

## ACT Government Health Directorate Physical Activity Strategic Framework 2012–2015







STRATEGIC FRAMEWORK

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# Contents

Forev	word	
Summary of Key Messages		
Introduction		
. Governance		
. Scope and Purpose		
. Guiding Principles		
Back	ground	
7.1	National Policy Context	
7.2	ACT Policy Context	
7.3	Links with Other Policies	
Natio Recor	nal Physical Activity Guidelines and mmendations	
<ol><li>Physical Activity and Health Status</li></ol>		
9.1	The Health Benefits of Physical Activity in Adults	
9.2	The Health Benefits of Physical Activity in Children and Young People	
9.3	Health Benefits of Physical Activity in Older People	
9.4	Sedentary Living: A Risk Factor for Chronic Disease	
. Physi	cal Activity – The Economic Imperative	
. Barrie Physio	ers and Enablers to Participation in cal Activity	
11.1	Barriers and Enablers	
11.2	Active Travel – A Way to Integrate Physical Activity into Daily Life	
11.3	The Case for Improving the Uptake of Walking as Physical Activity	
11.4	The Built Environment – The Importance of Good Urban Design	
11.5	The Importance of Comprehensive Physical Activity Data and Reporting	
.Strate	egic Focus Areas	
. Priori	ities against Strategic Focus Areas within	
the A	CT Government Health Directorate	
pendi	x A: Associated policies	
pendi	x B: National Physical Activity Guidelines and Recommendations	
References		
	Forev Sumr Introd Gove Scope Guidi Back 7.1 7.2 7.3 Natic Recol Physi 9.1 9.2 9.3 9.4 Physi 11.1 11.2 11.3 11.4 11.5 Strate Physio 11.1 11.2 11.3 11.4	Foreword  Summary of Key Messages    Introduction  Governance    Scope and Purpose  Guiding Principles    Background

## 1. Foreword



It gives me great pleasure to endorse the ACT Government Health Directorate Physical Activity Strategic Framework 2012–2015

Although Canberrans enjoy comparatively good health, the prevalence of chronic disease is increasing and our ageing population places ever-growing pressures on the finite resources of our health system.

Improving the uptake of physical activity at a population level can play a vital role in relieving these pressures. Physical activity can be preventative as well as helping to improve the quality of life of those with a chronic disease. Physical inactivity, on the other hand, plays a direct role in the development and progression of chronic health conditions.

This Framework seeks to highlight physical activity as a priority area for the Health Directorate and create greater recognition of the importance of physical activity in optimising health outcomes. It brings together current evidence and identifies key physical activity issues for the ACT population. It also sets out our key strategic priorities.

Many of the drivers which can make a positive contribution to improved physical activity outcomes, such as transport and urban planning policy, are however outside of the direct control of the Health Directorate. The Framework therefore describes the key roles that other sectors can play in the improvement of physical activity outcomes and acknowledges our many shared goals across government portfolios and in the community sector.

Changes to the ACT Public Service structure following the Hawke Review in 2011 will be useful in facilitating the collaborative approaches across Government that will ultimately be necessary to deliver the greatest benefits in this area. The Health Directorate is very well placed to be an effective advocate in these broader processes.

The Health Directorate for its own part will continue to work towards, and advocate for, innovative ways to promote physical activity in our daily work and play, and in our schools, families and communities, so that the healthy choice to be physically active can be the easy choice.

Katy Gallagher

Katy Gallagher Minister for Health August 2012

# 2. Summary of Key Messages

A wide range of evidence confirms that physical activity is good for health on both an individual and population health levels;

A physically active lifestyle in childhood brings numerous health benefits and healthy behaviour patterns that continue into adulthood, as well as gains in social and emotional development;

Physical inactivity, on the other hand, plays a direct role in the development and progression of a range of chronic conditions such as cardiovascular disease, obesity, some forms of cancer, and Type 2 diabetes. The Australian Institute of Health and Welfare has identified that physical inactivity accounts for 6.6% of the total burden of disease in Australia;

Improving participation in physical activity can provide significant economic benefits. One study has estimated the economic cost of physical inactivity in Australia (both directly and indirectly) at \$13.8 billion per annum. There is thus an important economic imperative for the Health Directorate to help improve physical activity outcomes;

Physical activity does not have to be in the form of organised sport or structured physical training activities to be beneficial. Incidental physical activity such as gardening, housework and walking up the stairs also has a positive health benefit. There are a range of opportunities to improve the uptake of incidental physical activity;

