children and young people reporting at least 60 minutes MVPA on average per day OR if pedometers are used at least 12,000, on average, daily.*

### Physical activity guideline development

Recently, Canada released the first-ever 24-hour Movement Guidelines for Children and Youth, which integrate physical activity, sedentary behaviour and sleep.<sup>68</sup> In Australia it is important that continual development and review regarding the national physical activity guidelines occurs (and with regularity similar to that of other countries) to ensure that the recommendations given to all Australians are based upon the most up-to-date and highest quality research.



## BEYOND THE GRADE

### *Getting, and keeping, kids engaged in physical activity*

Just as we know newborn babies quickly become busy toddlers—playful, active and inquisitive children are quick to become disengaged and inactive teenagers.<sup>69</sup> Looking at Figure 2 we can see this decline in activity levels occurs from early childhood with the proportion of children meeting physical activity guidelines declining from 72% for 2–4 year olds down to 6% for 15–17 year olds.<sup>33</sup>

**Newborn babies quickly become busy toddlers—playful, active and inquisitive children are quick to become disengaged and inactive teenagers**

In addition, a longitudinal study conducted in Western Australia, which reported the sport participation rates of children aged 5–17 years, showed that over one-third of both girls and boys ‘dropped out’. Children who maintained participation had better indicators of physical health, and for boy’s, mental health also (see Figure 3).<sup>70</sup> But why is it that physical activity seems to take a ‘back seat’ as children get older?

Partly, this tendency to engage in less activity as children get older could be due to biological factors. This is supported by research that shows, as animals age we typically see similar declines in activity levels to that of humans, which could be due to changes in hormones released in the brain.<sup>71,72</sup> But in addition to potential biological factors (which may be harder to positively impact on), what other psychological, social and environmental factors could be at play?

**We need to make sure that children and adolescents are given ample opportunities to participate in a wide range of activities (both traditional and non-traditional) so that all Australian children and young people can find what inspires and motivates them to be active every day now and in the future**

Research shows that specific barriers and facilitators to physical activity participation during adolescence include:<sup>73</sup>

- + attitudes towards physical activity (e.g., perceived/known benefits);
- + motivation and enthusiasm to be physically active (e.g., maintaining intrinsic motivation);
- + having fun (e.g., diverse range of activities that are challenging but not competitive);
- + perceived competence (e.g., feeling adequate when comparing skill level to peers or not placing high importance on comparison to others);
- + perception of body image (e.g., feeling comfortable in front of others);
- + perception of social stereotypes (e.g., both boys and girls can participate in a range of activities);
- + time (e.g., prioritising physical activity participation above other pursuits);
- + influence of friends, family and significant others (e.g., being active with friends and family and physical education that supports and encourages participation);
- + environmental opportunities (e.g., access to various programs and infrastructures within various settings); and
- + transition periods (e.g., moving from primary school to high school).

Given there are so many factors that can impact on whether an adolescent chooses to remain engaged with physical activity, it is important that from a young age we are helping children develop their ‘tool kit’ which will encourage and support lifelong physical activity participation for all. We need to make sure that children and adolescents are given ample opportunities to participate in a wide range of activities (both traditional and non-traditional) so that all Australian children and young people can find what inspires and motivates them to be active every day now and in the future.



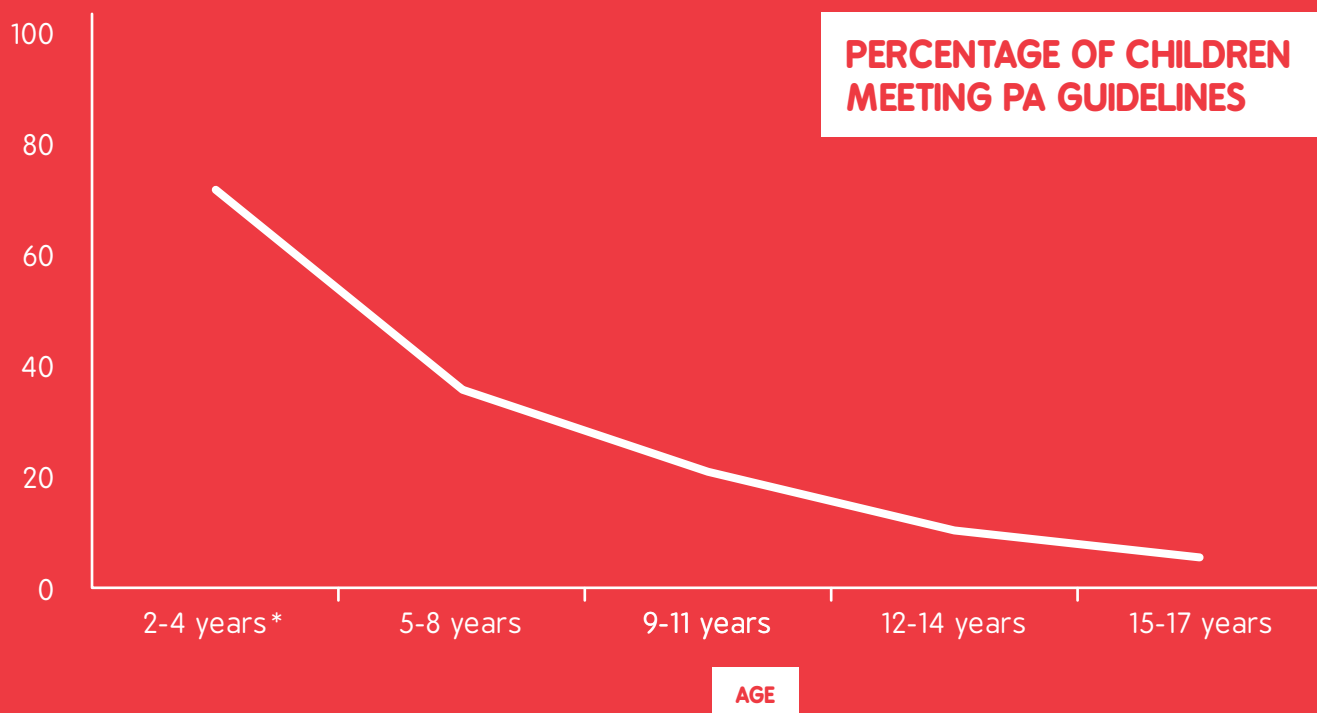


Figure 2.

Proportion of children meeting physical activity guidelines across different age groups. Note: PA = Physical Activity.

\*Guidelines are different to other age groups: accumulate at least 180 minutes of physical activity (of any intensity) every day vs. accumulate at least 60 minutes of MVPA every day.

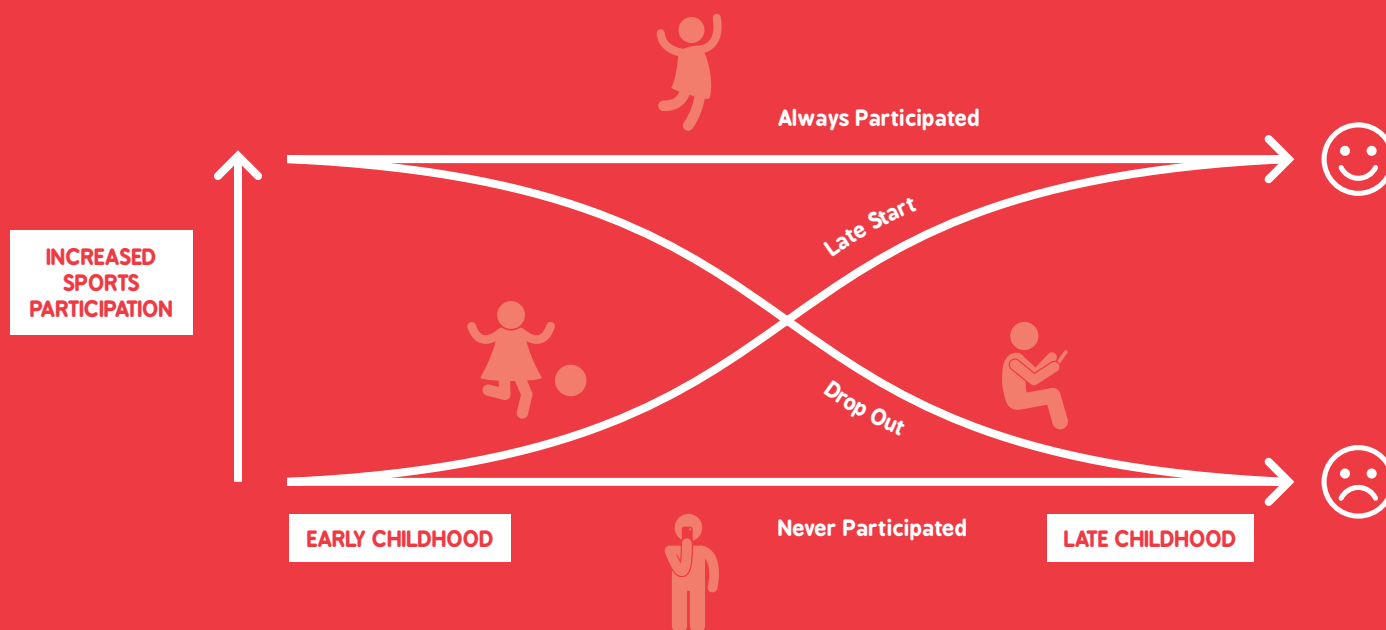


Figure 3.

Visual representation of sport participation trajectories from early childhood to late childhood.<sup>70</sup>

# ORGANISED SPORT AND PHYSICAL ACTIVITY PARTICIPATION

2014

B-

2016

B

Proportion of Australian children and young people participating in organised sport and/or physical activity.

## Confidence Rating



### Rationale

The improved grade from 2014 is a reflection of increased availability of national and state/territory-based data, which provide greater clarity around participation rates in organised sport and physical activity. Participation rates are still higher for this indicator amongst Australian children and young people, compared to the other physical activity behaviours addressed in the Report Card, with over two thirds of Australian children and young people participating in some form of organised sport or activity.

### Key Findings

- + National data indicate that 66% of 5–14 year olds<sup>35</sup> and 85–89% of 12–17 year olds<sup>42,43</sup> participated in organised sport or physical activity at least once during the previous 12-month period.
- + National data indicate that 64% of 5–17 year olds participate in organised sport or physical activity at least once during the past week.<sup>33</sup>
- + Nationally, data show that 81% of 10–11 year olds and 14–15 year olds<sup>41</sup> and 71% of 5–14 year olds<sup>38</sup> regularly participated in organised sport or physical activity over the past 12 months (i.e., regular participation is at least once weekly for a sporting season/over 3 months/during previous school term).
- + State/territory-based data indicate that 54–89% of primary<sup>45,46,58,59</sup> and 41–75% of secondary<sup>47,58,59</sup> school aged children participate in organised sport or physical activity. However the resolution for these data varies (i.e., some report participation rates for the past 12 months and others for the past/typical week).

### How can we improve the grade?

- + Participation in organised sport and physical activity should be made equitable and accessible for all Australian children and young people. One of the key barriers to sport participation in Australia is cost<sup>74–76</sup> and this is more evident for some sports than others. Equitable access also includes appealing to children who are not motivated by competition. Provisions and ways of reducing the cost of sport

participation and making sport appealing to all children and young people is needed and having support to do this is essential.

- + Currently, we are making great headway with regard to gender equality in sport participation by some of Australia's major sporting codes, in particular Cricket and Aussie Rules Football. However, it is important to continue this momentum and to shift the sporting culture towards complete gender equality when we consider pathways open to and access available for both males and females.
- + Sporting codes, organisations and coaches need to be continually evaluating and developing new practices (at the code, organisation and coach-to-player level) to encourage higher retention rates as children transition into adolescence. This is a key issue as in Australia we continue to see high participation rates but what those participation rates fail to capture is those children who dropout from sport completely.<sup>70</sup>

### What do we need to know?

- + Research investigating how active children and young people are when they are engaged in organised sport and physical activity needs to occur. While participation rates are high compared to other physical activity behaviours the benefit is lost if children and young people spend a large portion of their time at sporting commitments (i.e., training sessions and competitive games) inactive (e.g., listening to instruction, waiting for their 'turn').
- + The quality of sport participation also needs further investigation. Just ensuring that children and young people are active is not enough—the activity they engage in needs to be purposeful, fun and beneficial (both physically, mentally and socially).
- + We need to explore the best ways to encourage 'alternative' options for children and young people who are not drawn to participate in traditional organised sports and activities. Things such as adventure sports (e.g., BMX) and lifelong physical activities (e.g., resistance training, dance)<sup>77</sup> need to be considered and supported as they potentially could continue into adulthood more easily than other organised activities.



## What do we need to do?

### How to collect the data

In order to help understand the amount of physical activity actually done and the intensity it is performed at during organised sport participation, it is recommended that:

**During the time that children and young people participate in organised sport (both individual and team sports and for training sessions and competitive games), objective and observational data should be collected. Researchers should report the time that children and young people are active (e.g., time spent in MVPA or light physical activity from both objective data collected and/or observations made) either in minutes per session or as a proportion of the whole session time.**

In order to have greater resolution when assessing organised sport and physical

activity participation, and given the differential effects on health between team and individual sports,<sup>78</sup> the standardised self-report questions to be employed (outside of school) should be:

1. Have you/has your child participated in organised team sports and/or physical activity (e.g., basketball, football, netball) on a regular basis outside of school hours\* (at least once a week for at least 1 school term or an entire sporting season) over the past year?; and
2. Have you/has your child participated in organised individual sports and/or physical activity (e.g., martial arts, dance) on a regular basis outside of school hours\* (at least once a week for at least 1 school term or an entire sporting season) over the past year?

*\*Any organised sport or physical activity participated in outside of normal school hours, this includes any sport or activity for which they are representing their school as long as it occurs outside of school start and finish times.*

### How to operationalise the primary metric

The primary metric used to assess organised sport and physical activity participation should be:

**Proportion of Australian children and young people regularly participating\* (at least once per week for at least 1 school term or an entire sporting season) in organised team/individual sports and physical activity in the past 12-months.**

*\*This has changed from the 2014 Report Card as the RWG believed that regular participation is important and should be reflected in the participation rates.*





## BEYOND THE GRADE

*Supportive, demanding or crazed...which sporting-parent are you?*

Playing sport should be a joyful experience for all children but what happens when they no longer have fun or enjoy playing because of how their parents behave?

Research shows that parents are instrumental to whether a child chooses to continue participating in sport<sup>79</sup> but parents can sometimes find it hard to differentiate between when they are supporting versus pressuring.<sup>80</sup> The issue of 'parents behaving badly' at children's sporting events is not a new phenomenon with many junior sporting codes, organisations and clubs banning parents who do not abide by a strict code of conduct (e.g., the 'Play by the Rules' campaign which aims to make sport inclusive, safe and fair<sup>81</sup>) or putting in place other measures, such as 'silent Saturdays' in an attempt to prevent negative behaviour on the sidelines. And while this type of 'bad' or unsupportive behaviour is typically under scrutiny at competitive games and events, we need to also be mindful of other times when parents may have a negative impact on their child's enjoyment of sport depending on how they engage with them, such as in a 'post-game debrief'.<sup>82</sup>

A study, which looked at the perceptions of 7–14 year-olds (attending a tennis camp) with regard to how their parents behaved and how they wanted them to behave at their sporting events, reported that parents can be typically described as: a supportive parent, a demanding coach or a crazed fan.<sup>83</sup> Table 3 describes each type of sporting-parent and how children view each of the behaviours. Which one are you?

**Playing sport should be a joyful experience for all children but what happens when they no longer have fun or enjoy playing because of how their parents behave?**

We need to make sure that when children participate in sport they do so in a S.A.A.F.E (Supportive Active Autonomous Fair Enjoyable)<sup>84</sup> environment, of which parental behaviour before, during and after competition plays a fundamental role. Instead of asking what type of sporting-parent am I (supportive, demanding coach or crazed fan), we need to ask what type of sporting-parent does my child want and need me to be?


**Table 3. Description of each sporting-parent identified by the 'Kids Speak' study and how children view the behaviours associated.<sup>83</sup>**

Sporting-parent type	Behaviours associated	What they do at games	Child's view
<b>Supportive Parent</b>	<b>Attentive silence</b>	Pays attention and is positive in silence	😊
	<b>Cheering</b>	Cheers in appropriate ways that are not embarrassing or distracting	😊
	<b>Encouragement</b>	Encourages all players even in response to mistakes	😊
	<b>Praise</b>	Praises players and officials at appropriate times	😊
	<b>Empathy</b>	Makes sure positive comments made do not make other teammates or players feel bad	😊
<b>Demanding Coach</b>	<b>Protective Intervention</b>	Yells only in appropriate circumstances, e.g., in response to something unsafe	😊
	<b>Instruction</b>	Gives instruction that contradicts what coach says, is repetitive or tells players what to do	😞
	<b>Advice</b>	Gives advice (not all the time) during break times that is appropriate and positive	😊
<b>Crazed Fan</b>	<b>Critical Encouragement</b>	Makes encouraging statements but in a tone which is annoying and or/ hurtful	😞
	<b>Arguing</b>	Argues with coaches and/or officials resulting in negativity	😞
	<b>Blaming</b>	Blames decisions and officials for outcome	😞
	<b>Derogation</b>	Acts in a way that is mean and hurtful e.g., 'booing' team/player if goal/point is scored	😞
	<b>Disruption</b>	Acting in a way that distracts the team/player e.g., waving to get attention	😞
	<b>Yelling</b>	Yells inappropriately (in a negative way) during the game at coach or game official	😞
	<b>Fanatical Cheering</b>	Go crazy with excitement but are annoying and puts pressure on players	😞

Note:

😊 = child views these behaviours as having a positive impact to their sport experience; and

😞 = child views these behaviours as having a negative impact to their sport



**Instead of asking what type of sporting-parent am I, we need to ask what type of sporting-parent does my child want and need me to be?**



# PHYSICAL ACTIVITY PARTICIPATION IN SCHOOLS

2014  
INC

2016  
INC

No consensus on a primary metric could be reached.

## Confidence Rating

N/A

### Rationale

An Incomplete was again assigned for this indicator, given the lack of national and state/territory-based data for primary or secondary school children that accurately reflect the physical activity (both in physical education classes and outside of this time) done in schools. Some data are available that show time spent in physical education but data regarding how active students are during physical education or at other times such as during recess or class time are lacking.

### Key Findings

- + National data indicate for those secondary students (aged 12–17 years) who report doing physical education during the school week, 50–51% engage in at least 120 minutes per week and 30–31% engage in at least 150 minutes per week.<sup>43</sup>
- + State-based data indicate that for primary school students, 33–39% engage in at least 120 minutes of physical education per week and 18–20% engage in at least 150 minutes of physical education per week.<sup>55</sup>
- + State-based data indicate that for secondary school students, 27–49% engage in at least 120 minutes of physical education per week, and 14–27% engage in at least 150 minutes of physical education per week.<sup>55</sup>
- + State-based data indicate that 50% of primary school students report to being active 'A lot' during recess and lunch times.<sup>54</sup>

### How can we improve the grade?

- + In the school setting it is vital that all students (both primary and secondary) are supported and encouraged to be physically active for a substantial part of their day. Comprehensive School Physical Activity Programs should be implemented<sup>85</sup> to facilitate the engagement of students in high-

quality activities that occur during various times throughout the school day, such as recess and lunch times, active lessons and lesson breaks, and physical education classes. The active/play spaces students engage with also need to be inviting and facilitate activity.<sup>86</sup>

- + Positive student culture needs to be developed so peer encouragement<sup>87</sup> to be active is embedded within each school day.
- + Both primary and secondary school teachers should be encouraged and supported to participate in on-going professional learning opportunities to develop their understanding of how to provide physical activity within and beyond the classroom.<sup>88</sup>

### What do we need to know?

- + It is important that we have a better understanding of the amount of actual activity students engage in throughout their school day, rather than a reflection of what time has been 'allocated' (at the school level). During this 'allocated' time students may or may not be active (e.g., time spent active during physical education classes versus time allocated for physical education classes).<sup>89</sup>
- + We need to explore novel strategies to engage students to be active during the school day (at various times) and how schools and teachers can facilitate this.
- + How an effective documenting and reviewing process can be operationalised so that we may publicly report how much physical activity is being done throughout schools at a national level. Schools that are falling below where they should be can then be identified and provided with the support they need (e.g., professional development programs, making connections with those schools who are modelling best practice).



## What do we need to do?

### How to collect the data

To help understand the amount of, and the intensity at which, physical activity is performed during physical education classes (not including school sport) and other unstructured periods (e.g., recess and lunchtime, and active lessons or lesson breaks), it is recommended that:

**While students (in both primary and secondary schools) participate in physical education classes and are physically active during other periods throughout the school day, objective and observational data should be collected. Researchers should report the time that children and young people are active (e.g., time spent in MVPA or light physical activity from both objective data collected and/or observations made) either in minutes per session or per school day, or as a proportion of the whole session time or whole school day.**

The standardised self-report questions that should be employed for primary and secondary students, with regard to physical education participation, are:

1. How many physical education sessions/classes do you have every week (count double lessons as 2 sessions/classes), not including school sport?;
  2. How long do each of the physical education classes/sessions go for?; and
  3. On average for how long during each physical education class/session are you active (e.g., not standing or sitting down listening to instruction, getting changed etc.)?
2. Thinking about both recess and lunch combined, on average for how long during recess and lunch are you active (e.g., not standing or sitting down)?; and
  3. On how many days, over the past 5 school days, did you use the gymnasium (or indoor play space)/outside sports field (or grassed area)/hard court (or paved area)/playground/sports (or physical activity) equipment\* during school hours (but outside of scheduled physical education classes)?

In order to gauge how active students are outside of scheduled physical education times (i.e., during recess and lunchtime) and to determine whether they engage with school physical activity facilities and equipment, the suggested standardised self-report questions that should be employed are:

1. Thinking about both recess and lunch combined, how much time each day during recess and lunch do you get free time (i.e., time that you can choose to do what activity you want to do)?;

*\*For each question a separate answer needs to be given for each of the facilities/equipment listed and/or available.*

### How to operationalise the primary metric

Until more is understood about how much physical activity is actually performed during the school day at various times (e.g., physical education classes/sessions, recess and lunchtime, active lessons or lesson breaks) and the intensity at which it is performed, no primary metric is suggested.



# BEYOND THE GRADE

## *Just let them play!*

Recess and lunch breaks provide a great source of time for students at school to get outside and be active. But just how important is this time, what is getting in the way of students engaging in more physical activity during this time and what can we do to support, encourage and facilitate more activity?

While recess and lunch breaks are times that allow children at school to refuel and have some free time, the benefits are much more than this description suggests. They provide children with an opportunity to engage in physical activity which is positively linked with improved cognitive performance, attention and behaviour in class.<sup>90</sup> But this also can significantly contribute to a child's accumulation of activity (including both light and MVPA) throughout the day which as previously stated has numerous positive health benefits<sup>2-4</sup>. Recess and lunch breaks also allow children to engage and play with their friends and peers in a fun and self-directed way which facilitates and supports social and emotional learning through social interactions, role playing and abiding to 'school yard' rules.<sup>90</sup> Despite these benefits, what roadblocks are put in the way of school children being active and having fun during recess and lunch breaks?

**While children need to refuel, be safe and adhere to all policies while at school, we need to make sure that they are also able to freely engage in a range of activities during recess and lunch breaks that are not structured but are facilitated, supported and self-directed... While the rest of their day may be scheduled from wake-up to bedtime, it is important we sometimes just let them play!**

The time scheduled for recess and lunch breaks may not necessarily be declining, however the time children get to be active may be. Many schools, especially for the primary years, tend to allocate a portion of recess and lunch breaks to eating which for some children can take up a substantial part of their activity time. Schools can also be quite risk averse when it comes to children being able to choose their recess and lunch time activities. In some extreme cases highlighted by the media, there have been schools that have prohibited children from participating in 'risky' activities or games such as doing cartwheels or playing dodge ball, using 'dangerous' sporting equipment (e.g., bats) and playing on 'hazardous' equipment (e.g., monkey bars or climbing trees).

And this is despite the evidence that these types of 'risky' play and others boast many physical, social and emotional benefits.<sup>91</sup> Children may also be discouraged from being active depending on the uniform they are required to wear. While children need to refuel, be safe and adhere to all policies while at school, we need to make sure that they are also able to freely engage in a range of activities during recess and lunch breaks that are not structured but are facilitated, supported and self-directed.

So what are the attributes of the school yard that facilitate, encourage and support activity during recess and lunch breaks? Figure 4 depicts the 'ideal' school yard with regard to physical activity participation during recess and lunch breaks<sup>87,92-94</sup> and while some of these elements may just be expected of schools, we need to ensure that all Australian schools are supported through various means (e.g., funding, professional development, school community support etc.) to ensure children have access to school yards like this.

Recess and lunch breaks during the school day are so profoundly important to Australian children and young people for so many reasons. While the rest of their day may be scheduled from wake-up to bedtime, it is important we sometimes just let them play!

**Figure 4.**

Visual representation of the 'ideal' school yard to encourage, support and facilitate physical activity during recess and lunch breaks during the school day.



MARKINGS THAT SUPPORT CREATIVITY & IMAGINATION,  
THAT ENCOURAGE & FACILITATE VARIOUS GAMES & ACTIVITIES



AVAILABILITY OF BOTH FIXED & NON-FIXED EQUIPMENT



SAFE ENVIRONMENT BOTH SOCIALLY & PHYSICALLY



FACILITIES THAT ARE ACCESSIBLE, AVAILABLE  
& APPEALING TO ALL STUDENTS



POLICIES TO SUPPORT PHYSICAL ACTIVITY



ENCOURAGEMENT FROM FRIENDS, PEERS & TEACHERS



TEACHER SUPERVISION BUT ALLOWING CHILDREN  
TO SELF-DIRECT ACTIVITIES



## ACTIVE TRANSPORT

2014<sup>#</sup>

C

2015<sup>#</sup>

C

2016

C-

Proportion of Australian school children for which active transport\* is their usual mode of transport to and from school for at least part of the journey. Usual is defined as at least 5 trips out of 10 or on at least 2.5 school days or child/parent indicates active transport is their usual mode.

\*Active transport is defined as any form of human powered transportation (e.g., locomotion on foot, or bicycle, skateboard, etc.).

#Previously, the primary metric for 'Active Transport' was the "proportion of Australian children and young people travelling to and/or from school using active transport (at least once per week)".

### Confidence Rating



#### Rationale

Less than half of Australian primary and secondary school children report using active transport as their usual mode for getting to and/or from school. The decline in the grade from 2014 and 2015 reflects the new primary metric used to allocate the grade, which raises the bar on what was set previously from at least once per week to usual mode of transport.