Australian National Physical Activity Guidelines emphasise that a minimum of 30 minutes of moderate to vigorous physical activity per day is required on most, preferably all, days for adults to achieve a health benefit. Children and young people under the age of 18 require at least 60 minutes of moderate to vigorous physical activity every day;

ACT research shows that most children in the ACT do not do enough physical activity to comply with the Australian Physical Activity Recommendations;

ACT research also shows that most adults in the ACT do not do enough physical activity to comply with the Australian Physical Activity Guidelines;

Changes in lifestyle and work practices into the 21st century can result in people spending many of their waking hours engaged in sedentary pursuits. Emerging research is showing that this can be a risk for poor health, even for adults who are still undertaking the recommended 30 minutes of moderate to vigorous physical activity each day;

Physical activity should therefore be seen as *an opportunity not an inconvenience*, and initiatives and policies that promote any extra form of movement should be supported;

Walking is the most popular form of physical activity in Canberra and has the advantage of being free, accessible to all age groups, and easily incorporated into everyday activities. Measures that achieve an increased uptake of walking are therefore important to improve physical activity outcomes;

The Health Directorate's ability to effectively advocate for positive policy across a range of sectors is one of the key contributions that it can make to improving physical activity outcomes, both within and external to the ACT Government;

The Health Directorate is also ideally placed to advocate for physical activity with client groups, through services contracted out, and with its staff.

# 3. Introduction

The potential benefits of physical activity to health are huge. If a medication existed which had a similar effect, it would be regarded as a 'wonder drug' or 'miracle cure'.

Sir Liam Donaldson, U.K. Chief Medical Officer, 2010.

Physical activity is an important ingredient in maintaining optimal physical and mental health and wellbeing. While Canberrans enjoy relatively good health, chronic diseases are still a significant concern. The 2010 ACT Chief Health Officer's Report notes that opportunities to improve the health of the ACT population are largely dependent on reducing the impact of modifiable risk factors that contribute to poor health (ACT Health, 2010). Sub-optimal levels of physical activity are a key modifiable risk factor.

The ACT Government Health Directorate Physical Activity Strategic Framework 2012–15 (hereafter 'the Framework') articulates the roles of the Health Directorate in maintaining and increasing participation in physical activity in the ACT and seeks to lay the foundation for the development of a whole of government approach to this issue.

The World Health Organization (WHO) defines health as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity". Physical activity plays a key role in health and wellbeing and is one of the most important things an individual can do to stay healthy. Physical activity also promotes the wellbeing of communities, the protection of the environment and is an investment in future generations (WHO, 2011).



WHO defines physical activity as "any bodily movement produced by the muscles that results in energy expenditure" (WHO, 2011). This definition encompasses planned and structured activity such as exercise or sport, as well as unstructured activity such as walking and cycling for transport, and incidental activity associated with tasks like housework, gardening and play. This Framework intends to operate across all of these spaces in promoting the importance of physical activity.

# 4. Governance

# 5. Scope and Purpose

The Framework has been endorsed by the ACT Government Health Directorate's Executive Council.

The Executive responsible for the oversight of the Framework is the Chief Health Officer. Responsibility for revisions of the Framework lies with the Population Health Division, however the responsibility for implementation and evaluation of individual action areas lies with relevant divisions and branches within the ACT Government Health Directorate.

The Framework recognises the central role played by other sectors of government, and by the community and business sectors, in producing positive physical activity outcomes for the ACT population. While the Health Directorate has no authority to direct the activities of these sectors, its skill in influencing and advocating effectively for positive policy outcomes through establishing and maintaining effective and productive partnerships will ultimately be a key factor in the success of the Framework overall.



The Framework seeks to address the growing need for a strategic approach to improve physical activity outcomes at a population level, and to guide the activities of the Health Directorate in this regard. It proposes that the promotion of physical activity should be core business for the Health Directorate, given the strong evidence base demonstrating downstream health system benefits to be gained from improving physical activity levels.

The Framework seeks to provide an evidence base for policy and program direction and describe the components of the ACT Health system that can be mobilised to implement this direction. It has a high level strategic focus.

The Framework recognises the key role played by other sectors and non-government organisations in the promotion of physical activity and acknowledges the need for the Health Directorate to work closely with these partners to achieve shared goals. For example, increasing the number of people who use active transport (using physical activity such as walking or cycling all or part way to their destination) delivers important co-benefits related to preventive health, climate change, traffic congestion and air quality.

The aims of the Framework are to:

- Place physical activity on the agenda as a priority area for the Health Directorate;
- Outline the role of the Health Directorate in promoting regular physical activity amongst the ACT population in partnership with other stakeholders;
- Identify key physical activity issues for the ACT population;
- Articulate the principles to guide the Health Directorate in carrying out these actions; and
- Lay the foundations for a whole of government approach to promoting physical activity.

# 6. Guiding Principles

### In implementing this Framework, the Health Directorate will be guided by the following principles:

#### Implementing evidence-based policy and practice

Research, analysis and evaluation informs the development of evidence based policy and programs. The Health Directorate's work in physical activity is aligned with the National Physical Activity Guidelines and Recommendations published by the Australian Government Department of Health and Ageing (DoHA). Physical activity initiatives should integrate the best available evidence with professional, community and peer based expertise.

#### **Developing whole-of-population approaches**

A whole-of-population approach aims to achieve maximum health gains by working with whole populations or sub-groups of the population. Population approaches are complemented by programs and services targeting individuals.

#### **Developing whole-of-system approaches**

The Framework recognises the value of adopting a systems approach to effect changes to whole systems that influence the uptake of physical activity in the ACT, rather than targeting individual elements of systems in isolation.

#### Implementing sustainable approaches

The Health Directorate is committed to ensuring that health spending is as efficient and effective as possible. Promoting physical activity as part of a healthier lifestyle can help prevent a range of health problems, and contribute to reduced health costs over the longer term. Initiatives should be sustainable over time and responsive to changing community needs.

#### Valuing prevention and health promotion

The Health Directorate recognises the value of preventive approaches to health. This includes strengthening the skills and capacity of individuals and the population as a whole to engage in healthy lifestyles. Effective health promotion influences the social determinants of health which are the social, environmental and economic conditions that impact on public and individual health.

#### **Empowering consumers**

The Ottawa Charter for Health Promotion<sup>1</sup> and the Jakarta Declaration<sup>2</sup> emphasise the importance of enabling people to increase control over, and to improve their health. The Framework recognises the importance of empowering people to participate directly in decisions about their health and wellbeing. This is consistent with the *ACT Human Rights Act 2004*.

#### Addressing health inequalities

The Health Directorate recognises that some population groups experience inequities in health and access to health services. The Health Directorate is committed to addressing structural and systemic issues which reinforce the divide in health outcomes between different population groups. Priority will be given to actions that aim to redress health inequalities and meet the needs of disadvantaged and vulnerable population groups.

#### Leading by example

The Health Directorate values its responsibility to set a leading example by modelling policies and practices that support physical activity in the workplace.

1. World Health Organisation (WHO), 1986, Ottawa Charter for Health Promotion.

2. World Health Organisation (WHO), 1997, Jakarta Declaration on Leading Health Promotion into the 21st Century.

# 7. Background

### 7.1 National Policy Context

In November 2008, the Council of Australian Governments (COAG) agreed to a National Partnership Agreement on Preventive Health (NPAPH), to focus all States and Territories on prevention issues. The NPAPH aims to address the rising prevalence of lifestyle related chronic diseases through the implementation of a broad range of health promotion initiatives in settings such as vulnerable communities, early childhood education and care environments, schools and workplaces.

As part of the agreement, States and Territories are working towards seven agreed outcomes related to physical activity, nutrition, healthy weight, and smoking. The two key performance benchmarks relevant to physical activity are an increased proportion of adults participating in at least 30 minutes of moderate physical activity every day and an increased proportion of children participating in at least 60 minutes of moderate physical activity every day, compared to 2009 baseline data.

Taking Preventative Action, the Australian Government's response to the 2009 National Preventative Health Strategy, committed to ensuring that action is taken to address Australia's declining levels of physical activity and the associated issue of growing rates of obesity (DoHA, 2010b). It also includes specific initiatives to address obesity in the Aboriginal and Torres Strait Islander population, with identified actions including whole of community education and social marketing and communication strategies for nutrition (Aboriginal and Torres Strait Islander Health Performance Framework 2010 report).

Recommended key action areas in the 2009 National Preventative Health Strategy include:

- Driving environmental changes throughout the community which increase levels of physical activity and reduce sedentary behaviour;
- Embedding physical activity and healthy eating patterns in everyday life;
- Encouraging people to improve their levels of physical activity and healthy eating through comprehensive and effective social marketing;

- Supporting low income communities to improve their levels of physical activity and healthy eating; and
- Reducing obesity prevalence and burden in Aboriginal and Torres Strait Islander communities and contributing to 'Close the Gap'.

### 7.2 ACT Policy Context

Current Health Directorate initiatives in relation to physical activity have been designed to align with the national agenda. Under the NPAPH, the ACT Government has agreed to identify, develop and implement programs that will lead to an increase in the level of physical activity of the ACT population. It will also report on progress in reducing the prevalence of physical inactivity.