#### Key Findings

- + National data indicate that 43% of secondary school students aged 12–17 years usually travel to and/or from school using active transport.<sup>43</sup>
- + State/territory-based data report that 19–53% of primary school students usually travel to and/or from school using active transport<sup>45,46,51,57,62</sup>
- + State/territory-based data indicate that 26–45% of secondary school students usually use travel to and/or from school using active transport.<sup>47,51,57</sup>
- + National data indicate that Australian children and young people aged 5–17 years spend an average of 18 minutes per day using active transport to various destinations,<sup>33</sup> and this time increases as children get older (5–8 years, 13 minutes; 9–11 years, 18 minutes; 12–14 years, 20 minutes; and 15–17 years, 24 minutes).<sup>33</sup>

#### How can we improve the grade?

- + Currently in specific Australian states and territories, people of all ages are permitted (by law) to ride a bicycle on all footpaths, with some jurisdictions also introducing road rules that require a motorist to remain at a safe distance when passing a cyclist on the road. Given that traffic concerns play a huge part in whether a child will ride to school<sup>95–97</sup> these types of safety-driven road rules should be implemented nationally.

This could encourage greater active transportation participation to school and other destinations, which at times may be safer on the footpath.

- + It is important that Australian families think of different ways that they can incorporate active transport into their everyday lives, both when travelling to and from school and to other destinations.<sup>98</sup> If completing an entire journey using active transport is not possible (e.g., the distance is too far), other strategies need to be considered such as 'park and ride/walk' a distance away from the destination or perhaps using public transport that can also incorporate active trip components to get to/from pick-up and drop-off destinations.<sup>99</sup>
- + We need to ensure children and young people are equipped with the 'tools' they need to safely, competently and confidently become active commuters to various destinations. This acquisition of 'tools' needs to start from the early years through adolescence.<sup>26,27</sup>

#### What do we need to know?

- + Population-representative data regarding active transport use to destinations other than school is needed in order to better understand this behaviour.
- + More research examining the extent to which children and young people engage in active transport, when incorporated into a journey with public transport, is needed. Public transport provides families with an alternative when active commuting the entire way is not possible.
- + The distance children and young people (and their families) are willing to travel using active transport is an important question that needs to be answered, given that distance is one of the biggest barriers to active transport use.<sup>97,100,101</sup>

## What do we need to do?

### How to collect the data

Until we have more quality data regarding active transport across the entire day for Australian children and young people (to various destinations), the standardised self-report questions that should be employed are:

1. On how many of the past 5 school days did you/your child travel to (or part of the way to\*) school by walking, cycling or some other form of active transport? How long in minutes was the active part of each trip (on average)?;
2. On how many of the past 5 school days did you/your child travel from (or part of the way from\*) school by walking, cycling or some other form of active transport? How long in minutes was the active part of each trip (on average)?; and

3. How often, during the past 7 days, did you/your child travel from place to place (not including to/from school) all or part of the way\* by walking, cycling or some other form of active transport? Answers: Every day; Most days (5–6); Some days (3–4); Not many days (1–2); Never.

\* Note, the active transport part of the trip must have taken at least 10 minutes.

### How to operationalise the primary metric

The primary metrics used to assess Active Transport should be:

1. Proportion of Australian school children for whom active transport is their usual mode\* of transport to and from school for at least part of the journey (at least 10 minutes); and

2. Proportion of Australian children and young people using active transport, all or part of the way to destinations (not including to/from school for at least 10 minutes), on at least 3 of the past 7 days.

\* Usual is defined as at least 5 trips out of 10 or child/parent indicates active transport is their usual mode.

## BEYOND THE GRADE

### What would happen if you left the car at home for a year...

Active transport provides one of the easiest and most convenient solutions for incorporating more activity into a child's day, whether it be to and from school or some other destination. However, there are many barriers that discourage children and their families from using active transport that include traffic and safety concerns, distance to travel, logistics from one destination to another and a lack of time all of which were highlighted in the 2015 AHKA Progress Report Card on Active Transport.<sup>102</sup>

But what if a child (and their siblings and parents) actively commuted to and from school for a whole year and the car was left at home? Or for those who logistically cannot get to school without the car, it was parked at least 1 km away from school grounds and then the children walked the rest of the way at drop off and pick up? What would this look like with regard to distance walked, money saved, body fat reduction and carbon emissions (see Figure 5)?

In addition to the benefits already highlighted, children will also experience the social benefits of walking at least part of the way to school (i.e., interacting with family and friends) and they can develop their knowledge around road safety and their local neighbourhood. Every little bit adds up—so will you walk to school tomorrow?

### How do you figure that?

For the Body Fat reduction in Figure 5, let's assume:

Walking (on average) requires 3 METs\* at 5 km per hour and therefore total time walking would be 80 hours = 14,400 MET.min.

A MET.min is about 4 mL of O<sub>2</sub> per kg for a child and if child weighs 50 kg = 200 mL or 0.2 L O<sub>2</sub>.

14,400 MET.min X 0.2 L = 2880 L O<sub>2</sub>

But in a car they would use 1 MET, therefore they consume an extra 1920 L walking.

1 L O<sub>2</sub> = 20 kJ therefore total kJ = 38,400 or about 64 CANS OF COKE.

1 kg of fat is about 37,000 kJ

\* A MET is a unit used to estimate the metabolic cost of physical activity, with 1 MET thought to be equivalent to a person's resting energy expenditure.



Figure 5.

What would happen if your child were to walk to school every day for a whole year?

Note, kJ = CO<sub>2</sub> = carbon dioxide, kJ = kilojoule, kg = kilogram, km = kilometre, L = litre, min = minute, mL = millilitre, O<sub>2</sub> = oxygen.

\* based on a medium car class (Ford Mondeo).<sup>103</sup>



## ACTIVE PLAY

2014  
INC

2016  
INC

No consensus on a primary metric could be reached.

### Confidence Rating

N/A

#### Rationale

An Incomplete was again assigned to this indicator, given there is no single metric (with quality evidence available) that defines what active play is well, and no clear benchmark describing how much active play is sufficient to determine how we as a nation are performing. Active play is essentially all other physical activity behaviours that do not fall under the previous domains (i.e., it is **NOT** organised sport, physical activity done at school or active transport) and it can also be described as 'non-organised' physical activity (as reflected in the terminology of the key findings below). However, trying to capture these types of activities (e.g., mucking around on a trampoline or shooting some hoops with friends) and then aligning participation levels to a specific benchmark in order to assign a grade, is something Australia and a number of the other countries within the Active Healthy Kids Global Alliance, have been unable to do well.

#### Key Findings

- + National data from parents indicates 78% and 85% of Australian children and young people aged 5–17 years and 5–14 years respectively, participated in non-organised physical activity over the past week<sup>33</sup> or at least once per week out of school hours during the previous school term.<sup>38</sup>
- + National data indicate that 54% of Australian children and young people aged 12–17 years participate in at least 210 minutes of non-organised activities each week (i.e., on average at least 30 minutes every day).<sup>43</sup> However this number has declined from 66% that was reported during the previous data collection cycle (2009/10 to 2012/13).<sup>42</sup>
- + National data from parents indicate that Australian children aged 2–4 years spend an average of 174 minutes playing outdoors every day.<sup>33</sup>

#### How can we improve the grade?

- + Children need to be provided with ample opportunities on a daily basis to engage in unstructured 'active play' or 'non-organised activity' so they can

explore the various ways in which to be active. This also encourages children to choose active pursuits rather than sedentary pursuits when given the option.

- + Parents, families and children need to make time for outdoor play each and every day, as it encourages children and young people to engage in activity at higher intensities that would typically be restricted if indoors.<sup>64,105</sup>
- + When outdoor play is not permitted, children should also be exposed to a variety of engaging active indoor pursuits such as dancing around the living room, garage fitness challenges and rough and tumble play.<sup>106</sup>
- + Given that national research shows participation in non-organised activity declines as children get older and transition into adolescence (proportion of children and young people who participate in non-organised activity during the past week: 91%, 5–8 years; 90%, 9–11 years; 72%, 12–14 years; and 54% 15–17 years),<sup>33</sup> it is vital that children develop the 'tools' they need to participate in lifelong physical activity.<sup>31</sup>

#### What do we need to know?

- + A consensus regarding how to define and operationalise the concept of 'active play' is vital moving forward. The lack of a clear definition and benchmark (i.e., how much children should be doing) has resulted in a lack of research in this area and the collection of inconsistent data. Unfortunately, we are currently unable to accurately capture how much active play children are engaging in.
- + Exploration into the differences between children and young people of various ages with regard to how they engage in and with unstructured play and/or activity is needed. This will help unpack their motivations to engage and decipher the best language to use when capturing active play data for different age groups (e.g., adolescents may respond better if 'non-organised' or 'leisure time' activity was used rather than 'active play' or 'free play').



## What do we need to do?

### How to collect the data

First and foremost, a clear, universal definition of active play is needed so that guidelines and recommendations around how much children should be doing can be established. Objective physical activity data are needed for a better understanding of the active play activities children and young people engage in. It is therefore recommended that:

**While children and young people (of all ages) are engaged in active play or activities that do not fall under other activity domains (i.e., NOT organised sport, physical activity at school or active transport), objective and observational data should be collected. Researchers should report the time that children and young people are active (e.g., time spent in MVPA or light physical activity from**

**both objective data collected and/or observations made).**

Until a clear definition of active play is developed the standardised self-report questions that should be employed are:

Thinking of active play, which is any physical activity that is **NOT** part of organised sport, physical activity done at school or active transport, and is **NOT** restricted by rules usually set and governed by adults (e.g., kicking a ball against the wall, playing a game of tag with friends or playing on fixed equipment at a park):

1. How much time did you/your child spend engaged in active play on average per day over the past 7 days? (preschool and primary school children); and  
Thinking of non-organised physical activity, which is any activity that

is **NOT** part of organised sport, physical activity done at school or active transport and is **NOT** restricted by rules usually set and governed by adults (e.g., kicking a ball against the wall or running around with your dog at the park):

2. How much time did you spend engaged in non-organised physical activity on average per day over the past 7 days? (young people in secondary school).

### How to operationalise the primary metric

There are no recommended primary metrics for this indicator because no clear definition of active play, or guidelines/recommendations on the amount of active play that should be accumulated by children and young people every day and/or week, is available.

## BEYOND THE GRADE

### What really is active play?

If you were to ask three people “what is active play?”, it is quite likely that you would get three different responses that focused both on what the construct actually is (i.e., a definition) and the types of activities that fall under this construct (i.e., jumping on a trampoline, kicking the footy in the backyard). All of them would be correct to some degree. This is where the problem lies when we try to measure and understand active play better from a research perspective, because it encompasses so many different types and intensities (i.e., light, moderate, vigorous) of activities that occur in so many different settings with many different people at different times throughout the day. The terminology used can also pose some issues, as younger children and their parents may relate well to the word ‘play’, but for older children and young people, the term ‘play’ may not resonate well, whereas ‘non-organised’ or ‘leisure-time’ activity might.

If we look at active play in context with the other behaviour indicators of the Report Card and how it contributes to overall physical activity levels we could define it as ‘all physical activity that is NOT organised sport or physical activity, school-based physical activity or active transport’. And while from the outset this may provide some initial clarity, we need to also consider definitions from the play literature which attributes the following descriptors to active (or free) play: freely chosen, unstructured, includes a wide range of self-chosen activities undertaken for interest and satisfaction, is flexible and spontaneous, minimally constrained by adult demands, there is no end product, no time pressures, no fear of failure and the activity appears to occur for its own sake.<sup>107,108</sup>

So what might a day in the life of a child look like with regard to active play? A study that captured 24 hours of activity (using an electronic use-of-time diary) for Australian children aged 9–16 years<sup>109</sup> found that on average, children engaged in 40 minutes of play per day but the activities done during this time were diverse. Figure 6 shows how these 40 minutes were spent in different play-based activities of varied intensities.

### On average, children engaged in 40 minutes of play per day

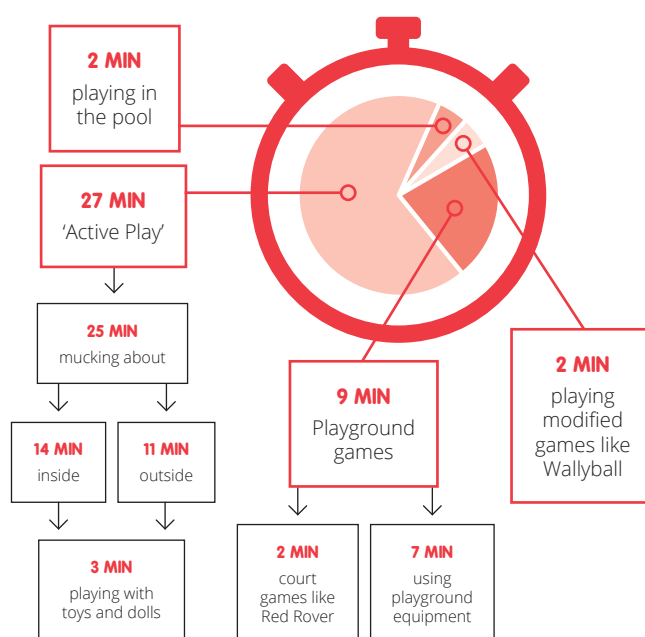


Figure 6.

Visual representation of how a child spends their time engaging in play.

Active play has an important place in a child's everyday activities, not only from a physical perspective, but it also positively impacts on their social and cognitive skills and allows them to challenge their imagination and creativity in a non-restricted way.<sup>107,110,111</sup> Active play is something that children choose to do, not something they are scheduled to or 'have to' do. We need to ensure that Australian children have all the 'tools' they need by supporting their physical literacy development from infancy, through childhood and adolescence so that they choose to engage in active play during their free-time.

## SEDENTARY BEHAVIOURS

2014

D-

2016

D-

Proportion of Australian children and young people meeting the Australian sedentary behaviour screen time guidelines: children aged under 2 years should have no screen time exposure, children aged 2–4 and 5–17 years should limit their use of screen time for entertainment purposes to no more than one and two hours respectively, every day of the week.<sup>8\*</sup>

\*Sedentary behaviours include activities during waking time that involve sitting or lying down and require low levels of energy expenditure (e.g., at school sitting at a desk or a computer, in leisure time watching television, reading or socialising and in transport sitting in a car, bus or train). However, much of the research to date has focused on one domain of sedentary behaviour, screen time, and therefore the metric chosen to assign a grade to the sedentary behaviour indicator has utilised the Australian sedentary behaviour guidelines for screen time.<sup>12</sup>

### Confidence Rating



#### Rationale

New national and state/territory-based data indicate no change from 2014, with the majority of Australian children and young people still not meeting the national recommended sedentary behaviour screen time guidelines.

#### Key Findings

- + National data indicate that only 29% of Australian children and young people aged 5–17 years<sup>33</sup> and 14% of Australian young people aged 12–17 years<sup>43</sup> are meeting the sedentary behaviour screen time guidelines ( $\leq 2$  hours every day).
- + State/territory-based data, for primary school aged children, are quite inconsistent with regard to the prevalence of school aged children meeting screen time guidelines ( $\leq 2$  hours every day) or those engaging, on average, in less than two hours of daily screen activity. These data show that 13–81% of children are meeting the screen time guidelines<sup>50,54,61,62</sup> and that 46–83% of children are engaging in less than 2 hours of screen time daily (on average).<sup>45,58,59</sup>
- + State/territory-based data indicate that 22–37% of secondary school aged young people are meeting screen time guidelines ( $\leq 2$  hours every day)<sup>61,63</sup> and 15–68% are engaging, on average, in less than 2 hours of screen time daily.<sup>47,58,59</sup>
- + National data from parents indicate that only 26% of Australian children aged 2–4 years are meeting the sedentary behaviour screen time guidelines ( $\leq 1$  hour every day).<sup>33</sup>

- + State-based data indicate that 29% of children aged 2–4 years engage in less than 1 hour of screen time daily (on average).<sup>59</sup>
- + There are currently no national or state-based data on screen time exposure for children under the age of 2 years.

#### How can we improve the grade?

- + Research shows that children with access to screen-devices in their bedroom are more likely to engage in substantial amounts of screen-based activities for purposes other than study.<sup>112</sup> Access to screens in bedrooms should be removed in combination with reducing family-based screen activities in other areas of the household.
- + Children and young people and their families need to be continually educated regarding the importance of balancing different types of sedentary behaviours and that some are likely to be more detrimental than others (e.g., screen time for entertainment vs. study for school vs. reading a book).<sup>12,113–116</sup> Parents should use autonomous and supportive parenting practices, whereby parents involve children in the formation of household rules and consequences/rewards.<sup>117</sup>
- + Children and young people spend a large amount of their week at school and a substantial amount of that time is typically spent being sedentary.<sup>118,119</sup> Breaking up time spent sedentary with active lessons or lesson breaks should be explored by both primary and secondary schools, with support for teachers provided through ongoing professional development.

### What do we need to know?

- + Similar to 2014, there are no national data on children under 2 years regarding time spent engaged in screen-based activities and time spent restrained (e.g., in a stroller). These data are needed to capture the sedentary behaviours of all Australian children and young people.
- + More research that examines the patterns (i.e., examining daily sedentary bouts and their duration/frequency and when they occur during the day) of sedentary behaviour engaged in by children and young people (screen-based and other) and the dose-response relationships between different types of sedentary behaviours and various health outcomes needs to be clarified.
- + The definition of screen time is becoming much more complex as the screen-devices children and young people engage with become more numerous and portable. The diverse and multi-tasking nature of screen-based sedentary activities (e.g., a child texting on their phone, while watching television and playing a game on their tablet)<sup>120</sup> needs to be considered when developing future research methodologies.

### How to collect the data

Given the complex nature of sedentary behaviour (similarly complex to that of physical activity behaviour) it is important that standardised methodologies for both objective and subjective measures be considered.

Objectively, standardised data collection and analysis protocols should be used for various measurement tools (accelerometers and inclinometers for measures of sitting time [e.g., activPAL]), such that:

**Children are monitored for at least 3 days but ideally they would be monitored for 7 days.<sup>121</sup> Researchers should report sedentary time (e.g., minutes spent sedentary) and patterns of sedentary behaviour (e.g., bout times) for each day (that data were collected on) and as a daily average.**

The proposed self-report questions that should be employed are:

1. **On how many days, during the past 7 days, were you/ your child engaged in screen-based activities (all forms e.g., watching television, using tablets, computers or smartphones, or playing electronic games) for entertainment for less than 1 or 2\* hour/s per day?;**
2. **On how many days, during the past 7 days, was your child (aged less than 2 years) exposed to any form of screen-based activities (all forms e.g., watching television, using tablets, computers or smartphones, or playing electronic games)?; and**
3. **On how many days, during the past 7 days, was your child (0–5 years only) kept inactive or restrained (e.g., stroller, high chair, car seat) for more than 1 hour at any time?**

*\* Different time guidelines for children and young people aged 2–4 and 5–17 years, respectively.*

While the updated national sedentary behaviour guidelines specify that children and young people aged 5–17 years should limit the total time they spend sitting and break up prolonged periods of sitting with regular breaks,<sup>8</sup> at this time there is no suggested standardised questions that should be employed for either total sitting time or prolonged bouts of sitting.

### How to operationalise the primary metric

Consistent with the current Australian recommended sedentary behaviour guidelines,<sup>8</sup> the two primary metrics proposed for sedentary behaviours are:

1. **Proportion of Australian children and young people meeting the recommended sedentary behaviour screen time guidelines\* on all 7 days of the week; and**
2. **Proportion of Australian infants/ toddlers/pre-schoolers meeting the recommended sedentary behaviour (restrained from inactivity) guidelines# on all 7 days of the week.**

*\* no exposure <2 years, ≤1 hour every day for 2–4 years and ≤2 hours for 5–17 years.  
# ≤1 hour of being inactive or restrained.*

### Sedentary behaviour guideline development

As the evidence base behind the dose-response relationships between sedentary behaviours (all types) and health outcomes builds, it is vital this is reviewed in a timely fashion to determine whether the guidelines need to be updated. This could also lead to the development of a metric that focuses on other (non-screen-based) forms of detrimental sedentary behaviour (e.g., sitting time for children and young people).



# BEYOND THE GRADE

## What do you do with your screen?

Most people today are aware of the fact that “screens’ are invading our lives—at work, while we walk, at home, on the train, bus or tram and at school. How does this translate into the time spent by young people engaged with screens, and what they are actually doing while on them?

As with overall physical activity levels, when we examine the prevalence of children meeting the national screen time guidelines as they get older, we see a decline in adherence from early childhood through to adolescence (see Figure 7).<sup>33</sup> Recent reports indicate that on average, households with children have more screens (consisting of various types both portable and fixed) than those households that do not.<sup>122</sup> Two thirds of Australian children aged 3–17 years own a smartphone, which they use for an average of 22 hours per week.<sup>123</sup> But what do Australian children and young people use screens for and how many different types of screens do they engage with?

A recent study of Australian children and young people aged 8–16 years administered an online questionnaire (Screen Based Media Use Scale) to determine how much time they spent exposed to and engaged with screens (for entertainment purposes), the types and number of screens they were exposed to and engaged with, and what they primarily did when engaged with screens.<sup>124</sup> It was reported that the proportion of children who engaged in more than 2 hours of screen activity (in total for all types) ranged from 43–92%. However, similar to that highlighted previously, the proportion exceeding the 2 hour threshold was greater in older children and higher for girls than for boys. Figure 8 then shows how sex and activity type impact on exceeding the 2 hour threshold for children in Grade 9.<sup>124</sup>

**We also need to consider whether or not they are active when using them— after all, isn’t walking with a smartphone better than lounging with one?**

We cannot expect Australian children and young people not to engage with screens, given the extent to which they are embedded in our everyday lives. However, we need to be mindful of the total time they do spend with screens (all types) and what they do when they are using them (some activities may be potentially more harmful or beneficial from a social, emotional and cognitive perspective). We also need to consider whether or not they are active when using them— after all, isn’t walking with a smartphone better than lounging with one?

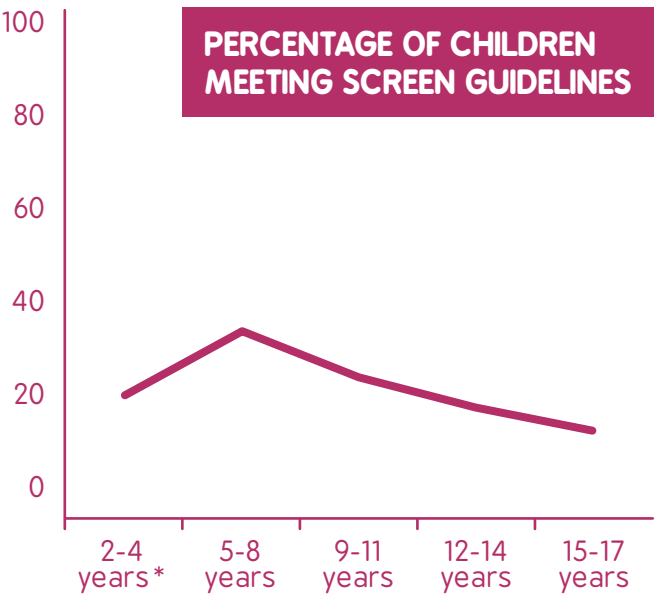


Figure 7.

Proportion of children meeting screen time guidelines across different age groups.

*Note, \* Guidelines are different to other age groups: ≤1 hour of screen time (for entertainment purposes) vs. ≤2 hours of screen time (for entertainment purposes).*

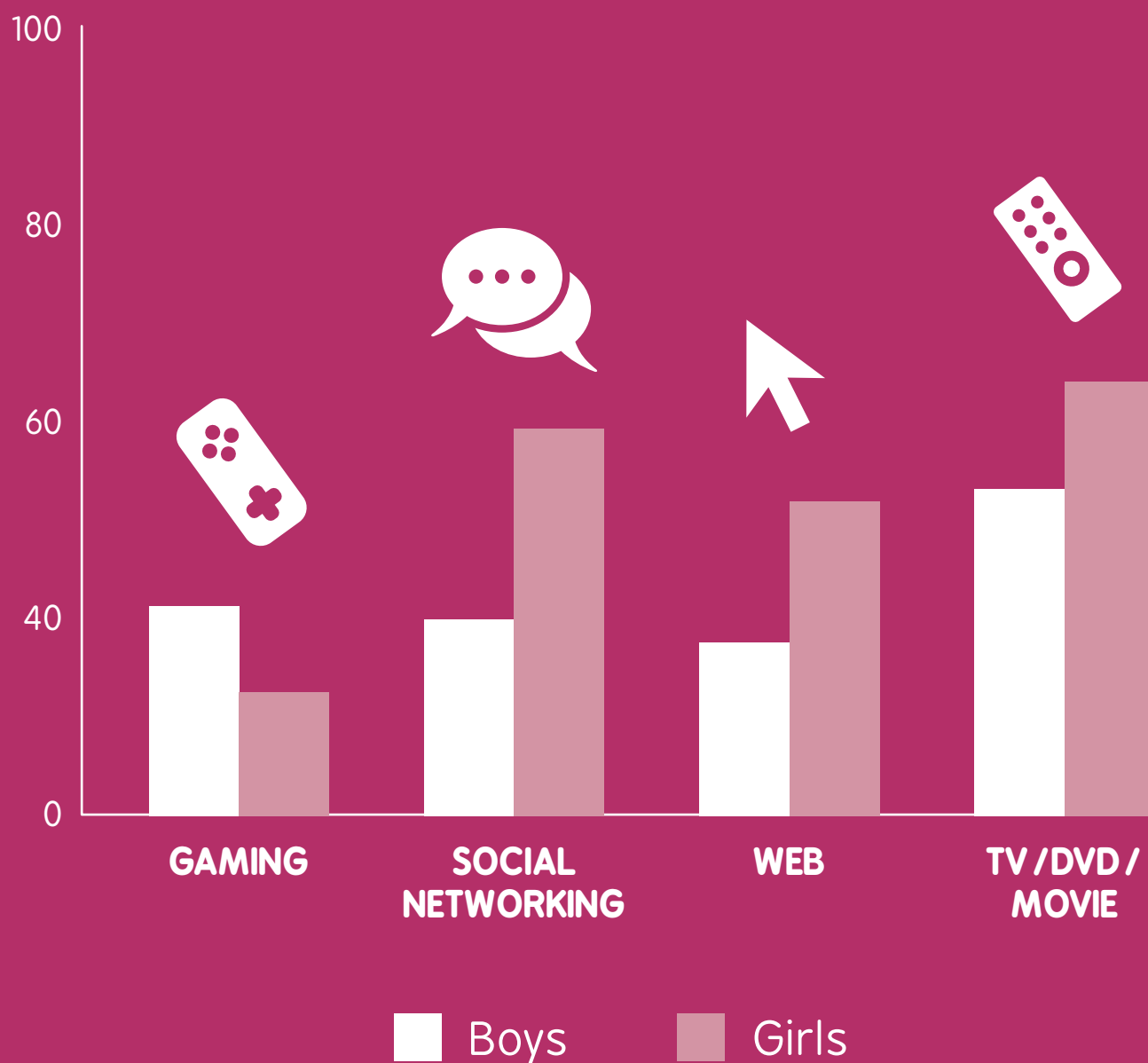


Figure 8.