The 2009–2010 ACT Budget allocated \$11 million over three years to support the *Healthy Future* — *Preventative Health Program.* This has included a range of initiatives aimed at promoting healthy lifestyles and preventing or reducing risk factors for chronic disease. These initiatives are focussed on priority action areas that closely reflect developments in the preventive health agenda at the national level through the NPAPH.

The Health Directorate has also embarked on a major service redesign and redevelopment exercise under the Capital Asset Development Program (CADP). The CADP aims to respond to the growing demand for health care services and incorporates the total health system, including new models of care, improved management of chronic disease and an emphasis on keeping people out of hospital. Improving physical activity outcomes will therefore be central to helping to contain growing demand.

The Health Directorate's *Reconciliation Action Plan* 2010–2012 demonstrates our commitment to creating a culturally aware and sensitive healthcare environment that contributes to closing the unacceptable gaps in life expectancy for Aboriginal and Torres Strait Islander Peoples living in the ACT and surrounding region. Building improved working relationships and partnerships with Aboriginal and Torres Strait Islander peoples to improve quality and access to health care is central to 'Closing the Gap'. Changes to the ACT Public Service structure in 2011 following the Hawke Review have paved the way for a more strategic and collaborative approach across Government Directorates. Many of the strategic approaches to improving physical activity outcomes described in this document will benefit from an integrated strategic approach.

The ACT Government's accountability framework Strengthening Performance and Accountability: A Framework for the ACT Government (2011) has also identified the objective of 'Strong co-ordination of activity across government'. The structural settings are thus in place to help place the achievement of improved physical activity outcomes within an all of government context.

### Physical Activity Outcomes: Key Performance Benchmarks

### Under the NPAPH, the two key performance benchmarks relevant to physical activity in the ACT are:

An increase of 5% in the proportion of adults participating in at least 30 minutes of moderate physical activity every day by 2015, compared to the 2009 baseline of 51.5%. By 2018 this should increase by 15% compared to the 2009 baseline.

An increase of 5% in the proportion of children participating in at least 60 minutes of moderate physical activity every day by 2015, compared to the 2009 baseline of 15.6%\*. By 2018 this should increase by 15% compared to the 2009 baseline.

\*Child physical activity estimate only applies to adolescents aged from 12 to 17 years as there is no data available on younger ages.

## Based on analysis of existing trends, this translates to targets of:

54.1% of ACT adults participating in at least 30 minutes of moderate physical activity every day by 2015;

16.4% of ACT children participating in at least 60 minutes of moderate physical activity every day by 2015;

60% of ACT adults participating in at least 30 minutes of moderate physical activity every day by 2018; and

20% of ACT children participating in at least 60 minutes of moderate physical activity every day by 2018.

### 7.3 Links with Other Policies

This Framework is designed to be consistent with the goals and underlying principles of a range of Health Directorate strategic documents which provide a focus to the Health Directorate's commitment to promoting healthy lifestyles amongst the ACT population.

A listing of relevant associated Health Directorate and ACT Government Frameworks and Policies is at **Appendix A**.



# 8. National Physical Activity Guidelines and Recommendations

# 9. Physical Activity and Health Status

The Framework uses the National Physical Activity Guidelines and Recommendations for Australians, published by the Australian Government Department of Health and Ageing (DoHA) as a key reference point. The guidelines are provided at **Appendix B**.



Physical activity promotes wellbeing, physical and mental health, prevents disease, improves social connectedness and quality of life, provides economic benefits and contributes to environmental sustainability.

Global Advocacy Council for Physical Activity, 2010

### 9.1 The Health Benefits of Physical Activity in Adults

Physical activity can dramatically reduce the risk of chronic disease and there is a clear inverse relationship between physical activity and death due to any and all causes (US Department of Health and Human Services, 2008). Recent literature reviews confirm the findings of a seminal Australian report, Getting Australia Active II: An Update of Evidence on Physical Activity for Health (Bull et. al, 2004), which notes that physical activity helps prevent cardiovascular disease, stroke and high blood pressure, reduce the risk of some types of cancer and Type 2 diabetes. Other studies (Shaw et. al, 2006; Liu & Latham, 2009; Pendeo & Dahn, 2005) have noted that physical activity has been shown to:

- Reduce body weight and alleviate the burden of chronic disease by moderating the health risks of being overweight or obese;
- Increase bone and muscle strength, reducing the risk of injury and improve physical function in people with osteoarthritis;
- Improve mood, reduce perceived stress and promote mental wellbeing;
- Improve health related quality of life in cancer sufferers and slow the decline in physical wellbeing in cancer patients undergoing chemotherapy; and
- Improve strength and lean body mass in patients with chronic obstructive pulmonary disease.

## **SNAPSHOT**

### Levels of Physical Activity in ACT Adults

- 43% of ACT residents aged 18 years and over did not participate in sufficient physical activity to meet the National Physical Activity Guidelines, which recommend that adults put together at least 30 minutes of moderate-intensity physical activity on most, preferably all, days of the week (ACT Health, 2010a).
- 53.5% of the ACT population aged 15 years and over participated in physical activity at least three times per week on average. This figure captures participation in sport, exercise and recreation, but does not include activities related to work, household chores or gardening. This figure is above the national average of 47.7% (ASC, 2011).
- Two-thirds of ACT workers do not undertake sufficient physical activity. The report notes that all key stakeholders recognise the importance of preventive health and wellbeing initiatives to promote a healthy, motivated and engaged workforce, and that improved health of workers is of great benefit to employers (ACT Health, 2010c).

## **SNAPSHOT**

### **Overweight and obesity in the ACT**

Physical inactivity is a risk factor for overweight and obesity, which are associated with a number of adverse health outcomes. In 2007–08, 57.8% of ACT adults and 21.7% of children were overweight or obese and 76% of people who had been diagnosed with diabetes were overweight or obese (ACT Health, 2010a).

Aboriginal and Torres Strait Islander people were equally likely to be overweight or obese as non-Aboriginal people, with indicators showing that 58% of Aboriginal and Torres Strait Islander persons in the ACT aged 15 years and over are overweight or obese (ACT Health, 2010a).

### 9.2 The Health Benefits of Physical Activity in Children and Young People

The evidence of the health benefits of physical activity for children (under 12 years) and young people (12 to 25 years old) is similar. A physically active lifestyle is associated with a number of long term health benefits including strengthening of bones, lower fat accumulation, improved self esteem, reductions in systolic blood pressure, and reductions in depressive symptoms (Hallal et al., 2006; Janssen & LeBlanc, 2010). Physical activity can promote overall psychological wellbeing and is inversely related to overweight and obesity in young people (Lubans et al., 2011).

Establishing a habit of physical activity early in life is important in encouraging an active lifestyle in adulthood, as people who start physical activity early in life tend to continue it later (WHO, 2002).

Parents have a strong influence on their children's behaviour in relation to physical activity, and therefore it is important to assist them to model appropriate behaviour and encourage a physically active lifestyle, rather than promoting sedentary behaviours (Brug et al., 2010).



## **SNAPSHOT**

# ACT children and young people's participation in physical activity

The 2009 ACT Physical Activity and Nutrition Survey found that 1 in 5 children (22.6%) reported being moderately to vigorously physically active for at least 60 minutes every day, indicating that only a minority of children met the Australian Government Physical Activity Recommendations (Health Directorate, 2012).

The 2008 Australian Secondary School Alcohol and Drug survey revealed that only 15.6% of ACT secondary school students aged 12 to 17 years reported participating in physical activity at levels that meet the National Physical Activity Recommendations (ACT Health, 2011).

The Australian Early Development Index (AEDI) is a relative population measure of how young children are developing in different Australian communities to give a national progress measure of early childhood health and development. While the AEDI shows that the ACT is doing better than the national average on language and cognitive development, it is below the national average for physical health and wellbeing development (CCH, 2011). This measurement includes gross motor skills, physical skills, physical independence, and energy levels. Failure to develop these skills can be a significant barrier to participation in physical activity.

### 9.3 Health Benefits of Physical Activity in Older People

The ACT has one of the fastest growing populations of people aged 65 years and over in Australia. By the year 2032, Canberra's population is projected to grow by 67,000 people to 389,000, with the proportion of our population aged over 65 expected to increase from 9.7 % to 25.6% (ACT Health, 2009). The ACT health system also services a surrounding regional population in South East NSW, and this region will also experience similar degrees of growth and ageing.

Demand for health services is increasing every year and a strategic response to this issue is required. Increasing participation in physical activity for older adults can make an important contribution to containing health service demand. For the purpose of this framework, the definition of older people is people aged 65 and older, and aged 55 years and older for Aboriginal and Torres Strait Islander people (ACT Health, 2007b).

The role of physical activity in reducing the risk of falls in older people deserves special mention. Falls are a leading cause of injury in the elderly in the ACT and can lead to adverse long-term outcomes (ACT Health, 2010a). Of ACT residents aged 65 years and over, 26.6% have had a fall in the previous 12 months, with 7% of those requiring medical attention (ACT Health, 2010). Physical activity that improves balance and strength is a key evidence-based intervention for falls prevention (Milat et al. 2011). The recent Cochrane systematic review concluded that exercise interventions reduce the risk and rate of falls (Gillespie et al., 2009).