Proportion of Grade 9 children exposed to screens for more than 2 hours per weekday by sex, age and activity type

*Note, this figure is based upon results from a study conducted by Houghton and colleagues that used the Screen Based Media Use Scale.<sup>124</sup> Exposure may include multi-tasking and engaging with more than one screen type at any given time.*

## FAMILY AND PEERS INFRASTRUCTURE, SUPPORT, PARENTAL/PEER BEHAVIOUR

2014

C

2016

C+

- Proportion of Australian children and young people who are reported to have at least one screen-based device in their bedroom;
- Proportion of Australian children and young people who receive some form of encouragement from their parents/caregivers to be physically active on a weekly basis;
- Proportion of Australian children and young people who receive some form of encouragement from their peers to be physically active on a weekly basis;
- Proportion of Australian children and young people who engage in 'co-physical activity'<sup>125</sup> with their parents/caregivers on a weekly basis; and
- Proportion of Australian parents/caregivers who meet the Australian physical activity guidelines: adults should take part in at least 150 minutes of moderate activity or 75 minutes of vigorous activity each week, or an equivalent combination thereof, to enhance their health.<sup>8</sup>

### Confidence Rating



#### Rationale

This year's grade was informed by new national and state/territory-based data and two additional primary metrics were included: 'co-physical activity' with parents/caregivers and encouragement from peers. Children and young people receive good support (via encouragement and being active together) from their parents/caregivers to be physically active. However, the home infrastructure (screen-based devices in bedrooms), parental role modelling (parents/caregivers meeting physical activity guidelines) and peer encouragement all need improvement.

#### Key Findings

- + National data indicate that 16% of 2–4 year-olds, 51% of 5–17 year-olds,<sup>33</sup> and 85% of 12–17 year-olds<sup>43</sup> have at least one screen-based/electronic-media device in their bedroom.
- + National data indicate that 78% and 83% of Australian children and young people aged 10–11 years and 14–15 years, respectively, watch television or have access to electronic games in their bedroom.<sup>41</sup>
- + State/territory-based data indicate that 21–44% of primary school aged children<sup>46,61</sup> and 39–74% of secondary school aged young people<sup>47,61</sup> have at least one screen-based/electronic device in their bedroom.
- + National data indicate that 75–76% of Australian young people aged 12–17 years receive at least some form of encouragement (at least once per week) from their parents to be physically active.<sup>42,43</sup>
- + State/territory-based data indicate that 82–98% of primary school aged children<sup>45,46,54</sup> and 80% of secondary school aged young people,<sup>47</sup> receive encouragement from or information about the benefits of physical activity from their parents at least once per week.
- + National and state-based data indicate that 76%<sup>54</sup> and 54–56%<sup>42,43</sup> of Australian children and young people aged 7–13 years and 12–17 years respectively, receive some form of encouragement from their friends/peers to be physically active.
- + National data from parents indicate that 79% and 60% of children aged 8–9 years and 12–13 years, respectively, play outdoors with someone at home/their parent at least once on a weekly basis.<sup>40</sup>
- + National data indicate that 22–25% of parents (with children aged 8–9 and 12–13 years) meet the national physical activity guidelines (i.e., at least 30 minutes of MVPA on at least 5 days per week),<sup>40,41</sup> with state/territory-based data indicating that 66% of parents (with children aged 16 years) report being moderately or very active on most days.<sup>47</sup>



### How can we improve the grade?

- + Families and parents need to be supported with information, programs and infrastructures at both the local, state/territory and national levels that encourage incorporating a number of different physical activities at varied intensities (i.e., light, moderate, vigorous), which support the development of physically literate children that is conducive to lifelong physical activity participation, every day.
- + Families need to be educated about the detrimental effects of engaging in excessive sedentary behaviours.<sup>113,126</sup> Families and parents need to support children to minimise their time spent sedentary and time spent engaged with screens. Having clear boundaries about screen use at home (when, where and for how long) that are established by both parents/caregivers and children<sup>117</sup> is an important action families can take to reduce screen time at home.<sup>127</sup>
- + Initiatives targeting peer support and role modelling behaviour are important so that Australian children and young people are encouraged to be physically active through the actions of those within their immediate social network (i.e., family, parents, friends and peers).<sup>127</sup>

### What do we need to know?

- + Important research pursuits include: an exploration into the patterns of family behaviour (i.e., the frequency and duration of bouts spent engaged in physical activity and sedentary behaviour); which patterns provide the 'right' type of support for physical activity participation; and whether these patterns are meaningfully linked with key health outcomes.
- + Research that looks to unpack the social networks of Australian children and young people and the influence they have is vital to understand the potential impact of these networks on physical activity participation.
- + The prevalence of parents/caregivers meeting physical activity guidelines is important when considering role modelling behaviour. Such outcomes should be built into the national data collection cycle, with further exploration into why parents are/are not meeting the guidelines also warranted.

Given the complex nature of this indicator there are a number of standardised questions and primary metrics needed to assign a grade. Each of the components of this indicator is listed below with the suggested question/s and metric/s.

#### How to collect the data

Infrastructure—The standardised questions that should be employed are:

1. **Do you/does your child have at least one fixed screen-device (e.g., television, computer) in their bedroom?; and**
2. **Do you/does your child regularly have a mobile screen-device (e.g., iPad, smart phone, portable game device) in their bedroom?**

Support—The standardised questions that should be employed are:

1. **On how many days, during the past 7 days, did you receive some form of encouragement from a parent\* or siblings\*/did you give your child some form of encouragement to be physically active (e.g., "It is great that you have been playing outside more with your brother/sister this week")?; and**
2. **On how many days, during the past 7 days, did you receive/did you give some form of encouragement from/to your friends or peers to be physically active (e.g., "It's great we are riding to school together from now on")?**

Parental/peer behaviour—The standardised questions that should be employed are:

1. **On how many days, during the past 7 days, did you engage in moderate (leaving you somewhat tired) and/or vigorous (leaving you substantially tired) physical activity? Question directed at parents\*;**
2. **During the past 7 days, how much moderate (leaving you somewhat tired) and/or vigorous (leaving you substantially tired) physical activity did you engage in (total amount in minutes)? Question directed at parents\*;**
3. **On how many days, during the past 7 days, were you physically active with a parent\* or sibling\*/with your child?; and**

4. **On how many days, during the past 7 days, were you physically active with a friend or peer?**

#### How to operationalise the primary metrics

Infrastructure—The primary metrics used to assess the component of infrastructure for this indicator should be:

1. **Proportion of Australian children and young people with at least one fixed screen-device in their bedroom; and**
2. **Proportion of Australian children and young people who regularly have a mobile screen-device in their bedroom.**

Support—The primary metrics used to assess the component of support for this indicator should be:

1. **Proportion of Australian children and young people who receive some form of encouragement from their parents\* or siblings\*/friends or peers to be physically active at least once per week; and**
2. **Proportion of Australian children and young people who give some form of encouragement to their friends or peers to be physically active at least once per week.**

Parental/peer behaviour—The primary metrics used to assess the component of parental/peer behaviour for this indicator should be:

1. **Proportion of Australian parents\* meeting the recommended physical activity guidelines\*;** and
2. **The proportion of Australian children and young people whose parents\* or siblings\*/friends or peers engage in co-physical activity with them at least once per week.**

*\* Parent represents the individual who cares for the child on a permanent basis (i.e., mother or father, caregiver, guardian, grandparent, other relative). Sibling represents any child or young person who lives permanently with the child (i.e., cousin, brother or sister, foster sibling).*

*# At least 150 minutes of moderate, 75 minutes of vigorous, or an equivalent combination of both moderate/vigorous physical activities each week.*

## BEYOND THE GRADE

### How many 'friends' do our kids really have?

With one third of Australian children aged 5–14 years visiting or using social networking sites (5–8 years: 4%; 9–11 years: 21%; 12–14 years: 67%),<sup>35</sup> a child's social network can now include hundreds (dare we say thousands) of 'friends' and we wonder just how much of an impact they can have on a child's behaviour?

Online social networks, including Facebook, Twitter, Instagram, YouTube and online gaming groups, bombard children and young people with a vast array of information, social interactions and personal feedback that is immediate and can impact how they choose to spend their time.<sup>128,129</sup> How can we then harness this power in a positive way—need we mention 'Pokemon Go'?

One way to understand this more is to look at how researchers examine the impact of social media on changing health behaviours.<sup>130</sup> Via social networks a child can interact with their individual friends (of whom they may know personally or not), the groups they 'join' or 'follow' plus specific applications (built with-in social media platforms like Facebook).<sup>130</sup> Within these interactions things that may influence their behaviour include: interest in a topic/idea (e.g., followers or likes); support for change (e.g., encouraging comments or providing positive ideas); credibility (e.g., language used and ideas shared); and engagement (e.g., posting videos, invites, polls or questions)<sup>130</sup> (see Figure 9).

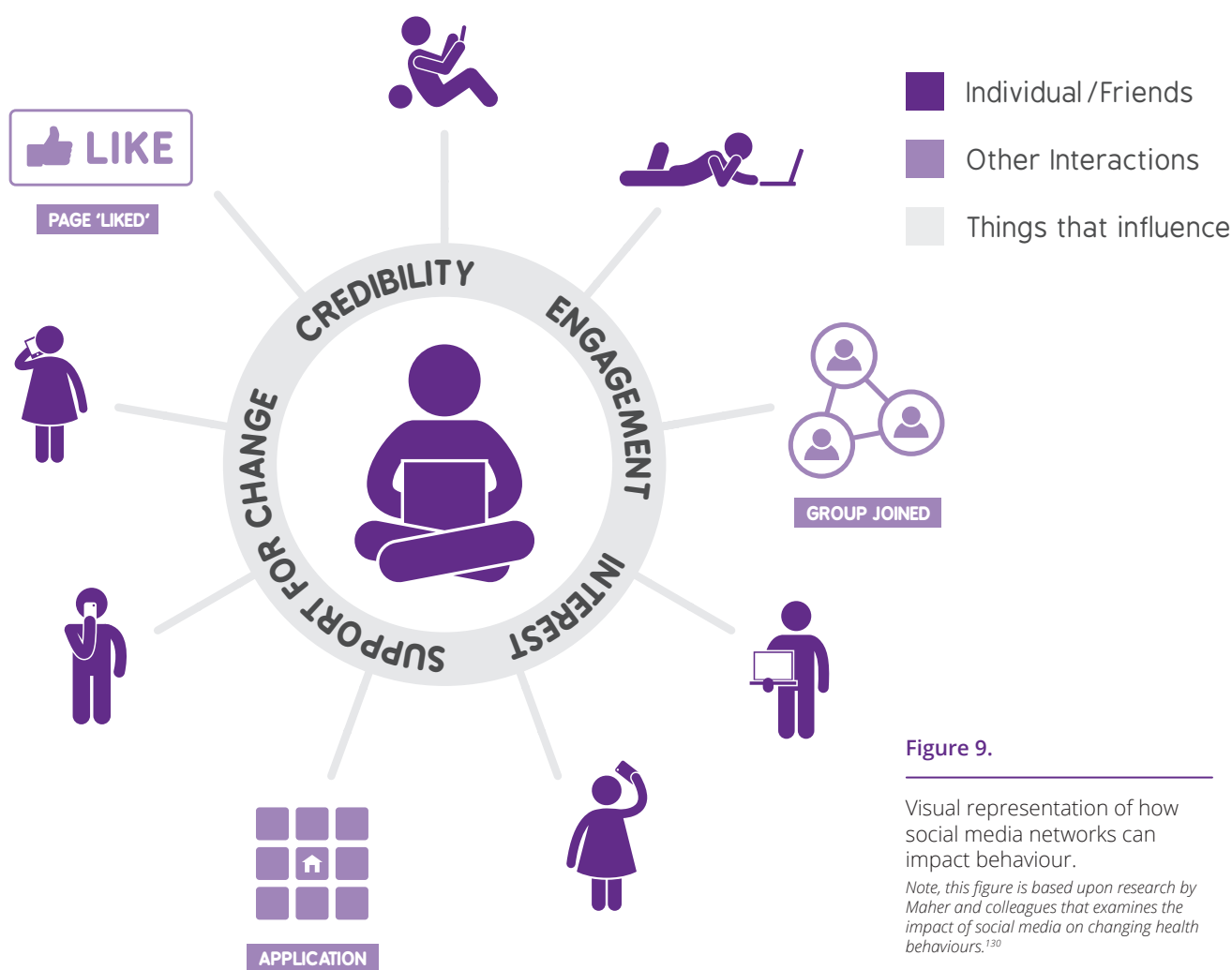


Figure 9.

Visual representation of how social media networks can impact behaviour.

*Note, this figure is based upon research by Maher and colleagues that examines the impact of social media on changing health behaviours.<sup>130</sup>*

Given a child's 'friend' list has the potential to increase exponentially as the popularity of online social networks grows, we should be mindful of the ways these interactions can have a positive impact on a child's activity levels. To harness the full positive effect of such interactions, open (and in-person) discussions with significant others (e.g., parents, teachers, friends, siblings, coaches) should be encouraged so children and young people remain critical rather than 'liking' everything that hits their newsfeed.



**To harness the full positive effect of such interactions, open discussions with significant others should be encouraged**



## SCHOOL INFRASTRUCTURE, POLICIES AND PROGRAMMING

2014  
B-

2016  
B-

- Proportion of schools that have a specialist physical education teacher to take physical education lessons;
- Proportion of schools that schedule the delivery of at least 150 minutes of physical education per week to students\*;
- Proportion of schools that have physical activity facilities/equipment available to students to use during school hours; and
- Proportion of schools allocating at least 60 minutes per day for children to be active at recess and lunchtime.

\* Previously this primary metric was: "Proportion of schools that schedule the delivery of at least 120 minutes of physical education per week to students".

### Confidence Rating



#### Rationale

New national data were available for this indicator; an additional primary metric was considered (allocating at least 60 minutes per day for students to be active at recess and lunch) when assigning this year's grade; and a change to one of the previous metrics was made (increasing the benchmark for amount of physical education and organised physical activity delivered from 120 to 150 minutes occurred to align with international benchmarks and to reflect a shift in policy across some Australian states and territories). However, there has been no change in the grade from 2014 with the overall grade (B-) reflecting that the majority of metrics were scored in the A to B range.

#### Key Findings

- + National data, as reported by teachers, indicate that 72% of primary school students and 98% of secondary school students have access to a specialist physical education teacher. However, there was no indication of their level of qualification, whether they taught the scheduled physical education classes to all students or whether they were employed full-time by the school or an external provider.<sup>41</sup>
- + National data indicate that secondary schools employ (full-time) on average at least 5 specialist physical education teachers, but there was no indication of their level of qualification and whether they taught the scheduled physical education classes to all students.<sup>43</sup>
- + State-based data indicate that 35% and 57% of secondary schools (urban and rural respectively) and 27% of primary schools (same proportion for urban and rural) report having a specialist physical education teacher who delivers physical education classes, but there was no indication of the level of qualification attained.<sup>61</sup>

- + National data indicate that 33% of primary schools<sup>41</sup> and 8% of secondary schools<sup>43</sup> provide at least 150 minutes of physical education per week to students.
- + Secondary schools report providing, on average, 80 minutes of physical education per week to students.<sup>43</sup>
- + State-based data indicate that 13–20% of primary schools and 71–74% of secondary schools provide at least 150 minutes of physical education and school sport per week to students.<sup>61</sup>
- + Both national and state-based data indicate that the availability of physical activity facilities and equipment during school hours (as reported by school staff) is considered to be quite good at both primary (33–100% of schools have various facilities/equipment available)<sup>46,61</sup> and secondary schools (45–98% of schools have various facilities/equipment available).<sup>40,43,61</sup>
- + National data indicate that 82% of secondary schools allocate at least 60 minutes (combined) for recess and lunchtime breaks each day.<sup>43</sup>

#### How can we improve the grade?

- + All schools need to ensure they have comprehensive whole school physical activity policies in place that outline ways to encourage and engage students in physical activity throughout the entire school day (i.e., not just during formal physical education classes but during class lessons and by using 'energiser' breaks) to promote physical, mental, social and academic benefits.<sup>98,127,131</sup> This should be developed in consultation with teachers, parents and students and reviewed over the course of a school year.

## What do we need to do?

- + Comprehensive school physical activity programs,<sup>132,133</sup> that include curricular and non-curricular physical activity promotion elements provide a proof of concept that schools can implement to increase activity levels across the school day. This should be supported with classroom teachers (at both primary and secondary schools) engaging in continual development that explores how they can engage children and young people in physical activity.
- + Primary and secondary schools need to provide an adequate amount of organised physical activity (i.e., physical education and school sport) to all students, that is administered by specialist physical education teachers (employed on a full-time basis) with the appropriate tertiary education (i.e., a specific physical education program)<sup>85,88,134,135</sup> and is continually evaluated to ensure quality and the engagement of students.
- + We need to ensure that Australian primary and secondary schools continue to allocate adequate time each day for recess and lunch breaks<sup>136</sup> during which time students can be and are encouraged and supported to be active in play spaces that engage.<sup>127,137</sup>

## What do we need to know?

- + Research that explores the quality of physical education (at both primary and secondary schools) is important as we need to understand to what extent students are engaged, how active they are and what aspects need to be addressed and/or modified.
- + Further exploration is required into school physical activity policies and the impact they have on the amount, intensity and quality of physical activity students engage in throughout the day (including activity engaged in during recess and lunch, physical education classes, lesson times and lesson breaks) as well as how they are implemented and then how this is evaluated.<sup>138</sup>
- + We need to unpack the reasons why school physical activity facilities and equipment do or do not get used during the school day and ways to engage students such that they use the equipment/facilities they have access to.
- + At present there are no population-representative data that explore the physical activity infrastructures, policies and programs in preschool, early learning and childcare settings. This needs to be addressed.

Given the complex nature of this indicator there are a number of standardised questions and primary metrics needed to assign a grade. Each of the components of this indicator are below with the suggested question/s and metric/s.

### How to collect the data

In order to capture a complete population-representative picture of both primary and secondary schools, and their impact or potential impact on physical activity participation, it is recommended that:

**A national audit of primary and secondary schools that collects information on infrastructure, policies and programming (i.e., the standardised questions suggested below plus any additional to capture other elements important to physical activity participation) be commissioned at the federal level.**

**Infrastructure**—The standardised question that should be employed (directed at children, school staff or as part of an audit) are:

**If available, do you/students have access to a gymnasium (or indoor play space)/outside sports field (or grassed area)/hard court (or paved area)/playground/sports (or physical activity) equipment\* during school hours (but outside of scheduled physical education classes)?**

**Policies**—The standardised questions which should be employed (directed at school staff or as part of an audit) are:

1. Does the school employ at least one tertiary qualified physical education specialist teacher on a full-time basis?;
2. Does a tertiary qualified physical education specialist teacher deliver all scheduled physical education classes and organised school sport# activities for all students?;
3. How much scheduled physical education and organised school sport# activities are delivered to all students on average every week (in minutes)?; and
4. How much time is allocated to recess and lunch time (combined) every day (in minutes)?; and
5. During recess and lunch time (combined) how much time are children able to be active if they choose (in minutes)?

**Programming**—The standardised questions that should be employed (directed at students, school staff or as a part of an audit) are:

1. Does your school offer physical activity/sports programs to all students outside of their formal physical education classes but during school hours?; and

2. Does your school offer physical activity/sports programs to all students outside of school hours (e.g., Sporting Schools)?

### How to operationalise the primary metrics

**Infrastructure**—The primary metric used to assess the infrastructure component of this indicator should be:

**Proportion of schools that allow students to use during school hours (if available but outside of scheduled physical education classes) a gymnasium (or indoor play space)/outside sports field (or grassed area)/hard court (or paved area)/playground/sports (or physical activity) equipment\*.**

**Policies**—The primary metrics used to assess the policies component of this indicator should be:

1. Proportion of schools that employ at least one tertiary qualified physical education specialist teacher on a full-time basis;
2. Proportion of schools that have a tertiary qualified physical education specialist teacher deliver all scheduled physical education classes and organised school sport# activities for all students;
3. Proportion of schools that deliver at least 150 minutes per week of scheduled physical education classes and organised school sport# activities to all students, for which physical education and/or organised school sport# activities are compulsory; and
4. Proportion of schools that allocate at least 60 minutes for recess and lunch time (combined) every day, during which time students are able to be physically active if they choose.

**Programming**—The primary metrics used to assess the programming component of this indicator should be:

1. Proportion of schools that offer additional physical activity/sports programs to all students outside of their formal physical education classes but during school hours; and
2. Proportion of schools that offer additional physical activity/sports programs to all students outside of school hours;

*\* For each question and metric an individual answer and proportion should be reported for each facility/equipment listed and/or available.*

*# School sport is defined as organised sporting activities (both intra- and inter-school based competitions) that occur during school start and finish times.*



## BEYOND THE GRADE

### *Numeracy, Literacy...Physical Literacy?*

Developing the 'tools' of Physical Literacy for all Australian children and young people requires support, facilitation, guidance and encouragement from everyone, but one may ask how does this translate into the school environment?

From the beginning we need to be mindful of the ever increasing pressures on teachers to tick a vast number of boxes that encompass all subject areas and learning outcomes. Therefore it is important that they are supported through professional development and equipped with the resources they need to support the development of children's physical literacy into their everyday teachings.

**We need to be mindful of the ever increasing pressures on teachers to tick a vast number of boxes that encompass all subject areas and learning outcomes**

The NSW Department of Education has highlighted the need to "increase the quality of learning opportunities for students" through physical activity done in schools as a part of their Personal Development, Health and Physical Education (PDHPE) and School Sport (see Figure 10).<sup>139</sup> They also acknowledge that a student's level of Physical Literacy can have impact in broader contexts and not just those restricted within the scheduled class times of PDHPE and School Sport.

In consultation with academics from across NSW the NSW Department of Education developed the Physical Literacy Continuum K-10, which is a resource for teachers that aims to further develop their skills, confidence and knowledge in regards to delivering purposeful and engaging physical activity to all students.

The Physical Literacy Continuum provides teachers with a framework to guide them when evaluating a student's Physical Literacy journey throughout their school years. It therefore helps teachers identify where adjustments should be made within specific programs of learning in order to continue seeing movement along the continuum for each student. More information regarding the Physical Literacy Continuum can be sourced from <https://education.nsw.gov.au/curriculum/pdhpe>.

**...a student's level of Physical Literacy can have impact in broader contexts and not just those restricted within the scheduled class times of Personal Development, Health and Physical Education and School Sport**

So while there are many considerations when embedding Physical Literacy within a school environment,<sup>32,140</sup> it is encouraging to see that work is being done to support teachers to do so.

At time of writing the Australian Sports Commission had engaged with an expert panel of academics (working in and around Physical Literacy), which included representatives from AHKA, to develop a National Physical Literacy Standard that can be applied within specific contexts, including schools, that provides a framework to identify the different learning stages of Physical Literacy and the physical, social, emotional and cognitive capabilities that an individual may exhibit in these stages. The Standard will help identify an individual's current Physical Literacy capabilities and identify strategies for development. For further information please visit the Australian Sports Commission website: [www.ausport.gov.au](http://www.ausport.gov.au) or contact: Penny Carlson, [penny.carlson@ausport.gov.au](mailto:penny.carlson@ausport.gov.au)



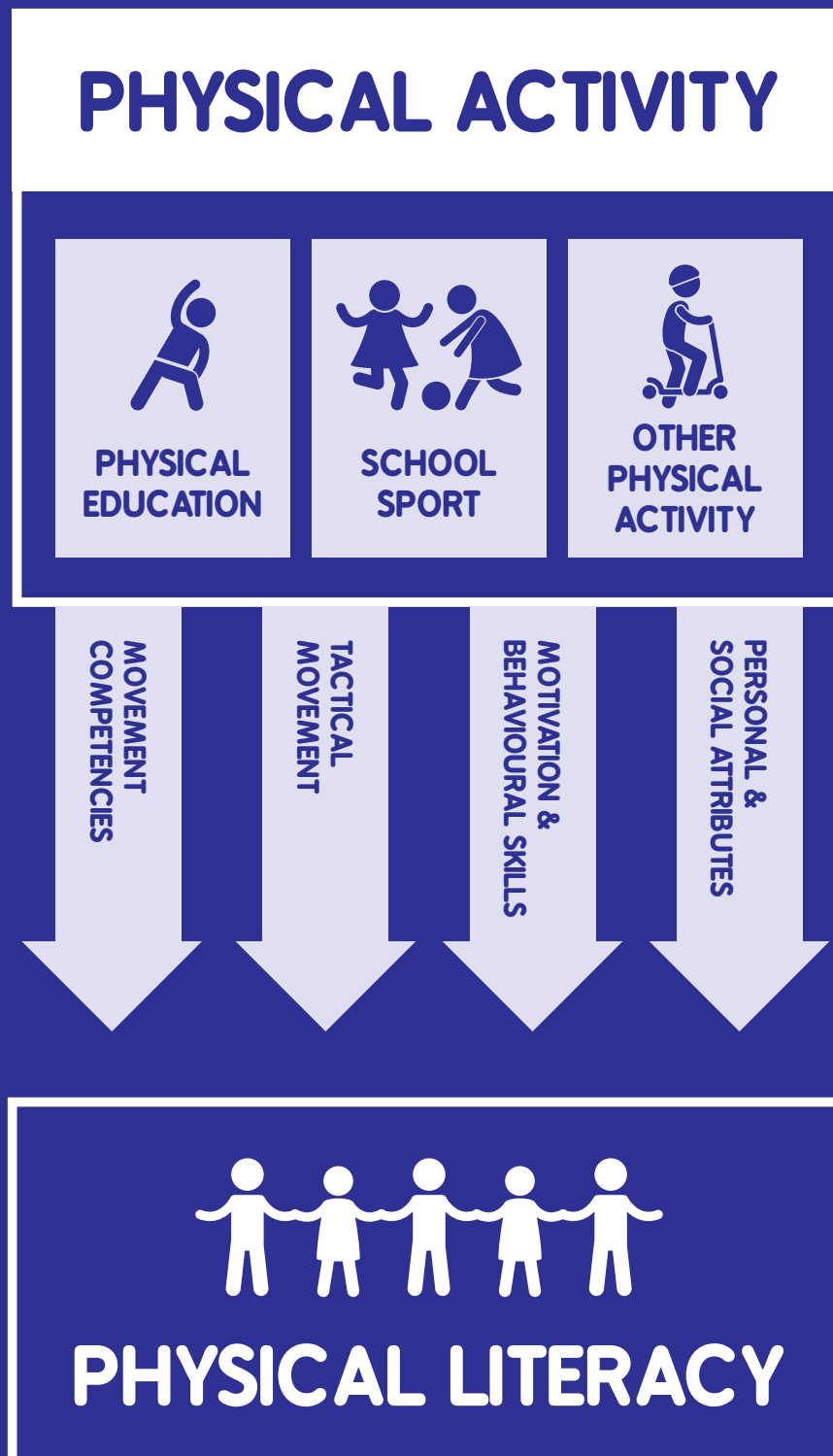


Figure 10.

Visual representation of Physical Literacy and how it is embedded within schools.  
*Note, this figure is based upon one which is accessible from the NSW Department of Education Website under the Physical Literacy Continuum section.*<sup>139</sup>

## COMMUNITY & THE BUILT ENVIRONMENT

### INFRASTRUCTURE, POLICIES, PROGRAMS & SAFETY

2014

A-

2016

A-

- Proportion of Australian children/parents who report a playground or play space near to their home;
- Proportion of Australian parents/children/teachers who report heavy/problem traffic not to be an issue in their home or school neighbourhood;
- Proportion of Australian children/parents who report their neighbourhood to be safe;
- Proportion of Australian children/parents who report they have good roads/footpaths in their neighbourhood; and
- Proportion of Australian children/parents who report they have access nearby in their neighbourhood to public transport.

#### Confidence Rating



#### Rationale

New national and state/territory-based data were available to inform the grade this year, with new primary metrics included to give greater clarity. All metrics, as they were in 2014, were graded highly (B+ to A+) and as such there was no change to the overall grade.

#### Key Findings

- + National data indicate that 85–86% of Australian parents (with children aged 10–11 years or 14–15 years)<sup>41</sup> and 76% of young people aged 12–17 years<sup>43</sup> report having a playground that they/their children can access near to their home.
- + State-based data indicate that 86% of parents report having a playground that they/their children can access near to their home.<sup>62</sup>
- + National data indicate that 76% of parents (with children aged 10–11 years or 14–15 years)<sup>41</sup> report that heavy/problem traffic is not an issue in their neighbourhood.
- + State-based data support this with 62–76% of parents and children also reporting heavy/problem traffic not to be an issue.<sup>46,54,57</sup>
- + National data indicate that 96% of parents (with children aged 10–11 years or 14–15 years)<sup>41</sup> and 71% of young people aged 12–17 years<sup>43</sup> agree that their neighbourhood is safe. State/territory-based data indicate that 92–96% of parents and young people also agree that their neighbourhood is safe.<sup>47,59,62,63</sup>
- + National data indicate that 75–77% of parents (with children aged 10–11 years or 14–15 years) agree that their neighbourhood has good roads and footpaths and that they have access to public transport in their neighbourhood.<sup>41</sup>

#### How can we improve the grade?

- + While Australia has the infrastructure in place, it is important that connectedness between facilities and infrastructures is

considered during the development and planning stage so children and young people can move from place to place easily and without restriction.<sup>98</sup>

- + Any land currently not being used effectively should be considered by local, state/territory and federal councils/governments as places where potential 'pop-up' parks and play/activity spaces, that are innovative, functional and encourage lifelong participation for all, can feature.<sup>127</sup>
- + We need to ensure the facilities and infrastructures that are available to the public are well maintained, accessible, and take into consideration the different abilities, interests and motivations of all Australian children and young people. The planning and development of these places should be in consultation with people representing various sectors (e.g., children and young people, schools, families, communities, sporting clubs, councils, and government).<sup>127</sup>

#### What do we need to know?

- + While we know that Australia boasts a large number of accessible parks and play/activity spaces, it is important to understand whether these places are being used, how and when they are being used, and what could be done to improve the usability of such places.
- + To help inform decisions about the built environment, we need to better understand what parents and children and young people think are important in terms of the green spaces and facilities within their community that encourage physical activity.
- + Research that investigates programs delivered by various providers in local parks and play/activity spaces, who uses them, and how often, will add additional clarity to this indicator.

## What do we need to do?

Given the complex nature of this indicator, there are a number of standardised questions and primary metrics needed to assign a grade. Each of the components of this indicator are reported below with the suggested question/s and metric/s.

### How to collect the data

In order to capture a complete population-representative picture of community and the built environment, and its impact or potential impact on physical activity participation, it is recommended that:

**A national audit of environments that collects information on connectedness, access to, and quality of spaces, should be commissioned at the federal level.**

Infrastructure—The standardised questions that should be employed (directed at parents or children) are:

1. Is there a playground/park/sports field or facilities/public transport\* within walking distance of your home?; and
2. Within my local neighbourhood there are good roads and footpaths to support active transport—strongly disagree, disagree, neutral, agree, strongly agree.

Programs—The standardised question that should be employed is:

**My local neighbourhood offers physical activity programs (delivered by community providers and accessed through the local community) suitable for me/my child—strongly disagree, disagree, neutral, agree, strongly agree.**

Safety—The standardised questions that should be employed are:

1. Heavy or problem traffic is not a concern in my/my child's neighbourhood/school neighbourhood\*—strongly disagree, disagree, neutral, agree, strongly agree;
2. There are safe crossings for me/ my child to use if I/they used active transport to travel to school/local playground/local park/local shops/local sports field or facilities\*—strongly disagree, disagree, neutral, agree, strongly agree; and
3. My parents#/I prevent me/my child from being physically active outdoors in our community, on my/their own or with friends, because of safety concerns—strongly disagree, disagree, neutral, agree, strongly agree.

*# Parent represents the individual who cares for the child on a permanent basis (i.e., mother or father, caregiver, guardian, grandparent, other relative).*

Policy—Currently there is no consistent method for assessing relevant policies, so at present no standardised question is recommended and this should be a research priority in this area.

### How to operationalise the primary metric

Infrastructure—The primary metrics used to assess the infrastructure component of this indicator should be:

1. Proportion of Australian children and young people who have a playground/park/sports field or facilities/public transport\* within walking distance of their home; and
2. Proportion of Australian children and young people who have good

**roads and footpaths to support active transport within their local neighbourhood—some level of agreement.**

Programs—The primary metric used to assess the programs component of this indicator should be:

**Proportion of Australian children and young people who are offered suitable physical activity programs (delivered by community providers and accessed through the local community) within their local neighbourhood—some level of agreement.**

Safety—The primary metrics used to assess the safety component of this indicator should be:

1. Proportion of Australian children and young people for whom heavy or problem traffic is not a concern in their neighbourhood/school neighbourhood\*—some level of agreement;
2. Proportion of Australian children and young people who have safe crossings to access if they use active transport to travel to school/local playground/local park/local shops/local sports field or facilities\*—some level of agreement; and
3. Proportion of children/parents who are prevented/who prevent their child from being physically active outdoors in their community, on their own or with friends, because of safety concerns— some level of agreement.

*\* For each question and metric an individual answer and proportion should be reported for each item.*

Policy—No primary metric is recommended at this time.



## BEYOND THE GRADE

### *The long forgotten play spaces...*

The 2014 Report Card highlighted that as a nation, and compared to the rest of the world, we grade very well with regard to environmental infrastructures that support physical activity participation.<sup>9,10</sup> This is still evident in this year's Report Card and similar to 2014, despite having good infrastructures in place, this fails to translate into a meaningful increase in the proportion of children and young people accumulating the recommended amount of physical activity every day. If we are building it, why are they not coming?

We could look at this from different perspectives. In the first instance, as is the theme of this year's Report Card, do our children and young people have all the 'tools' they need to engage in physical activity for life? If they do not, maybe it is these missing 'tools' that are critical to support children engaging with the spaces within their immediate and wider community.<sup>28,31</sup> Secondly, perhaps the spaces within a child's community fail to ignite imagination, creativity and inspiration to be active; perhaps kids are bored and perceive the spaces in their community to be of low quality relative to what they want to interact with.<sup>141–143</sup>

How can we reinvigorate some of the 'forgotten' spaces within the community? One answer is the introduction of 'pop-up' parks or play spaces that can adapt as the needs and wants of the local community change.<sup>144</sup> These spaces typically do not require much equipment or funding to be allocated, but they do provide an opportunity to really listen to the children of local communities and to cater to a wide range of interests and abilities. Beyond providing a fun and engaging space in which children can be active, 'temporary' or 'pop-up' spaces also provide somewhere for children to engage with their local community.<sup>144</sup> So perhaps we need to be more creative about how we use space within the community and learn lessons from some great initiatives already in place, and maybe the first people we need to talk to are the children about what they really want.




**Figure 11.**

Moubray Street 'Before' (left-side) and 'After' (right-side) the Moubray Street 'Pop-Up' Park was created.

*Note, The Moubray Street 'Pop-Up' Park, located in Albert Park, was an initiative of the City of Port Phillip (Victoria), which originally began as a trial play space that was created through a temporary road closure in 2013. Given the popularity of the park in 2015 the City of Port Phillip decided to make the 'Pop-Up' park permanent.<sup>145</sup>*

Before image, Source: "Moubray Street, Albert Park." 37o50'32.50 S and 144 o57'07.53' E. **Google Earth.** January 2, 2010. October 18, 2016

After image, Source: "Moubray Street, Albert Park." 37o50'32.50 S and 144 o57'07.53' E. **Google Earth.** April 25, 2016. October 18, 2016

A photograph of two young girls playing on a playground slide. The girl in the foreground, wearing a pink shirt, is lying on her back with her arms raised and a wide, joyful smile. The girl behind her, wearing a black shirt, is also smiling and looking upwards. The background is blurred, showing green foliage and parts of the slide structure.

**We need to be more  
creative about how we  
use space within the  
community and learn  
lessons from some great  
initiatives already in place**



## GOVERNMENT STRATEGIES AND INVESTMENTS

2014

C+

2016

D

- Review of major government (federal, state/territory, local) initiatives that were implemented or removed since the last Report Card;
- The amount of money committed by the government (federal, state/territory, local) to various physical activity endeavours, initiatives and organisations; and
- Evaluating the work of non-government organisations.

### Confidence Rating

N/A

### Rationale

There has been a substantial decline in the grade assigned for this indicator. Since the release of the 2014 Report Card, the Australian Government has removed some major positive initiatives and introduced others with more limited potential. No commitment to an overarching national plan or strategy has been made, which would forge a united way forward to get more Australian children and young people sufficiently active. Many non-government-organisations (NGOs) continue to work tirelessly in this space which was considered when assigning the final grade.

### Key Findings

There were a number of factors that were considered when assigning a grade to this indicator. The following reflects the key considerations discussed when assigning the grade:

- + Currently 37 countries have established a national physical activity plan and another 69 include physical activity in their plans for preventing non-communicable diseases.<sup>146</sup> Of the 37 countries with established national physical activity plans, 14 of those countries are a part of the Active Healthy Kids Global Alliance. Australia is yet to make the same commitment, which means without an overarching plan/strategy it is hard to develop, coordinate and sustain the multi-sectoral links required to see real improvement in the overall physical activity levels of Australian children and young people.
- + Despite Australia not having a national physical activity plan or strategy, each state and territory, through various government departments and organisations, continue to promote and facilitate various campaigns, programs, initiatives and policies that encourage activity for all (see the Showcase pages from page 50).
- + The 2014 Report Card featured the National Partnership Agreement on Preventative Health,<sup>147</sup> as one of the positive initiatives being implemented by the Federal Government. However, this initiative has since been removed. The purpose of the agreement was to create opportunities for establishing initiatives within specific settings (e.g., workplaces, childcare settings, communities etc.) to lay the foundations for the adoption of healthy lifestyle behaviours among all Australians.
- + Older state-based data indicate that approximately one third of parents<sup>50,56,61</sup> and one out of five young people<sup>61</sup> do not know what the recommended national physical activity guidelines for children and young people are. Data also show that 52–78% of parents<sup>50,56,61</sup> and 47% young people<sup>61</sup> are aware of what the recommended national sedentary behaviour screen time guidelines are.
- + Since the release of the 2014 Report Card, the 'After Schools Sporting Communities' program has ceased, replaced by the new 'Sporting Schools' initiative.<sup>148</sup> Sporting Schools is an initiative developed and coordinated by the Australian Sports Commission, which in partnership with more than 30 national sporting organisations, aims to help schools increase children's participation in sport by fostering positive links between schools, their students and sport providers. However, consideration needs to be given as to how we can better embed Sporting Schools in a more holistic way such that it appeals to all Australian children and young people with varied physical, social, emotional and cognitive capabilities while also helping to develop their Physical Literacy 'toolkit'.



- + Through the Department of Health, the Australian Government have launched an initiative, 'Girls Make Your Move',<sup>149</sup> which targets young girls (aged 12–19 years) through mass media campaigns (e.g., social media, television advertisements etc.) in an attempt to spark their interest in physical activity participation across a variety of activities. Because young girls, typically report low physical activity participation levels relative to their male peers,<sup>118,150</sup> programs targeting increased female participation are much needed. There is a strong body of evidence that suggests mass media campaigns are effective in changing community knowledge, attitudes and beliefs when they are based on theory, implemented in an ongoing way and with sufficient target audience reach. Media campaigns are also most effective when implemented as part of a comprehensive social marketing approach, rather than media in isolation. Such campaigns can result in significant shifts in the above measures as well as modest changes in behaviour.<sup>151–153</sup> Conversely, one-off campaigns are not effective. Therefore, while the response to the campaign has been generally positive, the resources and support structures that underpin it may limit the on-ground effectiveness.<sup>154</sup> Consideration as to how the campaign can also encourage and support girls develop their Physical Literacy is also important with regard to lifelong physical activity participation.
- + Following the release of the 2014 Report Card, new national physical activity campaigns, initiatives and programs have been introduced. However there is a need for greater transparency regarding how such government initiatives and programs were/are implemented and subsequently will be or have been evaluated. Without this clarity, the resulting benefit will be unknown and we cannot be confident that the funding directed into this space by government is targeting the 'best buys' for health benefits.
- + As was highlighted in the 2014 Report Card, there continues to be outstanding commitment from non-government organisations, such as the National Heart Foundation of Australia, the Australian Cancer Council and the Confederation of Australian Sport, to improve the health of all Australians. The National Heart Foundation of Australia has been an instrumental advocate and coordinator for the implementation of a funded national physical activity plan, through initiatives such as the 'Blueprint for an active Australia'<sup>155</sup> and the 'Move more, Sit less Canberra Communiqué'.<sup>156</sup>

## How can we improve the grade?

- + It is imperative that the Australian Government implements a funded national physical activity plan/strategy that is based on the best available evidence, targets multiple sectors and is developed in consultation with experts from each of the various sectors. This will ensure that moving forward, Australia has an overarching plan that will guide and unite our actions with the aim of increasing the overall activity levels of all Australians.
- + It is vital that the Australian public be aware of the recommended national Physical Activity and Sedentary Behaviour Guidelines<sup>8</sup> and the minimum amount of physical activity recommended to achieve health benefits. This awareness needs to occur via targeted approaches (e.g., support given to local organisations such as sporting clubs and general practitioners to provide information and advice) in conjunction with national messaging campaigns.<sup>98</sup>
- + We need to establish better connections across multiple sectors—at the national, state/territory, and local levels—so the right information is being collected and used appropriately to create a strong evidence base for the development of future programs, policies and initiatives.
- + In an Olympic year, we should harness the potential of our Australian athletes to inspire and motivate our children and young people to engage in more physical activity. However, we should also be mindful of the funding directed at elite athlete development versus supporting grassroots programs, policies and initiatives that facilitate and encourage physical activity participation for all.
- + We need to ensure that adequate funding is committed to the evaluation and monitoring of programs, policies and initiatives that are implemented. This will allow Australia at a national, state/territory and local level to identify which investments are the most effective and sustainable, and what is the 'best buy' for real change.
- + Cross-pollination and the sharing of success stories needs to be encouraged across sectors and jurisdictions. This will allow for efforts and funding to be directed into more policies, programs and initiatives that have been shown to have positive effects on activity levels and for further advancements to be made much more quickly.

## What do we need to know?

- + Canada recently released the first ever 24-hour activity guidelines which include recommendations around the amount of MVPA, light activity sedentary activity and sleep children and young people aged 5–17 years should engage in every day.<sup>68</sup> In light of this, it is important that we continue to evaluate the evidence regarding the dose-response relationships between physical activity, sedentary behaviours and health outcomes and it is suggested that we look to review and update (if the evidence supports) our national Physical Activity and Sedentary Behaviour Guidelines<sup>8</sup> every 5 years.
- + Evaluation of all key government strategies and initiatives and transparent reporting by federal, state/territory and local governments on how much they commit to physical activity-related infrastructure, initiatives and promotion is important so that the government can be held accountable for what it is doing.
- + A central repository of government expenditure on physical activity strategies and initiatives for children and young people is important when assessing how the government distributes its funds to different sectors.
- + National data regarding the awareness of physical activity and sedentary behaviour guidelines amongst the Australian public is important when implementing interventions, programs etc.

## What do we need to do?

Given the complexity of this indicator there is no proposed standardised methodologies, questions or primary metric.

## BEYOND THE GRADE

*It's time for Aussie Kids to 'Move More, Sit Less!'*

Authored by,

**Trevor Shilton** - Director, Cardiovascular Health, National Lead - Active Living, National Heart Foundation of Australia

**Rohan Greenland** - General Manager Advocacy, National Heart Foundation of Australia

Low levels of physical activity and high levels of screen time have placed Australia's children among the least active when benchmarked to comparable countries. This is deeply disturbing for a number of reasons. Rising rates of physical inactivity and sedentary behaviour among Australian kids pose a serious health risk for present and future generations.

Already, physical inactivity is a leading cause of chronic diseases, including cardiovascular disease, type 2 diabetes and some cancers. Unless we comprehensively address low levels of activity in our children, we have little hope that our future generations will stay active as they age, a critical factor for living long, healthy and productive lives.

Every Australian child should engage in a minimum of one hour of moderate to vigorous physical activity per day and spend less than two hours per day engaging with recreational electronic media. As a nation we fall dismally short of these standards, with eight-in-ten children failing to achieve these guidelines. These figures, and those reported in the Active Healthy Kids Report Card show just how inactive Australian children have become. Disturbingly, we have become a nation of 'couch potatoes'.

While some good things are starting to happen nationally - including additional funding for the Sporting Schools program and the commencement of the Girls Make Your Move mass media campaign - more is needed. These activities need to be extended and sustained and should form the basis of a comprehensive, national physical activity action plan to encourage and support all Australian children and their families to Move More and Sit Less!.

Australian children have a right to expect better - to receive quality physical education, to live in neighbourhoods with safe walking and cycling paths and public open spaces where they can play. Parents need support through programs and facilities in which to enrol their children and public education to provide them with knowledge and awareness of the benefits their kids will gain from moving more and sitting less.

A funded national physical activity plan can help achieve all this and more. Thirty seven other countries already have specific national physical activity plans and another 69 include physical activity in their plans for preventing non-communicable diseases (see Figure 12).<sup>146</sup> Australia is one of the few OECD nations that does not have a national plan.



**But more is needed... Simply put, we are being left behind, and the need is urgent for Australia to join other advanced nations and fund a national physical activity action plan with a central goal to get all Australian children to move more and sit less — The time for action is now**

The potential benefits would be enormous: less chronic disease, fewer heart attacks and strokes and a generation of healthier and happier children who go on to become healthier, happier adults. And, as active parents tend to have active kids, we can break the vicious spiral that is taking us down a dangerous path and turn it into a virtuous circle that promotes life-long healthy behaviours.

We acknowledge that the Australian Government has taken some important steps. But more is needed. As with tobacco control, a sustained and comprehensive approach is required. Simply put, we are being left behind, and the need is urgent for Australia to join other advanced nations and fund a national physical activity action plan with a central goal to get all Australian children to move more and sit less.

The time for action is now.



**Figure 12.**

World map showing the 37 countries who currently have a National Physical Activity Plan.

*Note, data was sourced from the Global Observatory for Physical Activity Country Cards.<sup>146</sup>*



# PHYSICAL FITNESS \*

2014  
INC

2016  
C-

Comparison of the current levels of aerobic fitness of Australian children and young people against norm-referenced international standards<sup>157</sup>.

*\*Note, this indicator was previously titled 'Aerobic Fitness' however this change was made given the importance of all components of health-related fitness<sup>158</sup>.*

## Confidence Rating



### Rationale

Last year an Incomplete grade was assigned to this indicator because nationally representative data were lacking. This limitation, however, is now reflected in the confidence rating. New state/territory-based data were available in addition to those available in 2014 with the overall grade reflecting that Australian children and young people are of below average aerobic fitness relative to their international peers.

### Key Findings

- + State/territory-based data indicate that Australian children and young people aged 9–16 years are of below average aerobic fitness (mean [95% confidence interval]: 43 percentile [33 to 53])<sup>47,60,61</sup> relative to sex-specific and age-specific international 20 m shuttle run norms from 1,142,026 children and young people from 50 countries.<sup>157</sup>

### How can we improve the grade?

- + It is recommended that children and young people accumulate at least 60 minutes of MVPA every day<sup>8</sup>. It is also important they participate in prolonged or repeated bouts of strenuous activity (such as High Intensity Interval Training [HIIT]) for real improvements in aerobic fitness.<sup>159–161</sup> It has been estimated that in children an appropriate 12-week aerobic training program will induce, on average, an 8–9% increase in aerobic fitness (independent of sex, age and maturation).<sup>162</sup>
- + The current national Physical Activity and Sedentary Behaviour Guidelines<sup>8</sup> also highlight the importance of children and young people engaging in enjoyable and age appropriate muscle (e.g., weight lifting and climbing playground equipment) and bone (e.g., running and jumping) strengthening activities on at least three days per week. This needs to be encouraged by families, schools, sporting clubs and community groups with advice provided on the appropriate types of activity with which to engage.

- + An awareness around the importance of developing and maintaining a 'healthy' level<sup>158</sup> of aerobic fitness for current and future health benefits is important for both children and parents.

### What do we need to know?

- + The 2014 Report Card highlighted that in Australia, there have only ever been two national fitness surveys of children and young people, the first in 1969–70 and the second in 1985. There still has not been a follow-up to the 1985 national health and fitness survey. This is despite compelling evidence of a recent decline in the aerobic fitness of young Australians,<sup>157,163</sup> which is suggestive of a meaningful decline in population health and wellbeing. From a public health standpoint, there is a pressing need for a national fitness survey of Australian children and young people that includes a range of directly measured health-related fitness indicators and health outcomes. This would allow for the tracking of trends in health and fitness, and provide insight into the links between fitness, body composition, physical activity and a range of cardiometabolic disease risk factors and mental health outcomes.
- + Australian research that explores criterion-referenced standards linked with a 'healthy' level of aerobic fitness is needed.
- + We need a better understanding of the importance of other fitness components (e.g., muscular strength, endurance and flexibility) to the health and wellbeing in children and young people.



## What do we need to do?

### How to collect the data

While this indicator is currently focused on aerobic fitness, the national physical activity guidelines<sup>9</sup> recommend that children and young people also engage in muscle and bone strengthening activities on at least three days per week. It is therefore recommended that the following standardised measures of aerobic and muscular fitness be routinely employed:<sup>163,164,165</sup>

1. The 20 m shuttle run or 'beep test' of aerobic fitness be administered by trained personnel using the Australian Sports Commission<sup>166</sup> protocol; and

2. The standing broad jump test of muscular fitness (explosive muscular strength) be administered by trained personnel using the Pyke<sup>167</sup> protocol.

### How to operationalise the primary metric

Until criterion-referenced standards linked with a 'healthy' level of aerobic fitness in Australians are established (as in Europe<sup>168</sup> and the US<sup>169</sup>), the primary metric used to assess the aerobic fitness levels of Australian children and young people should be:

### Comparison of the current levels of aerobic fitness of Australian children and young people against norm-referenced international standards.<sup>157</sup>

Given that there are no evidence-based criterion-referenced standards for the standing broad jump test with which to benchmark muscular fitness (as there are for aerobic fitness in overseas populations), a primary metric is not recommended, although it is recommended that muscular fitness be routinely measured when possible.

## BEYOND THE GRADE

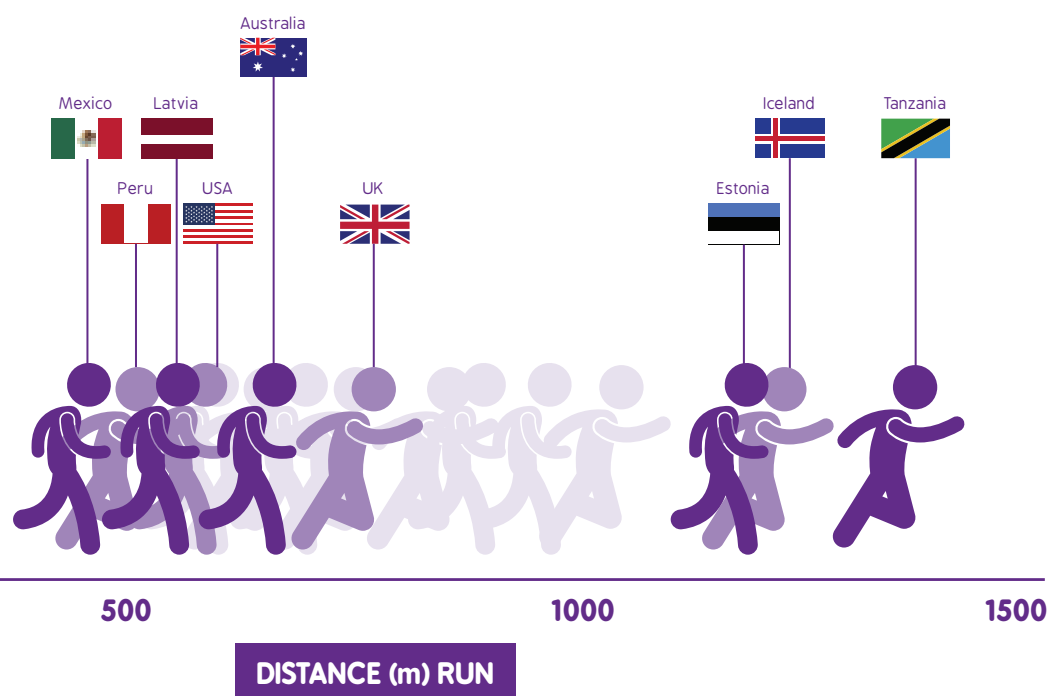
### Where does Australia sit in the pack?