A trend towards increased participation in physical activity by older people in the ACT is encouraging, with a 2011 study showing that people aged 64 and over are more likely to participate in physical activity than they were 10 years previously (ASC, 2011).

Many improved health and well-being outcomes are associated with regular physical activity in older people (DoHA, 2005). The benefits include:

- Maintaining or improving physical function and independent living;
- Improving social interactions and reducing depression;
- Building and maintaining healthy bones, muscles and joints, reducing the risk of injuries from falls; and
- Reducing the risk of heart disease, stroke, high blood pressure, Type 2 diabetes, and some cancers.

As in other strategic focus areas in the Framework, improving physical activity outcomes in older people can require advocacy and effort across other areas in government. For example the ACT Strategic Plan for Positive Ageing 2011–2014: Towards an Age Friendly City notes that well maintained community footpaths and cycle ways are a priority for older Canberrans, and are an important factor in supporting their uptake of regular physical activity. Similarly, universal design principles being adopted in ACT public and private housing, an initiative being developed by Land and Property Services, Economic Development Directorate, seeks to address some of the infrastructure issues needed to support positive ageing.

### 9.4 Sedentary Living: A Risk Factor for Chronic Disease

Changing work and living practices into the 21st century as well as technological advances have contributed to far greater levels of sedentary behaviour in developed countries than ever before. An emerging body of evidence suggests that sedentary behaviour is a risk factor for poor health, even for those adults who engage in physical activity on a regular basis (Heart Foundation of Australia, 2011).

This finding may initially appear counterintuitive. However, a typical ACT office worker who drives to work, spends the majority of the work day in front of a computer screen, and then drives home to spend the majority of the evening in front of a television or computer screen could easily be spending 12 hours a day in a static pose performing virtually no physical activity.

A 2011 trial by the Federal work health and safety regulator, Comcare, has revealed that taking regular breaks from sitting can improve health. The Comcare data suggests that the typical office worker spends over two-thirds of their day remaining seated and inactive. It also found that even 30 minutes of exercise a day cannot offset the high risk of cardiovascular disease and death associated with prolonged sitting (Comcare, 2011).

Other research indicates that adults who spend less time sitting throughout the day have a lower risk of early death, particularly from cardiovascular disease (Katzmarzyk et. al, 2009; Patel et al, 2010; Heart Foundation of Australia, 2011). There is also a relationship between daily sitting time and all-cause mortality rates and diabetes mellitus (Katzmarzyk et. al, 2009). Other studies have shown that higher TV viewing hours are associated with higher body mass index, lower levels of fitness and higher blood cholesterol levels (Swinburn & Shelley, 2008). Sedentary behaviour has also been linked to poor mental health outcomes. A 2011 study identified lower odds of depression were associated with increasing moderate-tovigorous intensity physical activity. (Vallance et al., 2011).

These findings point to a need to augment the current strategic focus of increasing 'light to moderate' activity with initiatives that also promote any form of physical activity that breaks patterns of sedentary behaviour. A key message of this Framework is that any form of movement should be seen as an opportunity, not an inconvenience. While this message is part of the National Physical Activity Guidelines, it has not been strongly emphasised in many public health messages. For example, small steps such as encouraging use of the stairs instead of the lift at the workplace can make a useful difference (Heart Foundation of Australia, 2011).

### **SNAPSHOT:**

### **Sedentary Behaviour in the ACT**

As opposed to data about participation in physical activity, data on sedentary behaviour is currently limited. Based on 2009 ACT Physical Activity and Nutrition Survey data, almost one third of ACT children exceeded guidelines recommending a maximum two hours exposure to electronic screen-based media on weekdays. Less than half (46%) met these guidelines on weekends (Health Directorate, 2012). This data only captures screen time which is only one aspect of sedentary behaviour.

Results from the 2007–08 National Health Survey show that more than 96% of Australian adults spent between one and 11 hours sitting (during leisure time) per day (ABS, 2009). This data is clearly difficult to interpret and it is anticipated that the 2012 Australian Health Survey will better capture hourly data for a range of sedentary behaviours such as time spent sitting at work, watching television, participating in screen based activities or other sitting activities.