Physical fitness has long been considered an important indicator of good health. Much of the information linking fitness and health is available for adults, with numerous studies strongly linking low aerobic fitness with premature death in older people. Until recently, the link between fitness and death later in life had not been studied directly in younger people. One study, including over 1.3 million 18-year-old Swedish men who had their aerobic fitness measured and were followed up for 29 years, found that low aerobic fitness in late adolescence was strongly associated with premature death from any cause later in life.<sup>170</sup> Another study, which measured and followed up 510 16-year-old Japanese girls for 64 years from 1943 to 2007, found that high aerobic and muscular fitness in adolescence was associated with longevity.<sup>171</sup>

How does the fitness of Australian kids stack up? Data on over 1.1 million kids from 50 countries who were measured for aerobic fitness using the 20 m shuttle run (where they repeatedly run back and forth faster and faster) show that Australian kids finish in the bottom half of the field (see Figure 12).<sup>157</sup> The typical 12-year-old Australian would run about 660 metres (or 33 laps lasting 4¼ minutes) on the shuttle run before stopping, some 700 metres (or 35 laps) behind the typical kid from Tanzania. The best performing kids are from Africa and Northern Europe, while some of the worst performing are from South America. It will be interesting to see if a similar result holds true for muscular fitness, although unfortunately, good comparative international data are not readily available.

Figure 13.

Visual representation of how the aerobic fitness of 12-year-old Australian children stacks up against the rest of the world.





## MOVEMENT SKILLS

2014  
INC

2016  
D

- Proportion of Australian children and young people in Grade 6\*, competent in locomotor<sup>#</sup> ability (boys and girls examined separately); and
- Proportion of Australian children and young people in Grade 6\*, competent in object-control<sup>^</sup> ability (boys and girls examined separately).

\* By the age of 10 (Grade 6) children should have acquired competency in core fundamental movement skills.<sup>172</sup>

<sup>#</sup> Locomotor movement skills include sprint, vertical jump, side gallop and leap.

<sup>^</sup> Object-control movement skills include kick, over-arm throw and catch.

### Confidence Rating



#### Rationale

In 2014 an Incomplete grade was assigned to this indicator given the lack of nationally representative data, however this limitation is now reflected in the confidence rating. With no new data available, the overall grade reflects the poor movement skill competency of Australian children in Grade 6.

#### Key Findings

- + State-based data indicate that girls in Grade 6 are doing quite poorly with their locomotor (proportion of girls showing mastery—sprint: 25%; vertical jump: 22%; side gallop: 51%; and leap 19%) and object-control competency (proportion of girls showing mastery—kick: 7%; over-arm throw: 7%; and catch: 38%).<sup>61</sup>
- + State-based data indicate that boys in Grade 6 are doing quite poorly with their locomotor (proportion of boys showing mastery—sprint: 24%; vertical jump: 23%; side gallop: 41%; and leap 5%) competency, however their object-control competency is marginally better (proportion of boys showing mastery—kick: 36%; over-arm throw: 33%; and catch: 60%).<sup>61</sup>

#### How can we improve the grade?

- + We need to ensure that within schools classroom teachers and physical education teachers are qualified to teach movement skills.<sup>134</sup> Beyond the school environment, children need to be provided with many opportunities to practice these skills such that they not only further develop their physical competencies but also their social, cognitive and emotional capabilities to participate. This will help them to develop their physical literacy 'toolkit' and support them to be active for life.<sup>173</sup>
- + Greater focus on the development of movement skills needs to be apparent within the early childhood sector,<sup>174</sup> with parents playing a pivotal role in engaging with children to support the development of these skills.<sup>134</sup>

#### What do we need to know?

- + There is a clear need for nationally representative data regarding the movement skill competency of Australian children and young people.
- + More research exploring the development of 'life skills' should be developed, in addition to research into fundamental movement skills, to better understand how to engage children in lifelong activity.





## What do we need to do?

### How to collect the data

In order to assess the movement skill competency of Australian children and young people, the standardised methodology that should be employed is: **A movement skill competency assessment battery (locomotor [sprint run, vertical jump, side gallop and leap] and object-control [catch,**

**overhand throw, kick and two-hand strike] skills) using the Get Skilled Get Active process orientated checklist,<sup>172</sup> administered by a trained individual.**

### How to operationalise the primary metric

The primary metrics used to assess the movement skills of Australian children and young people should be:

1. Proportion of Australian Grade 6 children who are competent in locomotor skills (boys and girls examined separately); and
2. Proportion of Australian Grade 6 children who are competent in object-control skills (boys and girls examined separately).

## BEYOND THE GRADE

### What else can we add to a child's 'toolkit'?

Traditionally, Fundamental Movement Skills (FMS) comprise foundational movement patterns that children should develop competency in by Grade 6.<sup>172</sup> These foundational movements include locomotor skills (i.e., run, jump, gallop and leap), object-control skills (i.e., kick, throw and catch) and stability (i.e., balancing and twisting).<sup>175</sup> As the concept of physical literacy gains momentum it has become apparent in some instances that people see FMS and physical literacy as interchangeable. In actual fact, developing competency in FMS is just one of the 'tools' a child needs to add to their physical literacy 'toolkit'.<sup>22,176</sup>

A child who develops competency in FMS (achieved through purposeful and structured activities as well as engaging in self-directed physical activity) is thought to then have the foundation to develop more complex movement patterns required to confidently and competently participate in various activities,<sup>177</sup> typically residing in the sporting domain. While the importance of acquiring competency in FMS is well evidenced,<sup>134</sup> we also need to consider other 'tools' that can be developed to improve a child's physical literacy 'toolkit', which will complement FMS competency and encourage participation in lifelong physical activity.

**To ensure Australian children and young people have all the 'tools' they need to engage in lifelong physical activity, we need to make more room in their 'toolkit' alongside FMS for a range of movement skills that are needed to participate in a broad range of activities that appeal to all**

So what might these lifelong movement skills look like? Thinking about lifelong physical activity in the first instance, this is something that a person can do alone or in a group, it is highly self-directed and does not require a hierarchy of organisation and most importantly, it can be done by children, teenagers and adults.<sup>77</sup> The skills children and young people need to acquire should therefore align with activities such as strength training (using free weights and body weight), dancing, golf, yoga and swimming — just to name a few.

Fundamental Movement Skills have an important place in a child's physical literacy 'toolkit'. In order to ensure Australian children and young people have all the 'tools' they need to engage in lifelong physical activity, we need to make more room in their 'toolkit' alongside FMS for a range of movement skills that are needed to participate in a broad range of activities that appeal to all.



Figure 14.

Visual representation of lifelong movement skills for Australian children and young people.



## SHOWCASE PAGES

The following 'Showcase Pages' highlight practical, real-life examples of what is currently being done at the national and state and territory level to facilitate and promote physical activity for all, and provide details of where to find more information.

With the theme of this year's Report Card focussing on 'Physical Literacy' and 'lifelong activity for all' the pages have been developed to showcase current, innovative and inclusive programs, policies, campaigns or initiatives that promote and facilitate ways in which all children and young people can be physically active for life.

In an effort to engage Government in the development and communication of the 2016 Report Card, AHKA invited the Minister for Health in each state and territory, as well as the Federal Minister for Health, to coordinate the Showcase Page for their relevant region. We were delighted to have all Ministers for Health at the State, Territory and Federal level agree to assist in coordinating the content for their relevant Showcase Page.

**Active Healthy Kids Australia encourage Australians to engage with some or all of the initiatives showcased in their region as they provide ways in which all Australian children and young people can incorporate more physical activity into their lives daily**

For future Report Cards AHKA is interested in hearing from individuals, organisations, government representatives, communities etc. who are involved with a program, policy or initiative at the national or state/territory level that could be featured in future 'Showcase Pages'. For more information please contact Dr Natasha Schranz (AHKA Research Fellow) via email [AHAK@activehealthykidsaustralia.com.au](mailto:AHAK@activehealthykidsaustralia.com.au)



## Author:

The Hon Sussan Ley MP, Minister for Health and Aged Care, Minister for Sport,  
The Australian Government - Department of Health



## Girls Make Your Move

Launched in February 2016, The Girls Make Your Move campaign was developed by the Australian Government to raise the levels of awareness of the benefits of physical activity among young women aged 12-19 years. The campaign aims to encourage and support young women to be more active and reinforces the many benefits of an active life whether through recreation, sport or individual physical activity.

Contact: Department of Health  
(02) 6289 1555

Website:  
[www.australia.gov.au/girlsmove](http://www.australia.gov.au/girlsmove)

## Sporting Schools

The Sporting Schools Program provides funding for local sporting organisations and schools across Australia to run fun, nationally-accredited sporting programs for children in their communities. The program was developed on the basis of 'skills not drills' to help children develop a strong connection to sport at a young age. It provides children with the ability to try a number of different sports through formal programs to find the ones they love the most. A key goal of the program is to link with local clubs to enable kids to transition to a club environment in sport.

Contact: Department of Health  
(02) 6289 1555

Website:  
[www.ausport.gov.au/participating/playsportaustralia](http://www.ausport.gov.au/participating/playsportaustralia)

## Play.Sport.Australia

Launched in March 2015, Play.Sport.Australia, is the Australian Sport Commission's (ASC) game plan to improve participation in organised sport. The plan focuses on better engagement with the community, stronger governance for sports and innovative ways to improve their long-term financial sustainability. By increasing participation in sport, Play.Sport.Australia will help children build a lifelong connection with fitness and its associated benefits.

Contact: Department of Health  
(02) 6289 1555

Website:  
[www.ausport.gov.au/participating/playsportaustralia](http://www.ausport.gov.au/participating/playsportaustralia)



Active Healthy Kids Australia would like to acknowledge the Office of the Federal Minister for Health, the Hon. Sussan Ley MP for initiating the coordination of this Showcase Page.



# AUSTRALIAN CAPITAL TERRITORY



Active Healthy Kids Australia would like to acknowledge the Office of the ACT Assistant Health Minister, Meegan Fitzharris, MLA for initiating the coordination of this Showcase Page.

## Co-Authors:

Elizabeth Phythian, Kids at Play Active Play Program Manager, Health Improvement Branch, ACT Health  
Alyssa Krause, Kids at Play Active Play Program Officer, Health Improvement Branch, ACT Health  
Rebecca Kelley, Deputy Director, Active Canberra, Chief Minister, Treasury and Economic Development Directorate  
Josephine Andersen, Senior Manager, Curriculum, Learning and Teaching, Education Directorate  
Ben McHugh, A/g Director, Capital Works, Transport Canberra and City Services

## Kids at Play Active Play

*Kids at Play Active Play (KAPAP)* is a free ACT Government program which has been designed to help early childhood educators feel more confident to promote active play and teach fundamental movement skills (FMS) to children aged 3 to 5 in ACT early childhood education and care (ECEC) services.

The KAPAP program supports the ACT Government's Healthy Weight Initiative and seeks to contribute to addressing the 2015 Australian Early Development Census results which showed that ACT children were below the national average in terms of the physical health and well being domain.

Components of the KAPAP program include:

- face-to-face professional learning (PL) sessions for leaders (Principals/Directors/Executive Staff) and educators;
- three active play visits to each participating centre/preschool where KAPAP officers (physiotherapists and occupational therapists) mentor educators to assist them in applying the learnings from the PL in their ECEC setting;
- resources (manual, website, FMS lanyard cards, FMS video clips, parental engagement material);
- tools (Active Play Audit Tool, Physical Activity and Small Screen Recreation policy template);
- access to the ACT Government's Healthier Work Service to assist in developing a Workplace Health and Wellbeing Program for their workplace.

During early childhood, it's important for kids to learn FMS (running, jumping, kicking, catching, throwing, etc). These skills help kids learn how to control and coordinate their bodies and are the building blocks for participation in active play, school PE lessons, sports and recreational activities.



Since its commencement in July 2014, 99 ACT ECEC services have participated in the KAPAP program. After participating in the program, the majority of educators reported being more confident in teaching FMS and encouraged active play more frequently in their classes.

Contact: [kidsatplay@act.gov.au](mailto:kidsatplay@act.gov.au)  
(02) 6207 9525

Website: [www.act.gov.au/KAPAP](http://www.act.gov.au/KAPAP)

## Building teacher capacity in physical literacy in ACT schools

Established in 2014, the Physical Education (PE) Pulse Network is an innovative collaboration with sport, active recreation and ACT education sector organisations, which have come together to support high quality delivery of physical activity, physical education and sport experiences in ACT schools. The Network supports teachers to deliver physical education curriculum, and has been successful in streamlining contact between schools and the myriad of external providers that are regularly engaged in this area.

The PE Pulse Network has launched a central website to provide a one stop portal for teachers seeking professional learning opportunities, resources, or wanting to engage external physical activity/sport program providers.

In addition, the Education Directorate recently conducted a pilot program to identify strategies that would build the capacity of ACT public primary school teachers in the delivery of

quality physical education. A research report and discussion paper has been published for school leaders to reflect on the findings to support high quality delivery of physical education.

These initiatives are part of the ACT Government's Healthy Weight Initiative ([www.act.gov.au/healthyliving](http://www.act.gov.au/healthyliving)).

Contact: [register@pepulse.com.au](mailto:register@pepulse.com.au)

Website: [www.pepulse.com.au](http://www.pepulse.com.au)

## Active Streets for Schools

The Active Streets for Schools program is an extension of the Ride or Walk to School program to make the environment around schools safer to ride, walk, scooter or skate to and from school. The Ride or Walk to School program has been supporting 52 primary schools across the ACT, increasing to 108 schools through funding in the 2016-17 Budget.

The Active Streets program is an education and awareness campaign to encourage school leaders and parents to support their students by allowing them to ride or walk to school leading to more physically active and healthier children.

The program is complemented by infrastructure improvements focused on routes to schools, traffic safety and changing behaviors of parents who may drive their children to school each day.

Initially piloted with four primary schools, Active Streets is now being rolled out across 25 new schools as a result of additional funding in the 2016-17 Budget with the ACT Government's Active Travel Office being the central point of contact for school principals, parents and local residents.

The early data collection from the four pilot schools has indicated up to a 10% increase in participation rates within the first 6 months of the program rollout.

Contact: [www.transport.act.gov.au/about/contact-us](http://www.transport.act.gov.au/about/contact-us)

Website: [www.transport.act.gov.au/getting-around/active-travel](http://www.transport.act.gov.au/getting-around/active-travel)

# NEW SOUTH WALES



## Author:

Lily Henderson, Go4Fun State Program Manager, NSW Office of Preventive Health

## Go4Fun

Go4Fun® is a family-focused healthy lifestyle program for children aged 7-13 years who are above a healthy weight and has been delivered across NSW since 2009.

The program is funded by the NSW Ministry of Health and makes an important contribution to the *NSW Healthy Eating and Active Living Strategy: Preventing overweight and obesity in NSW 2013-2018* and the NSW Premier's Priority to reduce overweight and obesity rates in children by 5%.

Since July 2011, over 800 Go4Fun programs have been delivered across NSW with more than 7,800 families participating.

Go4Fun® programs are led by trained qualified health professionals and delivered over 10 weeks. Each 2 hour session includes

nutrition theory, behaviour change support and one hour of game-based physical activity for children.

Children who participate in Go4Fun® achieve statistically significant weight and weight-related health outcomes and become fitter, happier and healthier.

Key physical activity related outcomes include (on average):

- Increased levels of physical activity (+3.7 hours per week)
- Decreased sedentary activities (-3.2 hours per week)
- Increased number of children meeting the National Physical Activity Guidelines (+22%)

Contact: Lily Henderson,  
[lily.henderson@sswahs.nsw.gov.au](mailto:lily.henderson@sswahs.nsw.gov.au)

Website: [www.go4fun.com.au](http://www.go4fun.com.au)



Active Healthy Kids Australia would like to acknowledge the Office of the Minister for Health, NSW, the Hon. Jillian Skinner MP for initiating the coordination of this Showcase Page.



# NORTHERN TERRITORY



Active Healthy Kids Australia would like to acknowledge Territory Wide Services, Department of Health, Northern Territory, for coordinating this Showcase Page.

## Author:

Nutrition and Physical Activity Strategy Unit, Territory Wide Services , Department of Health (NT)  
Ph: (08) 8985 8025

## Move More Learn More Project

The Move More Learn More (MMLM) Project is aimed at educating, training and supporting teachers to deliver quality physical literacy programs, through a focus on foundation movement skills (FMS) and fundamental sport skills (FSS) to children in NT primary school settings, during 2016, without any adverse impact on existing school curricula or activities.

The programs include:

1. FUNtervals. Students participate in 5-7 minute bouts of physical activity, incorporating the 6 FMS (squat, lunge, push up, pull up, bend and brace) throughout the school day, when students are transitioning from one subject or activity to the next.
2. PE lessons. Building on the FUNtervals exercises, students transition to the 8 FSS (run, gallop, hop, leap, catch, kick, strike and throw) as part of weekly PE classes.

The intervention evaluation is a randomized control design comprising of pre (start of school year), mid and post (end of school year) measures from approximately 200 students in intervention and control groups. Assessment will focus on 3 key outcomes:

- Teacher's awareness, knowledge and skill in FMS and FSS pedagogy.
- Improvements in children's physical literacy.
- Improvements in children's academic achievement.

Project outcomes will be available in February 2017.

Contact: Michael Watkins  
(08) 8922 6822



## Coach Development Program

The Northern Territory Institute of Sport's Coach Development Program (CDP) is focused on best practices that facilitate improved physical literacy and life-long involvement in sport and exercise, and purposely avoids the ingrained and unproductive culture of early sport specialisation, the demand for junior champions and a win-at-all-costs mentality which can lead to high drop-out rates and other adverse outcomes.

The CDP is open to coaches, teachers, parents and other family members with young athletes (aged 6-19 years) involved in any sport across the Northern Territory. It is tailored to all levels of proficiency and provides access to appropriately qualified and experienced sport personnel who openly engage in observation and practice with participants in a highly supportive environment. The CDP is designed to encourage participants to apply and align their own learning, theories and methods with the program's focus on holistic, life-long athlete development.

Contact: Tim Ellison  
(08) 8922 6821

## Red Dust's Healthy Living Program

Red Dust's Healthy Living Program is a school based health promotion program delivered to schools in remote Northern Territory

communities including Areyonga, Kintore and Yuendumu in Central Australia, and the Tiwi Islands, Wadeye and Daly River in the Top End.

The Healthy Living Program works with young people in schools and in their communities to raise awareness of how lifestyle and behaviour choices can affect health and well-being and develop skills that empower them and their community.

The program promotes experiential learning through sport, music, art, dance, and circus and is facilitated by role models and community champions.

The physical activity component of the program uses sport as a tool for development of the whole person. Sport, uniquely, provides a safe environment for young people to belong, develop a sense of loyalty, and to have a purpose.

Red Dust uses role models to facilitate process driven physical activities that are progressive and encourage community members to make healthy, active choices throughout their lifespan that are both beneficial to, and respectful of their whole self, others, and their environment.

Contact: Darren Smith  
(03) 9818 1744

Website: [www.reddust.org.au](http://www.reddust.org.au)





## Author:

Darling Downs and South West Education Region and Prevention Division,  
Department of Health (Queensland)

### *Increasing Activity & Intelligent Minds (iAIM)*

iAIM was an innovative school-based physical activity initiative developed by the Darling Downs and South West Education Region in partnership with the Department of Health. The initiative promoted physical activity as a strategy to support the region's school improvement agenda. Other elements of iAIM's success was the purposeful use of data, implementing effective pedagogical practice and creating a culture that promoted learning.

In 2014, regional education staff began working with school principals and alongside teachers to encourage them to plan, develop and test new ways to enhance educational outcomes through increased physical activity. At the end of 2015, 64 schools in the region (about one-third of schools) had committed to being an iAIM Action School. In action schools, 67% of students increased physical activity; and 200 minutes per week on average



of additional physical activity was included in the school day. 20 teachers completed an action research project linking physical activity to student achievement, engagement, behaviour, attendance, physical literacy and/or social skills. iAIM resources on the Department of Education's e-Learning environment were accessed 6,700 times. iAIM has been invited to present at the 2016 National Summit on Student Engagement, Learning & Behaviour.

Contact: Kaye Pulsford,  
Executive Director,  
Preventive Health Branch

Active Healthy Kids Australia would like to acknowledge the Office of the Minister for Health, QLD, the Hon. Cameron Dick MP for initiating the coordination of this Showcase Page.



# SOUTH AUSTRALIA



## Author:

Julie Patterson, Director Public Health Partnerships

## Co-Authors:

Sarah Sutter, CEO Nature Play SA

Chris Daniels, Professor of Biology University of South Australia

Carmel Williams, Manager Strategic Partnerships

Active Healthy Kids Australia would like to acknowledge the Office of the Minister for Health, SA, the Hon. Jack Snelling MP for initiating the coordination of this showcase page content.

## Nature Play

Nature Play SA's charter is to address a worldwide trend that is seeing an entire generation of children growing up indoors, without the time or freedom to access free and unstructured play outdoors in nature. In SA, our children are spending less time in nature than at any other time in our history, leading to increasing rates of childhood obesity, depression and behavioral disorders.

Spending time in unstructured play in nature (nature play) is not just good for us, it is fundamental to children's health, well-being and development. Nature Play SA, an independent, not for profit incorporated association funded by the State Government until 2018/2019, work with partner organisations to spread the message about the importance of making nature play an everyday activity for children. Nature Play SA provides events, free resources, products, programs, workshops,

Conferences and presentations to assist families, schools and communities. Successes include

- Hosting several major annual events attracting over 30,000 people, participating in outdoor activities like cubby building, mud play, kite flying.
- Distributing 150,000 nature play passports free to SA children incorporating outdoor activities.
- Developing solid partnerships with Omo, DEWNR, DECD, SA Health, NRM Education, local government, Stratco and more.
- Building the nature play movement through a strong social media following:
  - 19,500 Facebook followers
  - 1,500 Instagram followers
  - 75,000 website users
  - 3,200 subscribers.

Contact: Sarah Sutter  
[sarah.sutter@natureplaysa.org.au](mailto:sarah.sutter@natureplaysa.org.au)

Website: [www.natureplaysa.org.au](http://www.natureplaysa.org.au)

## Healthy Parks Healthy People

Healthy Parks Healthy People SA Framework is a nature-based health approach for population health. Fostering and enabling direct and meaningful experiences with nature is transformative for our physical and mental health, the development of our children, strengthening our personal relationships with family, building safer and better connected neighbourhoods, developing a strong economy, and nurturing environmental attitudes and values that encourage a continued conservation ethic in South Australia.

Contact: Carmel Williams  
[carmel.williams@sa.gov.au](mailto:carmel.williams@sa.gov.au)  
and Rachel Pfitzner  
[rachel.pfitzner@sa.gov.au](mailto:rachel.pfitzner@sa.gov.au)

Website:  
[www.environment.sa.gov.au/managing-natural-resources/park-management/people-and-parks](http://www.environment.sa.gov.au/managing-natural-resources/park-management/people-and-parks)

## Premier's be active Challenge

The Challenge has been running since 2007 with around 35,000 students in South Australia completing the 4 weeks of 60minutes daily physical activity. Students receive a medal for completing the Challenge that is run from Reception to year 12 in SA schools and home schools. Recently the Challenge has worked with preschool sites and students to introduce fundamental movement skills.

Contact: Mark Williams

Website: [www.pbac.sa.edu.au](http://www.pbac.sa.edu.au)







## Author:

Julie Williams, Manager Chronic Conditions Prevention, Department of Health and Human Services

## Co-Author:

Rebekah Harrison, Physical Activity Officer, Department of Health and Human Services

### Being active matters! – physical activity posters

The Being Active Matters! (Second edition) Booklet and Posters provide parents, carers and early childhood settings with ideas on how to set up and play a range of active games that can help children to develop fundamental movement skills like running and catching.

Drawing on the content of the Being Active Matters booklet, a suite of posters were developed targeting parents of children aged 0-5 years. The outcomes of the project were:

- Parents, early childhood settings and the community have an increased awareness of the importance of physical activity and fundamental movement skill development in the early years; and
- community and early childhood setting have increased knowledge of resources for children's physical activity.



The Being Active Matters resources continue to be distributed to programs and settings across Tasmania that work with families.

The Being Active Matters booklet and posters were developed by the Child Health Association Tasmania, in partnership with the Department of Health and Human Services (DHHS), Womensport and Recreation Tasmania, the University of Wollongong and the Australian Early Development Census (AEDC).

Contact: Rebekah Harrison  
[rebekah.harrison@dhhs.tas.gov.au](mailto:rebekah.harrison@dhhs.tas.gov.au)

Website:  
[www.childhealthassoc.tas.wix.com/chat#!being-active-matters/ljbia](http://www.childhealthassoc.tas.wix.com/chat#!being-active-matters/ljbia)

### Family Food Patch

Family Food Patch is a peer education program that empowers families and local communities by building and mobilising skills in children's physical activity, nutrition and community action.

The six week training program includes specific topics on physical activity, including fundamental movement skills. Participants are provided with information and resources on children's physical activity and fundamental movement skills which equip them to share knowledge with others.

Since 2001, training has been provided to over 370 parents, carers and community/health workers in 28 different locations throughout Tasmania.

The Family Food Patch program is delivered in partnership between the Child Health Association

of Tasmania (CHAT) and the Department of Health and Human Services. CHAT receives funding through the Department of Health and Human Services, to provide Family Food Patch.

Contact: Rebekah Harrison  
[rebekah.harrison@dhhs.tas.gov.au](mailto:rebekah.harrison@dhhs.tas.gov.au)

Website:  
[www.childhealthassoc.tas.wix.com/chat#!family-food-patch/c14wr](http://www.childhealthassoc.tas.wix.com/chat#!family-food-patch/c14wr)

### Active Classrooms

Active Classrooms is a professional learning package that provides classroom teachers with a session, resources and equipment to assist them to make their classrooms more active environments.

Active Classrooms aims to increase both the knowledge and practice of active games and movement in the classroom and therefore create environments where moving is normal. Active games within the sessions have had a focus on fundamental movement skills and teachers have had the opportunity to practice these games before implementing them in their classrooms. Recent evaluation of Active Classrooms sessions showed that all respondents had tried activities from Active Classrooms with their class and had shared active ideas with their school communities.

It has been available on an annual basis to teachers from Move Well Eat Well schools since 2012. Since its inception, a total of 84 teachers from over 50 schools have completed the sessions.

Contact: Rebekah Harrison  
[rebekah.harrison@dhhs.tas.gov.au](mailto:rebekah.harrison@dhhs.tas.gov.au)

Active Healthy Kids Australia would like to acknowledge the Office of the Minister for Health, TAS, the Hon. Michael Ferguson MP for initiating the coordination of this Showcase Page.





Author:

Department of Health and Human Services



## Transform Us!

Transform-Us! is an effective program for upper primary school children that incorporates a mixture of educational, pedagogical, behavioural and environmental approaches to increase children's physical activity and decrease sedentary behaviours. The program is delivered in the classroom, school grounds and home environment. The program showed increases in children's physical activity during recess and lunchtime by 33 minutes a week, and reductions in sitting time by 196 minutes a week.

The program has received funding from the National Health & Medical Research Council to disseminate Transform-Us! across Victoria over 5-years, commencing in 2017. It will be hosted by the Victorian Department of Education and Training and disseminated via partner organisations including; VicHealth, Victorian Independent Schools, Victorian Principals Association, the Australian Council for Health, Physical Education and Recreation (ACHPER) and Peak PhysEd.

Contact:  
Alfred Deakin Professor Jo Salmon

Website: [www.deakin.edu.au/ipan/our-research/other-projects](http://www.deakin.edu.au/ipan/our-research/other-projects)

## Nature Play Week

Nature Play Week is built on the support and dedication of people who seek to reconnect kids to nature. From families to small grassroots organisations, to leaders in the field, Nature Play Week aims to provide a platform for everyone to celebrate the wonderful work they do, and most importantly, get kids outside!

Nature play is not about prescribing structured activities. Nature play is about empowering kids to play, explore, discover and find wonder in the natural world. Approximately 15,000 children participated in the 2016 Nature Play Week event.

Contact: Cecile van der Burgh,  
Co-founder Kids in Nature Network,  
[info@kidsinnaturenetwork.org.au](mailto:info@kidsinnaturenetwork.org.au)

## Victorian Government Policy

Improving physical activity outcomes is a priority of the Victorian Government. Key policy and reforms aimed to increase physical activity levels include:

### Victorian public health and wellbeing plan 2015-19

The priority area of healthier eating and active living has a focus on improvements at every stage of life, supporting people to be as physically active as often as possible. Strategies include active transport, neighbourhood design that promotes activity and social connectedness, participation in sport and recreation and encouraging interaction with nature in Victoria's parks and open spaces.

### Education State:

In September 2015, the Government launched its Education State: schools reforms and committed itself to achieving a set of ambitious targets aimed at improving school student outcomes that promote: learning for life; happy, healthy and resilient kids; breaking the link with disadvantage; and pride and confidence in our government schools. As part of the Education State reforms Victoria has adopted a target to increase the proportion of school students participating in regular physical activity (one hour of activity, five times a week) by 20% over the next decade.

## Achievement Program

The Achievement Program provides early childhood services, schools and workplaces with the help and support they need to create healthy environments. It allows them to broadly look at health and wellbeing within their organisation to determine what policies, cultural and environmental changes are needed to improve the health of children, students, employees and wider community.

Members are encouraged to meet the Achievement Program's best-practice benchmarks in their chosen health priority areas. There are eight health priority areas for schools and six for early childhood education and care services, one of which is Physical Activity. Early childhood services and schools that meet these benchmarks, which align with international best-practice, are recognised by the Victorian Government.

The initiative is potentially reaching more than 390,000 children and young people through 1462 participating early childhood education and care services and 798 schools.

The Achievement Program is delivered by Cancer Council Victoria on behalf of the Victorian Government.

Contact: Anthony Bernardi

Website:  
[www.achievementprogram.health.vic.gov.au](http://www.achievementprogram.health.vic.gov.au)

# WESTERN AUSTRALIA



## Author:

Emily O'Connell, Senior Policy Officer, Chronic Disease Prevention, Department of Health

## Co-Author:

Denise Sullivan, Director, Chronic Disease Prevention, Department of Health  
Glenn Morley, Senior Consultant, Department of Sport and Recreation



## Better Health Program

The Better Health program is an evidence-based healthy lifestyle program that facilitates the adoption of healthy lifestyle behaviours in families with children aged 7 to 13 years who are identified as being overweight or obese. Funded by the Department of Health, the program is delivered free of charge in the Perth metropolitan area and offers families practical advice and information about good nutrition and a balanced diet, ways to increase levels of physical activity and strategies to achieve behaviour change. Included as part of the 10 week program is twice weekly 60 minute physical activity sessions that use fun game based activities to get children interested in being physically active.

Since the program began in July 2014, a total of 481 children have participated in the Better Health program. Results demonstrate positive healthy outcomes for participating families, including a reduction in children's BMI and waist circumference; increased levels of physical activity and fitness; decreased sedentary behaviour; and increased psychological wellbeing of participants with body and self-esteem improving.

Contact: Chris Vavaki,  
Better Health Company.  
[chris@betterhealthcompany.org](mailto:chris@betterhealthcompany.org)

Website:  
[www.betterhealthprogram.org](http://www.betterhealthprogram.org)

## Nature Play WA

Nature Play WA is an incorporated not-for-profit association established to increase the time Western Australian children spend in unstructured play outdoors and in nature.

Beginning as an initiative of the Western Australian Department of Sport and Recreation, Nature Play WA is founded on the understanding that unstructured play outdoors (nature play) is fundamental to a full and healthy childhood providing benefits in health, cognitive, social and emotional development and in the building of resilience and creativity. The success of the program has led to the creation of partner Nature Play organisations in South Australia, Queensland and Canberra.

Contact: Griffin Longley (CEO)  
(08) 9389 4050  
[info@natureplaywa.org.au](mailto:info@natureplaywa.org.au)

Website: [www.natureplaywa.org.au](http://www.natureplaywa.org.au)

## Investment in active travel & cycling

The State Government's Transport @ 3.5 Million sets the vision for a generational change to Perth's transport network and prioritises measures to enable active and public transport. A suite of measures are proposed, including the expansion of public transport services and off-road shared paths and recreational cycleways. Delivery of the existing TravelSmart to School program to primary schools will be extended to encourage more children to be healthy and active by increasing walking and riding to school.

Contact:  
[transportplan@transport.wa.gov.au](mailto:transportplan@transport.wa.gov.au)

Website: [www.transport.wa.gov.au/projects/perth-transport-plan-for-3-5-million.asp](http://www.transport.wa.gov.au/projects/perth-transport-plan-for-3-5-million.asp)



# SUMMARY OF GRADES

**Table 4. Summary of the grades assigned to each indicator and the primary metrics used to assign each grade.**

Indicator	Grade		Metrics
	2014	2016	
Overall PA Levels	D–	D–	Proportion of Australian children and young people meeting the recommended Australian PA guidelines.
Organised Sport and PA Participation	B–	B	Proportion of Australian children and young people participating in organised sport and/or physical activity.
PA Participation in Schools	INC	INC	No consensus on a primary metric could be reached.
Active Transport	C	C–	Proportion of Australian school children for which active transport is their usual mode of transport to and from school for at least part of the journey.
Active Play	INC	INC	No consensus on a primary metric could be reached.
Sedentary Behaviours	D–	D–	Proportion of Australian children and young people meeting the Australian sedentary behaviour screen time guidelines.
Family and Peers	C	C+	<ul style="list-style-type: none"> <li>Proportion of Australian children and young people who are reported to have at least one screen-based device in their bedroom;</li> <li>Proportion of Australian children and young people who receive some form of encouragement from their parents/caregivers to be physically active on a weekly basis;</li> <li>Proportion of Australian children and young people who receive some form of encouragement from their peers to be physically active on a weekly basis;</li> <li>Proportion of Australian children and young people who engage in 'co-physical activity' with their parents/caregivers on a weekly basis ; and</li> <li>Proportion of Australian parents/caregivers who meet the Australian PA guidelines.</li> </ul>
School	B–	B–	<ul style="list-style-type: none"> <li>Proportion of schools that have a specialist physical education teacher to take physical education lessons;</li> <li>Proportion of schools that schedule the delivery of at least 150 minutes of physical education per week to students;</li> <li>Proportion of schools that have physical activity facilities/equipment available to students to use during school hours; and</li> <li>Proportion of schools allocating at least 60 minutes per day for children to be active at recess and lunchtime.</li> </ul>
Community and the Built Environment	A–	A–	<ul style="list-style-type: none"> <li>Proportion of Australian children/parents who report a playground or play space near to their home;</li> <li>Proportion of Australian parents/children/teachers who report heavy/problem traffic not to be an issue in their home or school neighbourhood;</li> <li>Proportion of Australian children/parents who report their neighbourhood to be safe;</li> <li>Proportion of Australian children/parents who report they have good roads/ footpaths in their neighbourhood; and</li> <li>Proportion of Australian children/parents who report they have access nearby in their neighbourhood to public transport.</li> </ul>
Strategies and Investments	C+	D	<ul style="list-style-type: none"> <li>Review of major government initiatives that were implemented or removed since the last Report Card;</li> <li>The amount of money committed by the government (federal, state/territory, local) to various physical activity endeavours, initiatives and organisations; and</li> <li>Evaluating the work of non-government organisations.</li> </ul>
Physical Fitness	INC	C–	Comparison of the current levels of aerobic fitness of Australian children and young people against norm-referenced international standards.
Movement Skills	INC	D	<ul style="list-style-type: none"> <li>Proportion of Australian children and young people in Grade 6, competent in locomotor ability (boys and girls examined separately); and</li> <li>Proportion of Australian children and young people in Grade 6, competent in object-control ability (boys and girls examined separately).</li> </ul>

Note, INC = Incomplete Grade, PA = physical activity.



# SUMMARY OF STANDARDISED METHODOLOGIES, QUESTIONS AND PRIMARY METRICS

**Table 5. Summary of the standardised questions and primary metrics proposed for each grade by the Active Healthy Kids Australia Research Working Group.**

Indicator	Methodologies	Questions	Metrics
<b>Overall PA Levels</b>	Children are monitored for at least 3-days but ideally they would be monitored for 7-days. Researchers should report activity time (e.g., minutes MVPA and light physical activity) or step counts for each day (that data was collected on) and as a daily average.	Over the past 7 days, on how many days were you/your child engaged in moderate to vigorous physical activity (activity that increases heart rate and gets you/your child out of breath some of the time) for at least 60 minutes? Physical activity can be accumulated over the entire day (e.g., for example in bouts of 10 minutes).	<u>Primary</u> Proportion of Australian children and young people meeting the recommended physical activity guidelines <sup>a</sup> on all seven days of the week. <u>Secondary</u> Proportion of Australian children and young people meeting the recommended physical activity guidelines daily, on average <sup>b</sup> .
<b>Organised Sport and PA Participation</b>	During the time that children and young people participate in organised sport (both individual and team sports and for training sessions and competitive games), objective and observational data should be collected. Researchers should report the time that children and young people are active (e.g., time spent in MVPA or light physical activity from both objective data collected and/or observations made) either in minutes per session or as a proportion of the whole session time.	<ol style="list-style-type: none"> <li>1. Have you/has your child participated in organised team sports and/or physical activity (e.g., basketball, football, netball) on a regular basis outside of school hours* (at least once a week for at least 1 school term or an entire sporting season) over the past year?; and</li> <li>2. Have you/has your child participated in organised individual sports and/or physical activity (e.g., martial arts, dance) on a regular basis outside of school hours* (at least once a week for at least 1 school term or an entire sporting season) over the past year?</li> </ol>	Proportion of Australian children and young people regularly participating* (at least once per week for at least 1 school term or an entire sporting season) in organised team/individual sports and physical activity in the past 12-months.
<b>PA Participation in Schools</b>	While students (in both primary and secondary schools) participate in physical education classes and are physically active during other periods throughout the school day, objective and observational data should be collected. Researchers should report the time that children and young people are active (e.g., time spent in MVPA or light physical activity from both objective data collected and/or observations made) either in minutes per session or per school day, or as a proportion of the whole session time or whole school day.	<p><u>Physical Education</u></p> <ol style="list-style-type: none"> <li>1. How many physical education sessions/classes do you have every week (count double lessons as 2 sessions/classes), not including school sport?;</li> <li>2. How long do each of the physical education classes/sessions go for?; and</li> <li>3. On average for how long during each physical education class/session are you active (e.g., not standing or sitting down listening to instruction, getting changed etc.)?</li> </ol> <p><u>Active during other times</u></p> <ol style="list-style-type: none"> <li>1. Thinking about both recess and lunch combined, how much time each day during recess and lunch do you get free time (i.e., time that you can choose to do what activity you want to do)?;</li> <li>2. Thinking about both recess and lunch combined, on average for how long during recess and lunch are you active (e.g., not standing or sitting down)?; and</li> <li>3. On how many days, over the past 5 school days, did you use the gymnasium (or indoor play space)/outside sports field (or grassed area)/hard court (or paved area)/playground/sports (or physical activity) equipment during school hours (but outside of scheduled physical education classes)?</li> </ol>	No metric proposed.
<b>Active Transport</b>	N/A	<ol style="list-style-type: none"> <li>1. On how many of the past 5 school days did you/your child travel to (or part of the way to*) school by walking, cycling or some other form of active transport? How long in minutes was the active part of each trip (on average)?;</li> <li>2. On how many of the past 5 school days did you/your child travel from (or part of the way from) school by walking, cycling or some other form of active transport? How long in minutes was the active part of each trip (on average)?; and</li> <li>3. How often, during the past 7 days, did you/your child travel from place to place (not including to/from school) all or part of the way by walking, cycling or some other form of active transport? Answers: Every day; Most days (5–6); Some days (3–4); Not many days (1–2); Never.</li> </ol>	<ol style="list-style-type: none"> <li>1. Proportion of Australian school children for whom active transport is their usual mode of transport to and from school for at least part of the journey (at least 10 minutes); and</li> <li>2. Proportion of Australian children and young people using active transport, all or part of the way to destinations (not including to/from school for at least 10 minutes), on at least 3 of the past 7 days.</li> </ol>

**Table 5. Summary of the standardised questions and primary metrics proposed for each grade by the Active Healthy Kids Australia Research Working Group.**

Indicator	Methodologies	Questions	Metrics
<b>Active Play</b>	While children and young people (of all ages) are engaged in active play or activities that do not fall under other activity domains (i.e., NOT organised sport, physical activity at school or active transport), objective and observational data should be collected. Researchers should report the time that children and young people are active (e.g., time spent in MVPA or light physical activity from both objective data collected and/or observations made).	Thinking of active play, which is any physical activity that is NOT part of organised sport, physical activity done at school or active transport, and is NOT restricted by rules usually set and governed by adults (e.g., kicking a ball against the wall, playing a game of tag with friends or playing on fixed equipment at a park):  1. How much time did you/your child spend engaged in active play on average per day over the past 7 days? (preschool and primary school children); and  Thinking of non-organised physical activity, which is any activity that is NOT part of organised sport, physical activity done at school or active transport and is NOT restricted by rules usually set and governed by adults (e.g., kicking a ball against the wall or running around with your dog at the park):  2. How much time did you spend engaged in non-organised physical activity on average per day over the past 7 days? (young people in secondary school).	No metric proposed.
<b>Sedentary Behaviours</b>	Children are monitored for at least 3-days but ideally they would be monitored for 7-days. Researchers should report sedentary time (e.g., minutes spent sedentary) and patterns of sedentary behaviour (e.g., bout times) for each day (that data were collected on) and as a daily average.	1. On how many days, during the past 7 days, were you/your child engaged in screen-based activities (all forms e.g., watching television, using tablets, computers or smartphones, or playing electronic games) for entertainment for less than 1 or 2 <sup>+</sup> hour/s per day?;  2. On how many days, during the past 7 days, was your child (aged less than 2 years) exposed to any form of screen-based activities (all forms e.g., watching television, using tablets, computers or smartphones, or playing electronic games)?; and  3. On how many days, during the past 7 days, was your child (0–5 years only) kept inactive or restrained (e.g., stroller, high chair, car seat) for more than 1 hour at any time?	1. Proportion of Australian children and young people meeting the recommended sedentary behaviour screen time guidelines <sup>d</sup> on all 7 days of the week; and  2. Proportion of Australian infants/toddlers/pre-schoolers meeting the recommended sedentary behaviour (restrained from inactivity) guidelines <sup>e</sup> on all 7 days of the week.
<b>Family and Peers</b>	N/A	<u>Infrastructure</u>  1. Do you/does your child have at least one fixed screen-device (e.g., television, computer) in their bedroom?; and  2. Do you/does your child regularly have a mobile screen-device (e.g., iPad, smart phone, portable game device) in their bedroom?  <u>Support</u>  1. On how many days, during the past 7 days, did you receive some form of encouragement from a parent or siblings/did you give your child some form of encouragement to be physically active (e.g., "It is great that you have been playing outside more with your brother/sister this week")?; and  2. On how many days, during the past 7 days, did you receive/did you give some form of encouragement from/to your friends or peers to be physically active (e.g., "It's great we are riding to school together from now on")?  <u>Parental/peer behaviour</u>  1. On how many days, during the past 7 days, did you engage in moderate (leaving you somewhat tired) and/or vigorous (leaving you substantially tired) physical activity? Question directed at parents*;  2. During the past 7 days, how much moderate (leaving you somewhat tired) and/or vigorous (leaving you substantially tired) physical activity did you engage in (total amount in minutes)? Question directed at parents*;  3. On how many days, during the past 7 days, were you physically active with a parent or sibling/with your child?; and  4. On how many days, during the past 7 days, were you physically active with a friend or peer?	<u>Infrastructure</u>  1. Proportion of Australian children and young people with at least one fixed screen-device in their bedroom; and  2. Proportion of Australian children and young people who regularly have a mobile screen-device in their bedroom.  <u>Support</u>  1. Proportion of Australian children and young people who receive some form of encouragement from their parents or siblings/friends or peers to be physically active at least once per week; and  2. Proportion of Australian children and young people who give some form of encouragement to their friends or peers to be physically active at least once per week.  <u>Parental/peer behaviour</u>  1. Proportion of Australian parents meeting the recommended physical activity guidelines <sup>f</sup> ; and  2. The proportion of Australian children and young people whose parents* or siblings* or friends or peers engage in co-physical activity with them at least once per week.

**Table 5. Summary of the standardised questions and primary metrics proposed for each grade by the Active Healthy Kids Australia Research Working Group.**

Indicator	Methodologies	Questions	Metrics
<b>School</b>	A national audit of primary and secondary schools that collects information on infrastructure, policies and programming (i.e., the standardised questions suggested below plus any additional to capture other elements important to physical activity participation) be commissioned at the federal level.	<p><u>Infrastructure</u></p> <p>If available, do you/students have access to a gymnasium (or indoor play space)/outside sports field (or grassed area)/hard court (or paved area)/playground/sports (or physical activity) equipment during school hours (but outside of scheduled physical education classes)?</p> <p><u>Policies</u></p> <ol style="list-style-type: none"> <li>1. Does the school employ at least one tertiary qualified physical education specialist teacher on a full-time basis?;</li> <li>2. Does a tertiary qualified physical education specialist teacher deliver all scheduled physical education classes and organised school sport activities for all students?;</li> <li>3. How much scheduled physical education and organised school sport activities are delivered to all students on average every week (in minutes)?; and</li> <li>4. How much time is allocated to recess and lunch time (combined) every day (in minutes)?; and</li> <li>5. During recess and lunch time (combined) how much time are children able to be active if they choose (in minutes)?</li> </ol> <p><u>Programming</u></p> <ol style="list-style-type: none"> <li>1. Does your school offer physical activity/sports programs to all students outside of their formal physical education classes but during school hours?; and</li> <li>2. Does your school offer physical activity/sports programs to all students outside of school hours (e.g., Sporting Schools)?</li> </ol>	<p><u>Infrastructure</u></p> <p>Proportion of schools that allow students to use during school hours (if available but outside of scheduled physical education classes) a gymnasium (or indoor play space)/outside sports field (or grassed area)/hard court (or paved area)/playground/sports (or physical activity) equipment.</p> <p><u>Policies</u></p> <ol style="list-style-type: none"> <li>1. Proportion of schools that employ at least one tertiary qualified physical education specialist teacher on a full-time basis;</li> <li>2. Proportion of schools that have a tertiary qualified physical education specialist teacher deliver all scheduled physical education classes and organised school sport# activities for all students;</li> <li>3. Proportion of schools that deliver at least 150 minutes per week of scheduled physical education classes and organised school sport activities to all students, for which physical education and/or organised school sport activities are compulsory; and</li> <li>4. Proportion of schools that allocate at least 60 minutes for recess and lunch time (combined) every day, during which time students are able to be physically active if they choose.</li> </ol> <p><u>Programming</u></p> <ol style="list-style-type: none"> <li>1. Proportion of schools that offer additional physical activity/sports programs to all students outside of their formal physical education classes but during school hours; and</li> <li>2. Proportion of schools that offer additional physical activity/sports programs to all students outside of school hours;</li> </ol>
<b>Community and the Built Environment</b>	A national audit of environments that collects information on connectedness, access to, and quality of spaces, should be commissioned at the federal level.	<p><u>Infrastructure</u></p> <ol style="list-style-type: none"> <li>1. Is there a playground/park/sports field or facilities/public transport within walking distance of your home?; and</li> <li>2. Within my local neighbourhood there are good roads and footpaths to support active transport—strongly disagree, disagree, neutral, agree, strongly agree.</li> </ol> <p><u>Programs</u></p> <p>My local neighbourhood offers physical activity programs (delivered by community providers and accessed through the local community) suitable for me/my child—strongly disagree, disagree, neutral, agree, strongly agree.</p> <p><u>Safety</u></p> <ol style="list-style-type: none"> <li>1. Heavy or problem traffic is not a concern in my/my child's neighbourhood/school neighbourhood—strongly disagree, disagree, neutral, agree, strongly agree;</li> <li>2. There are safe crossings for me/my child to use if I/they used active transport to travel to school/local playground/local park/local shops/local sports field or facilities—strongly disagree, disagree, neutral, agree, strongly agree; and</li> <li>3. My parents/I prevent me/my child from being physically active outdoors in our community, on my/their own or with friends, because of safety concerns—strongly disagree, disagree, neutral, agree, strongly agree.</li> </ol>	<p><u>Primary Infrastructure</u></p> <ol style="list-style-type: none"> <li>1. Proportion of Australian children and young people who have a playground/park/sports field or facilities/public transport within walking distance of their home; and</li> <li>2. Proportion of Australian children and young people who have good roads and footpaths to support active transport within their local neighbourhood—some level of agreement.</li> </ol> <p><u>Programs</u></p> <p>Proportion of Australian children and young people who are offered suitable physical activity programs (delivered by community providers and accessed through the local community) within their local neighbourhood—some level of agreement.</p> <p><u>Safety</u></p> <ol style="list-style-type: none"> <li>1. Proportion of Australian children and young people for whom heavy or problem traffic is not a concern in their neighbourhood/school neighbourhood—some level of agreement;</li> <li>2. Proportion of Australian children and young people who have safe crossings to access if they use active transport to travel to school/local playground/local park/local shops/local sports field or facilities—some level of agreement; and</li> <li>3. Proportion of children/parents who are prevented/who prevent their child from being physically active outdoors in their community, on their own or with friends, because of safety concerns— some level of agreement.</li> </ol>



**Table 5. Summary of the standardised questions and primary metrics proposed for each grade by the Active Healthy Kids Australia Research Working Group.**

Indicator	Methodologies	Questions	Metrics
<b>Strategies and Investments</b>	No methodologies proposed	No question/s proposed.	No metric proposed
<b>Physical Fitness</b>	<ol style="list-style-type: none"> <li>1. The 20 m shuttle run or 'beep test' of aerobic fitness be administered by trained personnel using the Australian Sports Commission protocol; and</li> <li>2. The standing broad jump test of muscular fitness (explosive muscular strength) be administered by trained personnel using the Pyke protocol.</li> </ol>	N/A	Comparison of the current levels of aerobic fitness of Australian children and young people against norm-referenced international standards.
<b>Movement Skills</b>	A movement skill competency assessment battery (locomotor [sprint run, vertical jump, side gallop and leap] and object-control [catch, overhand throw, kick and two-hand strike] skills) using the Get Skilled Get Active process orientated checklist, administered by a trained individual.	N/A	<ol style="list-style-type: none"> <li>1. Proportion of Australian Grade 6 children who are competent in locomotor skills (boys and girls examined separately); and</li> <li>2. Proportion of Australian Grade 6 children who are competent in object-control skills (boys and girls examined separately).</li> </ol>

Note, PA = physical activity.

<sup>a</sup> At least 60 minutes of MVPA every day OR if pedometers are used at least 12,000 steps every day.

<sup>b</sup> Proportion of children and young people reporting at least 60 minutes MVPA on average per day OR if pedometers are used at least 12,000 steps on average per day.

<sup>c</sup> Different time guidelines for children and young people aged 2-4 and 5-17 years respectively.

<sup>d</sup> No exposure <2 years, ≤1 hour every day for 2-4 years and ≤2 hours for 5-17 years.

<sup>e</sup> ≤1 hour of being inactive or restrained.

<sup>f</sup> At least 150 minutes of moderate, 75 minutes of vigorous or an equivalent combination of both moderate/vigorous physical activities each week.

# DETAILED DESCRIPTION OF DATA SOURCES

**Table 6. Detailed description of each of the data sources used to inform the grades assigned and key findings for each indicator of the 2016 AHKA Report Card.**

Survey	Sample	Age(in years) /Grade(G), Total n <sup>a</sup>						Indicator <sup>a</sup>
		2010	2011	2012	2013	2014	2015	
<sup>e</sup> ABS AHS/NHS <sup>33, 34</sup>	National		2-17, 2718			15-17, 833		1, 2, 4, 5, 6, 7
ABS CPSLAS <sup>35</sup>	National			5-14, 1849 <sup>c</sup>				2
<sup>e</sup> ABS PSPRA <sup>36, 37</sup>	National	5-14, <sup>d</sup>	15-17, <sup>d</sup>					2
<sup>e</sup> ERASS <sup>38</sup>	National	5-14, 3306						2, 5
<sup>e</sup> LSAC <sup>39-41</sup>	National	6-7 & 10-11, 8397		8-9 & 12-13, 7961		10-11 & 14-15, 7147		2, 7, 8, 9
<sup>e</sup> NaSSDA (child) <sup>42, 43</sup>	National	12-17, 12188		12-17, 8888				1, 2, 3, 4, 5, 6, 7, 9
<sup>e</sup> NaSSDA (school) <sup>43</sup>	National			Secondary, 195				8
<sup>e</sup> ACTPANS <sup>44, 45</sup>	Territory (ACT)			G6, 1332			G6, 1353	1, 2, 4, 6, 7
<sup>e</sup> ISCOLE <sup>46</sup>	State (SA)		9-11, 527					1, 2, 6, 8, 9
<sup>e</sup> LOOK <sup>47</sup>	Territory (ACT)				16, 255			1, 2, 4, 6, 9, 11
<sup>e</sup> NSW PHS <sup>48-51</sup>	State (NSW)	5-15, 2911		5-15, 2878	5-15, 1246	5-15, 1418		1, 4, 6, 10
<sup>e</sup> NSW SSHBS <sup>52, 53</sup>	State (NSW)		12-17, 7691			12-17, 5125		1, 2
<sup>e</sup> OPAL <sup>54</sup>	State (SA)		7-13, 4604					1, 3, 6, 7, 9
<sup>e</sup> QLD CHSS <sup>55-58</sup>	State (QLD)		5-17, 2478		5-17, 2456	5-17, 2960	5-17, 2521	1, 2, 3, 4, 6, 9, 10
<sup>e</sup> SAMSS <sup>59</sup>	State (SA)	5-17, 1147	5-17, 937	5-17, 980	5-17, 1254	5-17, 1257	5-17, 1255	1, 2, 9
<sup>e</sup> SmartStart <sup>60</sup>	Territory (ACT)	4-13, 1889	4-13, 2071					11
SPANS (child) <sup>61</sup>	State (NSW)	GK-10, 8058						6, 7, 10, 11, 12
SPANS (school) <sup>61</sup>	State (NSW)	Primary & Secondary, 101						8
<sup>e</sup> VCHWS <sup>62</sup>	State (VIC)				5-12, 4635			1, 4, 6, 9
<sup>e</sup> VSHAWS <sup>63</sup>	State (VIC)					10-17, 5207		1, 6, 9

Note, please see abbreviations on page 66 for each survey name in full.