# 10. Physical Activity— The Economic Imperative

Physical inactivity is identified by the World Health Organization as the fourth leading risk factor for global mortality. Levels of physical inactivity are rising in many countries with major implications for the prevalence of chronic diseases and the general health of their populations (WHO, 2010). Physical inactivity is the fourth leading contributor to the overall burden of disease in Australia. It accounts for 6.6% of the total burden of disease and injury, not far behind tobacco related disease (AIHW, 2007).

A 2008 report commissioned by Medibank Private estimated that the *direct* net cost of physical inactivity to the Australian community was \$663 million per annum. However the combined direct and *indirect* costs (indirect costs include for example, workplace absenteeism and lost productivity) were estimated to be \$13.8 billion (Medibank Private, 2008).

A 2010 report prepared for ACT Sport and Recreation Services estimated the economic benefits in health terms from sport and physical activity participation in the ACT to be \$84.5 million in 2008–09. This figure includes increased productivity and averted career and health related efficiency losses. If the level of physical inactivity in the ACT was halved (reaching a point where about 75% of the ACT population frequently participated in physical activity), the potential additional preventive cost benefit could be a further \$47.2 million per year (ACTSRS, 2010). This indicates the need to increase levels of physical activity in order to improve the health and well being of the ACT population and contribute to a reduction in health spending and improved productivity.



# 11. Barriers and Enablers to Participation in Physical Activity

### **11.1 Barriers and Enablers**

In order to increase levels of participation in physical activity, barriers and enablers to participation need to be addressed. This Framework does not intend to give a detailed overview of all the factors affecting participation in physical activity, but seeks to set the scene for cross-sectoral partnerships that can improve physical activity outcomes.

While differing barriers exist for different age and population groups, one major reason that people give for not participating in physical activity is lack of time. Dissatisfaction, or lack of interest in physical activity, is another key factor (Meltzer, 2010). For children and younger people, research suggests that a key factor behind the decline in children's levels of physical activity and independent mobility, such as walking to school, is an increase in parental fear (Zubrick et al., 2010).

The 2010 Walk 21 Benchmarking Study found that nearly 90% of primary school students and 30% of secondary school students in the ACT are never allowed to walk to school unaccompanied (Walk 21, 2011). For many adults, technological practices and changed work and lifestyle patterns have contributed to increased levels of physical inactivity.

For older adults, barriers such as feeling 'too old', the high cost of some forms of exercise, feeling that certain forms of physical activity are inaccessible, and fear of injury can be deterrents (Sims et al., 2006).

### 11.2 Active Travel – A Way to Integrate Physical Activity into Daily Life

Active travel is a term meaning that people use physical activity – such as walking and cycling – to get all or part way to their destination. This includes walking and cycling to public transportation. As well as being a key way of incorporating physical activity into daily life, active travel is low cost, socially inclusive and can be time efficient in that it integrates commuting and daily exercise. It also has the co-benefits of reducing traffic congestion and greenhouse gas emissions. The Global Advocacy for Physical Activity, the advocacy council of the International Society for Physical Activity and Health, included active travel as one of the seven best investments for physical activity in the publication *Investments that Work for Physical Activity* (ISPAH, 2011).

Long distances and safety concerns are key deterrents of active travel, and hence the built environment plays a critical role in enabling or discouraging walking and cycling to destinations.

### **SNAPSHOT:** Active Travel to School

Physically active children are healthier, happier and more socially connected than children who have more sedentary lifestyles, yet many Australian children do not meet recommended levels of physical activity. 'Incidental' exercise, including active travel, can substantially contribute to overall levels of physical activity yet it has declined markedly in recent decades. Current levels among children and young people in Australia (and the ACT) are now less than half the 1970 levels (Garrard, 2011).

Preliminary consultations undertaken with primary and secondary students in the ACT in 2011 indicate that while 52% of these students were driven to school, 89% would prefer active travel such as walking or cycling.

Increasing children's active travel is likely to result in net gains in the overall levels of physical activity, and in the proportion of children achieving the recommended levels of physical activity. A number of high-income countries and cities have successfully reversed the trend of steadily increasing car travel by children and young people, while a range of Australian government policies and programs at National, State, Territory and local levels to increase active travel for children and adults have been developed and implemented (Garrard, 2011). 11.3 The Case for Improving the Uptake of Walking as Physical Activity

### Walking is such a basic way of travelling that it is easy to forget its importance.

Methorst et. al, 2010

Walking is the most popular form of physical activity in Canberra (ASC, 2011), however we don't walk as often, or as far, as previous generations. Walking is free, accessible to all age groups and can be incorporated into everyday activities. In addition to the benefits of improving health, walking can build community and social connections, and reduce greenhouse gas emissions. In Canberra, people primarily choose to walk for recreation, not transport (Walk 21, 2011), however walking is also an important form of active travel, and is discussed under that heading.