<sup>a</sup> The 'Total n' reported is the maximum number of participants for which data was available for any one indicator (i.e., for some indicators the 'Total n' available may be lower than what is reported).

<sup>b</sup> Number coincides with how indicators were listed in the Methods section.

<sup>c</sup> 'Total n' represents a population estimate ('000).

<sup>d</sup> The 'Total n' and/or population estimate was not available.

<sup>e</sup> Shows new data that were not used to inform the grades for the 2014 AHKA Report Card. This may only be for one wave of a given survey.

## ABBREVIATIONS

<b>ABS</b>	Australian Bureau of Statistics
<b>ACTPANS</b>	ACT Year 6 Physical Activity and Nutrition Survey
<b>AHKA</b>	Active Healthy Kids Australia
<b>AHS</b>	Australian Health Survey
<b>AIFS</b>	Australian Institute of Family Studies
<b>CO<sub>2</sub></b>	carbon dioxide
<b>CPSLAS</b>	Children's Participation in Sport and Leisure Activities Survey
<b>ERASS</b>	Exercise Recreation and Sport Survey
<b>FaHCSIA</b>	Department of Families, Housing, Community Services and Indigenous Affairs
<b>FMS</b>	Fundamental Movement Skills
<b>HIIT</b>	High Intensity Interval Training
<b>INC</b>	Incomplete
<b>ISCOLE</b>	International Study of Childhood Obesity, Lifestyle and the Environment
<b>kg</b>	kilogram
<b>kJ</b>	kilojoule
<b>km</b>	kilometre
<b>LOOK</b>	Lifestyle Of Our Kids
<b>L</b>	litre
<b>LSAC</b>	Longitudinal Study of Australian Children
<b>m</b>	metre
<b>min</b>	minute

<b>mL</b>	millilitre
<b>MVPA</b>	Moderate to vigorous physical activity
<b>NaSSDA</b>	National Secondary Students' Diet and Activity
<b>NSW PHS</b>	NSW Population Health Survey
<b>NSW SSHBS</b>	NSW School Students Health behaviours Survey
<b>O<sub>2</sub></b>	oxygen
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OPAL</b>	Obesity Prevention and Lifestyle Survey
<b>PA</b>	Physical activity
<b>PDHPE</b>	Personal Development, Health and Physical Education
<b>PSPRA</b>	Participation in Sport and Physical Recreation
<b>QLD CHSS</b>	QLD Child Health Status Survey
<b>RWG</b>	Research Working Group
<b>S.A.A.F.E</b>	Supportive Active Autonomous Fair Enjoyable
<b>SAMSS</b>	South Australia Monitoring & Surveillance System
<b>Smart-Start</b>	(Robert de Castella's) SmartStart for Kids
<b>SPANS</b>	Schools Physical Activity and Nutrition Survey
<b>UCRISE</b>	Research Institute for Sport and Exercise
<b>VCHWS</b>	Victorian Child Health and Wellbeing Survey
<b>VSHAWS</b>	Victorian Student Health and Wellbeing Survey





# ACKNOWLEDGEMENTS

## **ACT Yr 6 Physical Activity and Nutrition Survey (ACTPANS)**

This Progress Report Card used data from 2012 ACTPANS. We acknowledge the role of ACT Health and ACT Education and Training Directorate staff in managing and co-ordinating the survey. The use of ACTPANS data is authorised by the ACT Chief Health Officer.

## **International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE)**

ISCOLE is a 12-nation study co-ordinated by the Pennington Biomedical Research Center in Louisiana. The Principal Investigators are Dr Peter Katzmarzyk and Dr Tim Church. The Australian Chief Investigators are Professor Tim Olds and Dr Carol Maher from the University of South Australia. Thanks to Dr Lucy Lewis, Dr Katia Ferrar, Dr Rebecca Stanley and Effie Georgiadis for their help in data collection. ISCOLE was funded by the Coca-Cola Company. The funder had no role in study design, data collection and analysis, decision to publish, or preparation of manuscripts.

## **Longitudinal Study of Australian Children (LSAC)**

This Progress Report Card used unit record data from the Growing Up in Australia, the Longitudinal Study of Australian Children. The study is conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). The findings and views reported in this paper are those of the author and should not be attributed to the FaHCSIA, the AIFS or the ABS.

## **Lifestyle of Our Kids (LOOK)**

The LOOK study received important support and collaboration from the Research Institute for Sport and Exercise (UCRISE) at the University of Canberra, The Clinical Trials Unit at the Canberra Hospital, the College of Medicine, Biology and Environment at the Australian National University, The Bluearth Foundation, ACT Pathology at the Canberra Hospital, Deakin University and The Commonwealth Education Trust.

## **National Secondary Students' Diet and Activity (NaSSDA) survey**

This Progress Report Card used aggregated data from the National Secondary Students' Diet and Activity (NaSSDA) survey. We acknowledge funding for the NaSSDA survey was sought from Cancer Council Australia and the National Heart Foundation of Australia and State and Territory Government Health Departments.

## **NSW Population Health Survey (NSW PHS)**

This Progress Report Card used data provided by the NSW Ministry of Health. The data provided is also managed by the NSW Ministry of Health.

## **NSW School Students Health Behaviours Survey (NSW SSHBS)**

This Progress Report Card used data provided by the NSW Ministry of Health. The data provided is also managed by the NSW Ministry of Health.

## **Obesity Prevention and Lifestyle Survey (OPAL)**

OPAL data was collected by Flinders University for SA Health and is owned and managed by SA Health, South Australia, Australia. The opinions expressed in this work are those of the authors and may not represent the position or policy of SA Health.

## **QLD Child Health Status Survey (QLD CHSS)**

The Department of Health, Prevention Division, Preventive Health Branch provided aggregate results from the child preventive health telephone survey for this Progress Report Card. The interpretation of these results are those of the report authors.

## **SA Monitoring & Surveillance System (SAMSS)**

SAMSS is owned by SA Health, South Australia. All collected source data are maintained and managed by Population Research and Outcomes Studies, The University of Adelaide. The opinions expressed in this work are those of the authors and may not represent the position or policy of SA Health.

## **SmartStart**

The original data for 2010/11 from the Australian Capital Territory were gathered by the SmartStart for Kids charity as part of an after schools healthy exercise, eating and lifestyle programme for schools (Data custodian, F Robert de Castella, SmartStart for Kids, 50-52 Colbee Court, Canberra, Australian Capital Territory, ACT 2606, Australia).

## **Schools Physical Activity and Nutrition Survey (SPANS)**

This Progress Report Card used data provided by the NSW Ministry of Health. The data provided is also managed by the NSW Ministry of Health.

## **Victorian Student Health and Wellbeing Survey (VSHAWS)**

This Progress Report Card used data provided by the Victorian Department of Education and Training.

## **Victorian Child Health & Wellbeing Survey (VCHWS)**

This Progress Report Card used data provided by the Victorian Department of Education and Training.

# REFERENCES

- Biddle, S and Asare, M, *Physical activity and mental health in children and adolescents: a review of reviews*. British Journal of Sports Medicine, 2011. **45**: p. 886-895. <http://dx.doi.org/10.1136/bjsports-2011-090185>
- Janssen, I and LeBlanc, A, *Systematic review of the health benefits of physical activity and fitness in school-aged children and youth*. International Journal of Behavioural Nutrition and Physical Activity, 2010. **7**: p. 1-16. <http://dx.doi.org/10.1186/1479-5868-7-40>
- Loprinzi, P, DCardinal, B, Loprinzi, K, and Lee, H, *Benefits and Environmental Determinants of Physical Activity in Children and Adolescents*. Obesity Facts, 2012. **5**: p. 597-610. <http://dx.doi.org/10.1159/000342684>
- Okely, A, Salmon, J, Vella, S, Cliff, D, Timperio, A, Tremblay, M, Trost, S, Shilton, T, KHinkley, T, Ridgers, N, Phillipson, L, Hesketh, K, Parrish, A, Janssen, X, Brown, M, Emmel, J, and Marino, N, *A Systematic Review to update the Australian Physical Activity Guidelines for Children and Young People*, 2012: Canberra, Australia: Commonwealth of Australia.
- Timmons, B, LeBlanc, A, Carson, V, Gorber, S, Dillman, C, Janssen, I, Kho, M, Spence, J, Stearns, J, and Tremblay, M, *Systematic review of physical activity and health in the early years (aged 0-4 years)*. Applied Physiology, Nutrition and Metabolism, 2012. **37**: p. 773-792. <http://dx.doi.org/10.1139/H2012-070>
- Erwin, H, Fedewa, A, Beighle, A, and Ahn, S, *A Quantitative Review of Physical Activity, Health, and Learning Outcomes Associated With Classroom-Based Physical Activity Interventions*. Journal of Applied School Psychology, 2012. **28**(1): p. 14-36. <http://dx.doi.org/10.1080/15377903.2012.643755>
- Keeley, T and Fox, K, *The impact of physical activity and fitness on academic achievement and cognitive performance in children*. International Review of Sport and Exercise Psychology, 2009. **2**(2): p. 194-214. <http://dx.doi.org/10.1080/17509840903233822>
- Department of Health and Ageing, *National Physical Activity and Sedentary Behaviour Guidelines for Australians*, 2014, Commonwealth of Australia: Canberra.
- Schranz, N, Olds, T, Cliff, D, Davern, M, Engelen, L, Giles-Corti, B, Gomersall, S, Hardy, L, Hesketh, K, Hills, A, Lubans, D, Macdonald, D, Macniven, R, Morgan, P, Okely, T, Parish, A, Plotnikoff, R, Shilton, T, Straker, L, Timperio, A, Trost, S, Vella, S, Ziviani, J, and Tomkinson, G, *Results From Australia's 2014 Report Card on Physical Activity for Children and Youth*. Journal of Physical Activity and Health, 2014. **11**(Supp 1): p. S21-S25. <http://dx.doi.org/10.1123/jpah.2014-0164>
- Active Healthy Kids Australia, *Is Sport Enough? The 2014 Active Healthy Kids Australia Report Card on Physical Activity for Children and Young People*, 2014, Active Healthy Kids Australia: Adelaide, South Australia.
- LeBlanc, A, Spence, J, Carson, V, Gorber, S, Dillman, C, Janssen, I, Kho, M, Stearns, J, Timmons, B, and Tremblay, M, *Systematic review of sedentary behaviour and health indicators in the early years (aged 0-4 years)*. Applied Physiology, Nutrition and Metabolism, 2012. **37**: p. 753-772. <http://dx.doi.org/10.1139/H2012-063>
- Straker, L, Howie, E, Cliff, D, Davern, M, Engelen, L, Gomersall, S, Ziviani, J, Schranz, N, Tolds, T, and Tomkinson, G, *Australia and Other Nations Are Failing to Meet Sedentary Behaviour Guidelines for Children: Implications and a Way Forward*. Journal of Physical Activity and Health, 2016. **13**: p. 177-188. <http://dx.doi.org/10.1123/jpah.2015-0026>
- Hallal, P, Bauman, A, Health, G, Kohl, H, Lee, I, and Pratt, M, *Physical activity: more of the same is not enough*. The Lancet, 2012. **380**. [http://dx.doi.org/10.1016/S0140-6736\(12\)61027-7](http://dx.doi.org/10.1016/S0140-6736(12)61027-7)
- National Heart Foundation of Australia. *One year on momentum builds behind move more, sit less*. 2016; Available from: <http://heartfoundation.org.au/news/one-year-on-momentum-builds-behind-move-more-sit-less>.
- Corbin, C, *Implications of physical literacy for research and practice: A commentary*. Research Quarterly for Exercise and Sport, 2016. **87**(1): p. 14-27. <http://dx.doi.org/10.1080/02701367.2016.1124722>
- Longmuir, P and Tremblay, M, *Top 10 Research Questions Related to Physical Literacy*. Research Quarterly for Exercise and Sport, 2016. **87**(1): p. 28-35. <http://dx.doi.org/10.1080/02701367.2016.1124671>
- Jurbala, P, *What Is Physical Literacy, Really?* Quest, 2015. **67**(4): p. 367-383. <http://dx.doi.org/10.1080/00336297.2015.1084341>
- Tremblay, M and Llyod, M, *Physical Literacy Measurement The Missing Piece*. Physical & Health Education Journal, 2010. **76**(1): p. 26.
- Whitehead, M, *Philosophical Considerations in Relation to Developing a Sense of Self, Universality and Propositional Knowledge, Sport, Ethics and Philosophy*. Sport, Ethics and Philosophy, 2007. **1**(3): p. 281-298. <http://dx.doi.org/10.1080/17511320701676916>
- Edwards, L, Bryant, A, Keegan, R, Morgan, K, and Jones, A, *Definitions, Foundations and Associations of Physical Literacy: A Systematic Review*. Sports Medicine, 2016. Published online. <http://dx.doi.org/10.1007/s40279-016-0560-7>
- International Physical Literacy Association. *Physical Literacy*. 2016 September 3; Available from: <https://www.physical-literacy.org.uk/>.
- Whitehead, M, *Definition of physical literacy and clarification of related issues*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 29-34.
- Babic, M, Morgan, P, Plotnikoff, R, Lonsdale, C, White, R, and Lubans, D, *Physical activity and physical self-concept in youth: Systematic review and meta-analysis*. Sports Medicine, 2014. **44**(1589-1601). <http://dx.doi.org/10.1007/s40279-014-0229-z>
- Lubans, D, Morgan, P, Cliff, D, Barnett, L, and Okely, A, *Fundamental movement skills in children and adolescents: Review of associated health benefits*. Sports Medicine, 2010. **40**(12): p. 1019-1035. <http://dx.doi.org/10.2165/11536850-000000000-00000>
- Owen, K, Smith, J, Lubans, D, Ng, J, and Lonsdale, C, *Self-determined motivation and physical activity in children and adolescents: A systematic review and meta-analysis*. Preventive Medicine, 2014. **67**: p. 270-279. <http://dx.doi.org/10.1016/j.ypmed.2014.07.033>
- Taplin, L, *Physical Literacy as Journey*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**: p. 57-63.
- Whitehead, M, *Stages in Physical Literacy Journey*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 52-56.
- Almond, L, *What is the Value of Physical Literacy and why is Physical Literacy valuable?* ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 35-41.
- Canadian Sport for Life. *Canada's physical literacy consensus statement*. 2015 21 July 2016; Available from: [http://www.physicalliteracy.ca/sites/default/files/Consensus-Handout-EN-WEB\\_1.pdf](http://www.physicalliteracy.ca/sites/default/files/Consensus-Handout-EN-WEB_1.pdf).
- Whitehead, M, *The history and development of physical literacy*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**: p. 21-27.
- Whitehead, M, *The Value of Physical Literacy*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 42-43.
- Whitehead, M and Almond, L, *Creating Learning Experiences to foster Physical Literacy*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 73-80.
- Australian Bureau of Statistics, *Australian Health Survey: Physical Activity, 2011-12* 2013: Catalogue No. 4364.0. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics, *National Health Survey: First Results, 2014-15* 2015: Catalogue No. 4364.0.55.001. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics, *Children's Participation in Cultural and Leisure Activities, Australia, 2012* 2012: Catalogue No. 4901.0. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics, *Participation in Sport and Physical Recreation, Australia, 2009-10* 2009-10: Catalogue No. 4177.0. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics, *Participation in Sport and Physical Recreation, Australia, 2011-12* 2011-12: Catalogue No. 4177.0. Canberra: Australian Bureau of Statistics.
- Australian Sports Commission, *Participation in Exercise, Recreation and Sport*, 2012: Canberra, Australia.
- Australian Institute of Family Studies, *Growing Up in Australia, Longitudinal Study of Australian Children (LSAC)*, 2010: Melbourne.



40. Australian Institute of Family Studies, *Growing Up in Australia, Longitudinal Study of Australian Children (LSAC)*, 2012: Melbourne.
41. Australian Institute of Family Studies, *Growing Up in Australia, Longitudinal Study of Australian Children (LSAC)*, 2014: Melbourne.
42. Cancer Council Victoria, *National Secondary Students' Diet and Activity (NaSSDA) survey*, 2009-10: Available from: <http://www.cancer.org.au/preventing-cancer/nutrition-and-physical-activity/national-secondary-students-diet-and-physical-activity-survey.html>.
43. Cancer Council Victoria, *National Secondary Students' Diet and Activity (NaSSDA) survey*, 2012-13: Available from: <http://www.cancer.org.au/news/media-releases/increase-in-teenagers-screen-use-a-new-threat-to-long-term-health.html>.
44. Epidemiology Section ACT Health, *Year 6 ACT Physical Activity and Nutrition Survey*, data collection: 2012: ACT.
45. Epidemiology Section ACT Health, *Year 6 ACT Physical Activity and Nutrition Survey*, data collection: 2015: ACT.
46. Katzmarzyk, P, Barreira, T, Broyles, S, Champagne, C, Chaput, J, Fogelholm, M, Hu, G, Johnson, W, Kuriyan, R, Kurpad, A, Lambert, E, Maher, C, Maia, J, Matsudo, V, Olds, T, Onywera, V, Sarmiento, O, Standage, M, Tremblay, M, Tudor-Locke, C, Zhao, P, and Church, T, *The International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE): design and methods*. BMC Public Health, 2013. **13**: p. 900.
47. Telford, R, Bass, S, Budge, M, Byrne, D, Carlson, J, Coles, D, Cunningham, R, Daly, R, Dunstane, D, English, R, Fitzgerald, R, Eser, P, Gravenmaker, K, Haynes, W, Hickman, P, Javai, A, Jiang, X, Lafferty, T, McGrath, M, Martin, M, Naughton, G, Potter, J, Potter, S, Prosser, L, Pyne, D, Reynolds, G, Saunders, P, Seibel, M, Shaw, J, Southcott, E, Sriksalanukul, W, Stuckey, D, Telford, R, Thomas, K, Tallis, K, and Waring, P, *The lifestyle of our kids (LOOK) project: outline of methods*. Journal of Science and Medicine in Sport, 2009. **12**: p. 156-163. <http://dx.doi.org/10.1016/j.jsams.2007.03.009>
48. Centre for Epidemiology and Evidence NSW Ministry of Health, *Population Health Survey*, Centre for Epidemiology and Evidence NSW Ministry of Health, Editor 2010: <http://www.health.nsw.gov.au/surveys/child/Pages/default.aspx>, New South Wales.
49. Centre for Epidemiology and Evidence NSW Ministry of Health, *Population Health Survey*, Centre for Epidemiology and Evidence NSW Ministry of Health, Editor 2012: <http://www.health.nsw.gov.au/surveys/child/Pages/default.aspx>, New South Wales.
50. Centre for Epidemiology and Evidence NSW Ministry of Health, *Population Health Survey*, Centre for Epidemiology and Evidence NSW Ministry of Health, Editor 2013: <http://www.health.nsw.gov.au/surveys/child/Pages/default.aspx>, New South Wales.
51. Centre for Epidemiology and Evidence NSW Ministry of Health, *Population Health Survey*, Centre for Epidemiology and Evidence NSW Ministry of Health, Editor 2014: <http://www.health.nsw.gov.au/surveys/child/Pages/default.aspx>, New South Wales.
52. Centre for Epidemiology and Evidence NSW Ministry of Health, *School Students Health Behaviours Survey*, Centre for Epidemiology and Evidence NSW Ministry of Health, Editor 2011: <http://www.health.nsw.gov.au/surveys/student/Pages/default.aspx>, New South Wales.
53. Centre for Epidemiology and Evidence NSW Ministry of Health, *School Students Health Behaviours Survey*, Centre for Epidemiology and Evidence NSW Ministry of Health, Editor 2014: <http://www.health.nsw.gov.au/surveys/student/Pages/default.aspx>, New South Wales.
54. Department for Health and Ageing, *Obesity Prevention and Lifestyle (OPAL) Evaluation [unpublished survey data]*, 2013: Department for Health and Ageing: Adelaide, South Australia.
55. Queensland Government Department of Health, *Child Health Status Survey*, Preventive Health Branch 20 March 2015, Editor 2011 [unpublished data]: Brisbane, Queensland.
56. Queensland Government Department of Health, *Child Health Status Survey*, Preventive Health Branch 20 March 2015, Editor 2013 [unpublished data]: Brisbane, Queensland.
57. Queensland Government Department of Health, *Child Health Status Survey*, 2014 [unpublished data], Preventive Health Branch 20 March 2015; Brisbane, Queensland.
58. Queensland Government Department of Health, *Child Health Status Survey*, 2015 [unpublished data], Preventive Health Branch 11 April 2016; Brisbane, Queensland.
59. Taylor, A and Dal Grande, E, *Chronic disease and risk factor surveillance using the SA Monitoring and Surveillance System (SAMSS)-history, results and future challenges*. Public Health Bulletin, 2008. **5**: p. 17-21.
60. Cochrane, T (Personal Communication), *SmartStart for Kids (Aggregated Data)*, 2016: Centre for Research & Action in Public Health, Health Research Institute, University of Canberra.
61. Hardy, L, King, L, Espinel, P, Okely, A, and Bauman, A, *Methods of the NSW schools physical activity and nutrition survey 2010 (SPANS 2010)*. Journal of Science and Medicine in Sport, 2011 **14**(5): p. 390-396. <http://dx.doi.org/10.1016/j.jsams.2011.03.003>
62. Department of Education and Early Childhood Development, *Victorian Child Health and Wellbeing Survey (VCHWS)*, 2013, Department of Education and Early Childhood Development: Victoria.
63. Department of Education and Early Childhood Development, *Victorian Student Health and Wellbeing Survey*, 2014, Department of Education and Early Childhood Development: Victoria.
64. ParticipACTION, *The Biggest Risk is Keeping Kids Indoors. The 2015 ParticipACTION Report Card on Physical Activity for Children and Youth*. Toronto: ParticipACTION, 2015.
65. Colley, R, Janssen, I, and Tremblay, M, *Daily Step Target to Measure Adherence to Physical Activity Guidelines in Children*. Medicine and Science in Sports and Exercise, 2012. **44**(5): p. 977-982. <http://dx.doi.org/10.1249/MSS.0b013e31823f23b1>
66. Trost, S, Pate, R, Freedson, P, Sallis, J, and Taylor, W, *Using objective physical activity measures with youth: how many days of monitoring are needed?* Medicine and Science in Sports and Exercise, 2000. **32**(2): p. 426-431.
67. Olds, T, Ridley, K, Wake, M, Hesketh, K, Waters, E, Patton, G, and Williams, J, *How should activity guidelines for young people be operationalised?* International Journal of Behavioral Nutrition and Physical Activity, 2007. **4**(43). <http://dx.doi.org/10.1186/1479-5868-4-43>
68. Tremblay, M, Carson, V, Chaput, J, Connor Gorber, S, Dinh, T, Duggan, M, Faulkner, G, Gray, C, Gruber, R, Janson, K, Janssen, I, Katzmarzyk, P, Kho, M, Latimer-Cheung, A, LeBlanc, C, Okely, A, Olds, T, Pate, R, Phillips, A, J, V, Rodenburg, S, Sampson, M, Saunders, T, Stone, J, Stratton, G, Weiss, S, and Zehr, L, *Canadian 24-Hour Movement Guidelines for Children and Youth: An Integration of Physical Activity, Sedentary Behaviour, and Sleep*. Applied Physiology, Nutrition and Metabolism, 2016. **41**: p. S311-S327. <http://dx.doi.org/10.1139/apnm-2016-0151>
69. Dumith, S, Gigante, D, Domingues, M, and Kohl, H, *Physical activity change during adolescence: a systematic review and a pooled analysis*. International journal of epidemiology, 2011. **40**(3): p. 685-698. <http://dx.doi.org/10.1093/ije/dyq272>
70. Howie, E, McVeigh, J, Smith, A, and Straker, L, *Organized Sport Trajectories from Childhood to Adolescence and Health Associations*. Medicine and Science in Sports and Exercise, 2016. **48**(7): p. 1331-1339. <http://dx.doi.org/10.1249/MSS.0000000000000894>
71. Ingram, D, *Age-related decline in physical activity: generalization to nonhumans*. Medicine and Science in Sports and Exercise, 2000. **32**(9): p. 1623-1629. <http://dx.doi.org/10.1097/00005768-200009000-00016>
72. Sallis, J, *Age-related decline in physical activity: a synthesis of human and animal studies*. Medicine and Science in Sports and Exercise, 2000. **32**(9): p. 1598-1600.
73. Martins, J, Marques, A, Sarmento, H, and da Costa, F, *Adolescents' perspectives on the barriers and facilitators of physical activity: a systematic review of qualitative studies*. Health Education Research, 2015. **30**(5): p. 742-755. <http://dx.doi.org/10.1093/her/cyv042>
74. Hardy, L, Kelly, B, Chapman, K, King, L, and Farrell, L, *Parental perceptions of barriers to children's participation in organised sport in Australia*. Journal of Paediatrics and Child Health, 2010. **26**(46): p. 197-203. <http://dx.doi.org/10.1111/j.1440-1754.2009.01661.x>
75. Moore, J, Jilott, S, Shores, K, Evenson, K, Brownson, R, and Novick, L, *A qualitative examination of perceived barriers and facilitators of physical activity for urban and rural youth*. Health Education Research, 2010. **25**(2): p. 355-367. <http://dx.doi.org/10.1093/her/cyq004>



76. Olds, T, Dollman, J, and Maher, C, *Adolescent sport in Australia: who, when, where and what?* . ACHPER Healthy Lifestyles Journal, 2009. **56**(1): p. 11-16.
77. Hulteen, R, Lander, N, Morgan, P, Barnett, L, Robertson, S, and Lubans, D R, *Validity and reliability of field-based measures for assessing movement skill competency in lifelong physical activities: A systematic review.* Sports Medicine, 2015. **45**(10): p. 1443-1454. <http://dx.doi.org/10.1007/s40279-015-0357-0>.
78. Vella, S, Cliff, D, Magee, C, and Okely, A, *Sports participation and parent-reported health-related quality of life in children: Longitudinal associations.* Journal of Pediatrics, 2014. <http://dx.doi.org/10.1016/j.jpeds.2014.01.071>
79. Cope, E, Bailey, R, and Pearce, E, *Why do children take part in, and remain involved in sport? A literature review and discussion of implications for sports coaches.* International Journal of Coaching Science, 2013. **7**(1): p. 55-74.
80. Sienkanska, M, *Athletes' perception of parental support and its influence on sports accomplishments – a retrospective study.* Human Movement, 2012. **13**(4): p. 380-387. <http://dx.doi.org/10.2478/v10038-012-0046-x>
81. Play by the Rules. *Play by the Rules: making sport inclusive, safe and fair.* [cited 2016 August 31]; Available from: <http://www.playbytherules.net.au/>.
82. Elliott, S and Drummond, M, *Parents in youth sport: what happens after the game?* Sport, Education and Society, 2015. <http://dx.doi.org/10.1080/13573322.2015.1036233>
83. Omli, J and Wiese-Bjornstal, D, *Kids Speak.* Research Quarterly for Exercise and Sport, 2011. **82**(4): p. 702-711. <http://dx.doi.org/10.1080/02701367.2011.10599807>
84. Lubans, D, Morgan, P, Weaver, K, Callister, R, Dewar, D, Costigan, S, Finn, T, Smith, J, Upton, L, and Plotnikoff, R, *Rationale and study protocol for the Supporting Children's Outcomes using Rewards, Exercise and Skills (SCORES) group randomized controlled trial: A physical activity and fundamental movement skills intervention for primary schools in low-income communities.* BMC Public Health, 2012. **12**: p. 427. <http://www.biomedcentral.com/1471-2458/12/427>.
85. Hills, A, Dengel, D, and Lubans, D, *Supporting Public Health Priorities: Recommendations for Physical Education and Physical Activity Promotion in Schools.* Progress in Cardiovascular Diseases, 2015. **57**(4): p. 368-374. <http://dx.doi.org/http://dx.doi.org/10.1016/j.pcad.2014.09.010>
86. Stanley, R, Ridley, K, and Dollman, J, *Correlates of children's time-specific physical activity: A review of the literature.* International Journal of Behavioral Nutrition and Physical Activity, 2012. **9**, <http://dx.doi.org/10.1186/1479-5868-9-50>
87. Ridgers, N, Salmon, J, Parrish, A, Stanley, R, and Okely, A, *Physical Activity During School Recess: A Systematic Review.* American Journal of Preventive Medicine, 2012. **43**(3): p. 320-328.
88. Audit Office of New South Wales, *New South Wales Auditor-General's Report, Performance Audit: Physical Activity in Government Primary Schools, Department of Education and Communities*, 2012: Audit Office of New South Wales: Sydney, NSW.
89. Hollis, J, Williams, A, Sutherland, R, Campbell, E, Nathan, N, Wolfenden, L, Morgan, P, Lubans, D, and Wiggers, J, *A systematic review and meta-analysis of moderate-to-vigorous physical activity levels in elementary school physical education lessons.* Preventive Medicine, 2016. **86**: p. 34-54. <http://dx.doi.org/10.1016/j.ypmed.2015.11.018>
90. Ramstetter, C, Murray, R, and Garner, A, *The Crucial Role of Recess in Schools.* Journal of School Health, 2010. **80**: p. 517-526. <http://dx.doi.org/10.1111/j.1746-1561.2010.00537.x>
91. Brussoni, M, Gibbons, R, Gray, C, Ishikawa, T, Sandseter, E, Bienenstock, A, Chabot, G, Fuselli, P, Herrington, S, Janssen, I, Pickett, W, Power, M, Stranger, N, Sampson, M, and YTremblay, M, *What is the relationship between risky outdoor play and health in children? A systematic review.* . International Journal of Environmental Research and Public Health, 2015. **12**(6): p. 6423-6454. <http://dx.doi.org/10.3390/ijerph120606423>
92. Ridgers, N, Stratton, G, Fairclough, S, and Twisk, J, *Long-term effects of a playground markings and physical structures on children's recess physical activity levels.* Preventive Medicine, 2007. **44**: p. 393-397. <http://dx.doi.org/10.1016/j.ypmed.2007.01.009>
93. Stratton, G and Mullan, E, *The effect of multicolor playground markings on children's physical activity level during recess.* Preventive Medicine, 2005. **41**: p. 828-833. <http://dx.doi.org/10.1016/j.ypmed.2005.07.009>
94. Willenberg, L, Ashbolt, R, Holland, D, Gibbs, L, MacDougall, C, Garrard, J, Green, J, and Waters, E, *Increasing school playground physical activity: A mixed methods study combining environmental measures and children's perspectives.* Journal of Science and Medicine in Sport, 2010. **13**: p. 210-216. <http://dx.doi.org/10.1016/j.jsams.2009.02.011>
95. Carver, A, Timperio, A, Hesketh, K, and Crawford, D, *Are safety-related features of the road environment associated with smaller declines in physical activity among youth?* Journal of Urban Health, 2010. **87**(1): p. 29-43. <http://dx.doi.org/10.1007/s11524-009-9402-3>
96. Pont, K, Wadley, D, Ziviani, J, and Khan, A, *The Influence of Urban Form and Family Decision Making on Children's Travel to School.* Journal of Urban Design, 2013. **18**(3): p. 363-382. <http://dx.doi.org/10.1080/13574809.2013.800452>
97. Trapp, G, Giles-Corti, B, Christian, H, Bulsara, M, Timperio, A, McCormack, G, and Villaneuva, K, *Increasing Children's Physical Activity: Individual, Social, and Environmental Factors Associated With Walking to and From School.* Health Education & Behavior, 2012. **39**(2): p. 172-182. <http://dx.doi.org/10.1177/1090198111423272>
98. Global Advocacy for Physical Activity (GAPA) the Advocacy Council of the International Society for Physical Activity and Health (ISPAH). *NCD Prevention: Investments that Work for Physical Activity.* 2011; Available from: [www.globalpa.org.uk/investmentsthatwork](http://www.globalpa.org.uk/investmentsthatwork).
99. Voss, C, Winters, M, Frazer, A, and McKay, H, *School-travel by public transit: Rethinking active transportation.* Preventive Medicine Reports, 2015. **2**: p. 65-70. <http://dx.doi.org/10.1016/j.pmedr.2015.01.004>
100. Timperio, A, Ball, K, Salmon, J, Roberts, R, Giles-Corti, B, Simmons, D, Baur, L, and Crawford, D, *Personal, Family, Social, and Environmental Correlates of Active Commuting to School.* American Journal of Preventive Medicine, 2006. **30**(1): p. 45-51. <http://dx.doi.org/10.1016/j.amepre.2005.08.047>
101. Wong, B, Faulkner, G, and Buliung, R, *GIS measured environmental correlates of active school transport: A systematic review of 14 studies.* International Journal of Behavioral Nutrition and Physical Activity, 2011. **8**(39). <http://dx.doi.org/10.1186/1479-5868-8-39>
102. Active Healthy Kids Australia, *The Road Less Travelled: The 2015 Active Healthy Kids Australia Progress Report Card on Active Transport for Children and Young People*, 2015, Active Healthy Kids Australia: Adelaide, South Australia.
103. Royal Automobile Club of Queensland, *Private vehicle expenses*, 2016, Royal Automobile Club of Queensland: Queensland, Australia.
104. Australian Government Climate Change Authority, *Light Vehicle Emissions Standards For Australia: Research Report*, 2014, Australian Government Climate Change Authority: Canberra, Australia.
105. ParticipACTION. *Position Statement on Active Outdoor Play.* 2015; Available from: <http://www.ccamping.org/wp-content/uploads/2015/06/Position-Statement-on-Active-Outdoor-Play-EN-FINAL.pdf>.
106. Fletcher, R, May, C, St George, J, Morgan, P, and Lubans, D, *Fathers' perceptions of rough & tumble play: Implications for early childhood services.* Australasian Journal of Early Childhood 2011. **36**(4): p. 131-138.
107. Alexander, S, Frohlich, K, and Fusco, C, *Playing for health? Revisiting health promotion to examine the emerging public health position on children's play.* Health Promotion International. **29**(1): p. 155-164. <http://dx.doi.org/10.1093/heapro/das042>
108. Brockman, R, Fox, K, and Jago, R, *What is the meaning and nature of active play for today's children in the UK?* International Journal of Behavioral Nutrition and Physical Activity, 2011. **8**: p. 15. <http://www.ijbnpa.org/content/8/1/15>.
109. Department of Health and Ageing, *Australian National Children's Nutrition and Physical Activity Survey: main findings*, 2008: Prepared by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the University of South Australia. Canberra, ACT: Department of Health and Ageing.
110. Pellis, S and Pellis, V, *Rough-and-Tumble Play and the Development of the Social Brain* Current Directions in Psychological Science, 2007. **16**(2): p. 95-98. <http://www.jstor.org/stable/20183170>.

111. Pellis, S, Pellis, V, and Bell, H, *The Function of Play in the Development of the Social Brain*. American Journal of Play, 2010. **Winter**: p. 278-296.
112. Rey-Lopez, J, Vicente-Rodriguez, G, Ortega, F, Ruiz, J, Martinez-Gomez, D, de Henauw, S, Manios, Y, Molnar, D, Polito, A, Verloigne, M, Castillo, M, Sjostrom, M, De Bourdeaudhuij, I, and Moreno, L, *Sedentary Patterns and Media Availability in European Adolescents: The Helena Study*. Preventive Medicine, 2010. **51**(1): p. 50-55. <http://dx.doi.org/10.1016/j.ypmed.2010.03.013>
113. Allen, M and Vella, S, *Screen-based sedentary behaviour and psychosocial well-being in childhood: Cross-sectional and longitudinal associations*. Mental Health and Physical Activity, 2015. **9**: p. 41-47. <http://dx.doi.org/10.1016/j.mhpa.2015.10.002>
114. Sigman, A, *Time for a view on screen time*. Archives of Disease in Childhood, 2012. **97**(11): p. 935-942. <http://dx.doi.org/10.1136/archdischild-2012-302196>
115. Straker, L, Abbott, R, Collins, R, and Campbell, A, *Evidence-based guidelines for wise use of electronic games by children*. Ergonomics, 2014. **57**(4): p. 471-489. <http://dx.doi.org/10.1080/00140139.2014.895856>
116. Straker, L, Maslen, B, Burgess-Limerick, R, Johnson, P, and Dennerlein, J, *Evidence-based guidelines for the wise use of computers by children: Physical development guidelines*. Ergonomics, 2010. **53**(4): p. 458-477. <http://dx.doi.org/10.1080/00140130903556344>
117. Lubans, D, Lonsdale, C, Plotnikoff, R, Smith, J, Dally, K, and Morgan, P, *Development and evaluation of the Motivation to Limit Screen-time Questionnaire (MLSQ) for adolescents*. Preventive Medicine, 2013. **57**: p. 561-566. <http://dx.doi.org/10.1016/j.ypmed.2013.07.023>
118. Abbott, R, Straker, L, and Mathiassen, S, *Patterning of children's sedentary time at and away from school*. Obesity, 2013. **21**: p. E131-E133. <http://dx.doi.org/10.1002/oby.20127>
119. Ridgers, N, Salmon, J, Ridley, K, O'Connell, E, Arundell, L, and Timperio, A, *Agreement between activPAL and ActiGraph for assessing children's sedentary time*. International Journal of Behavioral Nutrition and Physical Activity, 2012. **9**. <http://dx.doi.org/10.1186/1479-5868-9-15>
120. Jago, R, Sebire, S, Gorely, T, Cillero, I, and Biddle, S, *"I'm on it 24/7 at the moment": A qualitative examination of multi-screen viewing behaviours among UK 10-11 year olds*. International Journal of Behavioral Nutrition and Physical Activity, 2011. **8**. <http://dx.doi.org/10.1186/1479-5868-8-85>
121. Atkin, A, Gorely, T, Clemes, S, Thomas Yates, T, Edwardson, C, Brage, S, Salmon, J, Simon J Marshall, S, and Biddle, S, *Methods of Measurement in epidemiology: Sedentary Behaviour*. International Journal of Epidemiology, 2012. **41**(5): p. 1460-1471. <http://dx.doi.org/10.1093/ije/dys118>
122. Medibank, *Medibank Health Check*, 2016: [https://www.medibank.com.au/Client/Documents/Pdfs/Medibank\\_Health\\_Check\\_1\\_Screen\\_time.pdf](https://www.medibank.com.au/Client/Documents/Pdfs/Medibank_Health_Check_1_Screen_time.pdf).
123. Maidstone Consulting and Empowered Communications, *Telstra Report*, 2015: <http://www.smh.com.au/digital-life/mobiles/kids-smartphone-usage-rampant-says-study-20150316-1m0nti.html>.
124. Houghton, S, Hunter, S, Rosenberg, M, Wood, L, Zadow, C, Martin, K, and Shilton, T, *Virtually impossible: limiting Australian children and adolescents daily screen based media use*. BMC Public Health, 2015. **15**(5): p. <http://www.biomedcentral.com/1471-2458/15/5>.
125. Lee, S, Nihiser, A, Strouse, D, Das, B, Michael, S, and Huhman, M, *Correlates of Children and Parents Being Physically Active Together*. Journal of Physical Activity and Health, 2010. **7**: p. 776-783.
126. Saunders, T, Chaput, J, and Tremblay, M, *Sedentary Behaviour as an Emerging Risk Factor for Cardiometabolic Diseases in Children and Youth*. Canadian Journal of Diabetes, 2014. **38**: p. 53-61. <http://dx.doi.org/10.1016/j.cjcd.2013.08.266>
127. VicHealth, *Active for Life*, 2014: Victorian Health Promotion Foundation, Melbourne, Australia.
128. Jong, S and Drummond, M, *Exploring online fitness culture and young females*. Leisure Studies, 2016. <http://dx.doi.org/10.1080/02614367.2016.1182202>
129. Vaterlaus, J, Patten, E, Roche, C, and Young, J, *#Gettinghealthy: The perceived influence of social media on young adult health behaviors*. Computers in Human Behavior, 2015. **45**: p. 151-157. <http://dx.doi.org/10.1016/j.chb.2014.12.013>
130. Maher, C, Ryan, J, Kernot, J, Podsiadly, J, and Keenihan, S, *Social media and applications to health behavior*. Current Opinion in Psychology, 2016. **9**: p. 50-55. <http://dx.doi.org/10.1016/j.copsyc.2015.10.021>
131. Mullender-Wijnsma, M, Hartman, E, de Greef, J, Bosker, R, Doolaard, S, and Visscher, C, *Improving Academic Performance of School-Age Children by Physical Activity in the Classroom: 1-Year Program Evaluation*. Journal of School Health, 2015. **85**(6): p. 365-371. <http://dx.doi.org/10.1111/josh.12259>
132. Cohen, K, Morgan, P, Plotnikoff, R, Callister, R, and Lubans, D, *Physical Activity and Skills Intervention: SCORES Cluster Randomized Controlled Trial*. Medicine and Science in Sports and Exercise, 2015. **47**(4): p. 765-774. <http://dx.doi.org/10.1249/MSS.0000000000000452>
133. Sutherland, R, Campbell, E, Lubans, D, Morgan, P, Nathan, N, Wolfenden, L, Okely, A, Gillham, K, Hollis, J, Oldmeadow, C, Williams, A, Davies, L, Wiese, J, Bisquera, A, and Wiggers, J, *The 'Physical Activity 4 Everyone' cluster randomised trial: Two year outcomes of a multi-component school-based physical activity intervention among adolescents*. American Journal of Preventive Medicine, 2016. **51**(2): p. 195-205. <http://dx.doi.org/10.1016/j.amepre.2016.02.020>
134. Morgan, P, Barnett, L, Cliff, D, Okely, A, Scott, H, Cohen, K, and Lubans, D, *Fundamental movement skill interventions in youth: A systematic review and meta-analysis*. Pediatrics, 2013. **132**(5): p. e1361-e1383. <http://dx.doi.org/10.1542/peds.2013-1167>
135. Telford, R, Olive, L, Cochrane, T, Davey, R, and Telford, R, *Outcomes of a four-year specialist-taught physical education program on physical activity: a cluster randomized controlled trial, the LOOK study*. International Journal of Behavioral Nutrition and Physical Activity, 2016. **13**(64). <http://dx.doi.org/10.1186/s12966-016-0388-4>
136. Council on School Health, *The Crucial Role of Recess in School*. Pediatrics, 2013. **131**: p. 183-188. <http://dx.doi.org/10.1542/peds.2012-2993>
137. Parrish, A, Okely, A, Batterham, M, Cliff, D, and Magee, C, *PACE: A group randomised controlled trial to increase children's break-time playground physical activity*. Journal of Science and Medicine in Sport, 2015. **19**(5): p. 413-418. <http://dx.doi.org/10.1016/j.jsams.2015.04.017>
138. Naylor, P, Nettlefold, L, Race, D, Hoy, C, Ashe, M, Higgins, J, and McKay, H, *Implementation of school based physical activity interventions: a systematic review*. Preventive medicine, 2015. **72**: p. 95-115. <http://dx.doi.org/10.1016/j.ypmed.2014.12.034>
139. New South Wales Department of Education, *NSW Physical Literacy continuum K-10*, 2016: Sydney, NSW.
140. Almond, L, *Translating Physical Literacy into Practical Steps: the Role of Pedagogy*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 64-72.
141. Veitch, J, Salmon, J, Parker, K, Bangay, S, Deforche, B, and Timperio, A, *Adolescents' ratings of features of parks that encourage park visitation and physical activity*. International Journal of Behavioural Nutrition and Physical Activity, 2016. **13**: p. 73. <http://dx.doi.org/10.1186/s12966-016-0391-9>
142. Little, H and Eager, D, *Risk, challenge and safety: implications for play quality and playground design*. European Early Childhood Education Research Journal, 2010. **18**(4): p. 497-513. <http://dx.doi.org/10.1080/1350293X.2010.525949>
143. Brunelle, S, Herrington, S, Coghlan, R, and Brussoni, M, *Play Worth Remembering: Are Playgrounds Too Safe?* Children, Youth and Environments, 2016. **26**(1): p. 17-36. <http://www.jstor.org/action/showPublication?journalCode=chilyoutenvi>.
144. McGlone, N, *Pop-Up kids: exploring children's experience of temporary public space*. Australian Planner, 2016. **53**(2): p. 117-126. <http://dx.doi.org/10.1080/07293682.2015.1135811>
145. City of Port Phillip. *Moubray Street community park*. [cited 2016 September 1]; Available from: <http://www.portphillip.vic.gov.au/moubray-street-community-park.htm>.
146. Global Observatory for Physical Activity. *Country Cards*. [cited 2016 September 2]; Available from: <http://www.globalphysicalactivityobservatory.com/country-cards/>.
147. Australian Government Department of Health. *National Partnership Agreement on Preventive Health*. 2013 [cited 2014 27 March]; Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/phd-prevention-np>.

148. Australian Government Australian Sports Commission. *Sporting Schools*. 2016; Available from: <https://sportingschools.gov.au/>.
149. Australian Government Department of Health. *Girls Make Your Move*. 2016; Available from: <http://www.health.gov.au/internet/girlsmove/publishing.nsf/Content/home>.
150. Trang, N, Hong, T, Van Der Ploeg, H, Hardy, L, Kelly, P, and Dibley, M, *Longitudinal Physical Activity Changes in Adolescents: Ho Chi Minh City Youth Cohort*. Medicine and Science in Sports and Exercise, 2012. **44**(8): p. 1481-1489. <http://dx.doi.org/10.1249/MSS.0b013e31824e50dc>
151. Wakefield, M, Loken, B, and Hornik, R, *Use of mass media campaigns to change health behaviour*. The Lancet, 2010. **376**(9748): p. 1261-1271. [http://dx.doi.org/10.1016/S0140-6736\(10\)60809-4](http://dx.doi.org/10.1016/S0140-6736(10)60809-4)
152. Leavy, J E, Bull, F C, Rosenberg, M, and Bauman, A, *Physical activity mass media campaigns and their evaluation: a systematic review of the literature 2003-2010*. Health education research, 2011. <http://dx.doi.org/10.1093/her/cyr069>
153. Bauman, A and Chau, J, *The role of media in promoting physical activity*. Journal of physical activity & health, 2009. **6**(6): p. S196-S210. <http://dx.doi.org/10.1123/jpah.6.s2.s196>
154. Jones, S. 'Girls Make Your Move' exercise ads look good but are unlikely to deliver on their own The Conversation 2016; Available from: <https://theconversation.com/girls-make-your-move-exercise-ads-look-good-but-are-unlikely-to-deliver-on-their-own-55638>.
155. National Heart Foundation of Australia, *Blueprint for an active Australia. 2nd edn.*, 2014, National Heart Foundation of Australia: Melbourne.
156. National Heart Foundation of Australia, *Move more, sit less: Australia needs a funded National Physical Activity Action Plan*, 2015, National Heart Foundation of Australia: Canberra.
157. Tomkinson, G, Lang, J, Tremblay, M, Dale, M, LeBlanc, A, Belanger, K, Ortega, F, and Leger, L, *International normative 20 m shuttle run values from 1 142 026 children and youth representing 50 countries*. British Journal of Sports Medicine, 2016. Published Online First: 7 May 2016. <http://dx.doi.org/10.1136/bjsports-2016-095987>
158. Ortega, F, Ruiz, J, Castillo, M, and Sjöström, M, *Physical fitness in childhood and adolescence: a powerful marker of health*. International journal of obesity, 2008. **32**(1): p. 1-11. <http://dx.doi.org/10.1038/sj.ijo.0803774>
159. Carson, V, Rinaldi, R, Torrance, B, Maximova, K, Ball, G, Majumdar, S, Plotnikoff, R, Veugelers, P, Boule, N, Wozny, P, McGargar, L, Downs, S, Daymont, C, Lewanczuk, R, and McGavock, J, *Vigorous physical activity and longitudinal associations with cardiometabolic risk factors in youth*. Int J Obes, 2014. **38**(1): p. 16-21. <http://dx.doi.org/10.1038/ijo.2013.135>
160. Costigan, S, Eather, N, Plotnikoff, R, Taaffe, D, and Lubans, D, *High intensity interval training for improving health-related fitness in adolescents: A systematic review and meta-analysis*. British Journal of Sports Medicine, 2015. **49**: p. 1253-1261. <http://dx.doi.org/10.1136/bjsports-2014-094490>
161. Owens, S, Galloway, R, and Gutin, B, *The Case for Vigorous Physical Activity in Youth*. American Journal of Lifestyle Medicine, 2015. Published online before print. <http://dx.doi.org/10.1177/1559827615594585>
162. Armstrong, N, Tomkinson, G, and Ekelund, U, *Aerobic fitness and its relationship to sport, exercise training and habitual physical activity during youth*. British Journal of Sports Medicine, 2011. **45**(11): p. 849-858. <http://dx.doi.org/10.1136/bjsports-2011-090200>
163. Tomkinson, G and Olds, T, *Secular changes in pediatric aerobic fitness test performance: The global picture*. Medicine and Sport Science. Vol. 50. 2007: Karger Publishers. 46-66. <http://dx.doi.org/10.1159/0000101075>
164. Ruiz, J, Castro-Piñero, J, España-Romero, V, Artero, E, Ortega, F, Cuenca, M, Jimenez-Pavón, D, Chillón, P, Girela-Rejón, M, Mora, J, Gutiérrez, Á, Suni, J, Sjöström, M, and Castillo, M, *Field-based fitness assessment in young people: the ALPHA health-related fitness test battery for children and adolescents*. British Journal of Sports Medicine, 2011. **45**(6): p. 518-524. <http://dx.doi.org/10.1136/bjism.2010.075341>
165. Institute of Medicine, *Fitness measures and health outcomes in youth*. 2012, Washington, DC The National Academies Press.
166. Australian Sports Commission, *20m shuttle run test: a progressive shuttle run test for measuring aerobic fitness*. 1999, Belconnen (ACT): Australian Coaching Council.
167. Pyke, J, *Australian health and fitness survey 1985: The fitness, health and physical performance of Australian school students aged 7-15 years*. 1987, Parkside, SA: The Australian Council for Health, Physical Education and Recreation.
168. Ruiz, J R, Huybrechts, I, Cuenca-García, M, Artero, E G, Labayen, I, Meirhaeghe, A, Vicente-Rodriguez, G, Polito, A, Manios, Y, and González-Gross, M, *Cardiorespiratory fitness and ideal cardiovascular health in European adolescents*. Heart, 2015. **101**(10): p. 766-773. <http://dx.doi.org/10.1136/heartjnl-2014-306750>
169. Welk, G J, Laurson, K R, Eisenmann, J C, and Cureton, K J, *Development of youth aerobic-capacity standards using receiver operating characteristic curves*. American Journal of Preventive Medicine, 2011. **41**(4): p. S111-S116. <http://dx.doi.org/10.1016/j.amepre.2011.07.007>
170. Höglström, G, Nordström, A, and Nordström, P, *Aerobic fitness in late adolescence and the risk of early death: a prospective cohort study of 1.3 million Swedish men*. International Journal of Epidemiology, 2015. First published online: December 20, 2015. <http://dx.doi.org/10.1093/ije/dyv321>
171. Sato, M, Kodama, S, Sugawara, A, Saito, K, and Sone, H, *Physical fitness during adolescence and adult mortality*. Epidemiology, 2009. **20**(3): p. 463-464. <http://dx.doi.org/10.1097/EDE.0b013e31819ed09f>
172. NSW Department of Education and Training, *Get skilled: Get active. A K-6 resource to support the teaching of fundamental movement skills*. Ryde, NSW: NSW Department of Education and Training, 2000.
173. Giblin, S, Collins, D, and Button, C, *Physical Literacy: Importance, Assessment and Future Directions*. Sports Medicine, 2014. **44**: p. 1177-1184. <http://dx.doi.org/10.1007/s40279-014-0205-7>
174. Logan, S, Robinson, L, Wilson, A, and Lucas, W, *Getting the fundamentals of movement: a meta-analysis of the effectiveness of motor skill interventions in children*. Child: care, health and development, 2012. **38**(3): p. 305-315. <http://dx.doi.org/10.1111/j.1365-2214.2011.01307.x>
175. Gabbard, C, *Lifelong motor development, 6 edn*. 2012, San Francisco: Pearson Benjamin Cummings.
176. Almond, L, *Physical Literacy and Fundamental Movement Skills: an Introductory critique*. ICSSPE Bulletin Journal of Sport Science and Physical Education, 2013. **65**(October): p. 81-89.
177. Robinson, L E, Stodden, D F, Barnett, L M, Lopes, V P, Logan, S W, Rodrigues, L P, and D'Hondt, E, *Motor competence and its effect on positive developmental trajectories of health*. Sports Medicine, 2015. **45**(9): p. 1273-1284. <http://dx.doi.org/10.1007/s40279-015-0351-6>







**ACTIVE HEALTHY KIDS**  
AUSTRALIA