There is great potential to achieve health gains by integrating walking into everyday life. In Australia, approximately 10% of all car trips are less than one kilometre, the equivalent of a ten minute walk, and 30% are less than three kilometres (Healthy Spaces and Places, 2009).

Research conducted in 2000 (Stephenson et al., 2000) suggests that if 10% of the adult population in Australia increased the amount of walking they did by 10–15 minutes twice a day on five days of the week, we would note:

- a total of \$76 million (in 2000 dollars) in savings in direct measurable health care costs each year, with even larger savings in indirect costs;
- 1038 fewer heart disease deaths in Australia each year;
- savings of \$31 million from cardiovascular disease costs;
- a marked reduction in diabetes (estimated at around 20%) and around 300 fewer diabetes-related deaths each year, resulting in direct health care cost savings of \$22 million;
- prevention of at least 15% bowel cancer cases; and
- a probable increase in community wellbeing and quality of life.

The ACT Government in 2010 signed the Walk 21 International Charter for Walking (Walk 21, 2006) and has undertaken the Walk 21 benchmarking study to assess the walkability of the ACT in order to inform planning and development of walking infrastructure.

This Framework notes the key role walking plays in contributing to physical activity levels at a population health level, and notes that the Health Directorate through a range of areas such as the Health Promotion Branch can play a key role in encouraging walking uptake. It also notes that cross-sectoral involvement will help achieve this goal.

### 11.4 The Built Environment – The Importance of Good Urban Design

There is increasing recognition that the built environment plays an important role in constraining or facilitating physical activity for transport and recreation, and also incidental physical activity as part of everyday life (Leslie et al. 2007; AIHW, 2011). The built environment encompasses all buildings, spaces and products that are created, or modified, by people, and includes houses, workplaces, schools, transport and places for recreation. In Australia, *Healthy Spaces and Places: A national guide to designing places for healthy living* raises awareness of the influence of the built environment as a determinant of physical activity levels, and outlines urban design principles that are the foundation of more active, healthier communities (Healthy Spaces and Places, 2009).

Good urban planning and design can improve walkability in cities and towns. Walkability is a concept that captures how conducive an area is to walking for recreation, exercise or transport (Leslie et al., 2007). Recent, comprehensive reviews have reported a consistent, positive association between walkability and levels of walking and cycling for travel (Saelens & Handy 2008, Frank et al., 2007). Some recent studies have associated poor neighbourhood walkability with obesity. One US study found that people living in more walkable neighbourhoods walked and cycled more for transport, drove less and had lower body mass index (AIHW, 2011). An Australian cross-sectional study found that overweight Australian adults working in Perth, Western Australia were more likely to live in neighbourhoods that lacked adequate footpaths and places for physical activity, and near highways (AIHW, 2011).

The Global Advocacy for Physical Activity included 'urban design regulations and infrastructure that provide for equitable and safe access for recreational physical activity, and recreational and transport related walking and cycling across the life course' as one of the seven best investments for physical activity in the publication *Investments that Work for Physical Activity* (ISPAH, 2011).

The Health Directorate is well positioned to advocate for optimal health-related planning outcomes and building partnerships and alliances with the planning sector will be a key strategy under this framework.

### 11.5 The Importance of Comprehensive Physical Activity Data and Reporting

Having access to accurate and comprehensive data is an important enabler for good policy development to evaluate its effectiveness. Currently, data on the physical activity levels and sedentary behaviour of children, young people and adult populations in the ACT are primarily obtained from local and national surveys.

Self-reported physical activity levels in adults and parentreported physical activity in children are obtained from the ACT General Health Survey (GHS) each year. Self-reported physical activity levels by Grade 6 children are collected from the ACT Physical Activity and Nutrition Survey (ACTPANS) every three years.

Nationally, physical activity levels are collected triennially from students in years 7 to 12 as part of the Australian Secondary Schools Alcohol and Drug Survey (ASSAD). Data is also collected for students in years 8 to 11 through the National Secondary Student's Diet and Activity (NaSSDA) Survey. These surveys provide self-reported physical activity data. The National Health Survey conducted triennially by the Australian Bureau of Statistics collects data on exercise behaviour in adults at national, state and territory levels. The achievement of 2013 and 2015 National Partnership Agreement on Preventive Health performance benchmarks for ACT adult and child physical activity will be assessed from self-reported physical activity collected from the ACT GHS, ASSAD and NaSSDA surveys.

In addition, data from local population surveys such as the ACTPANS may contribute towards measurement of the benchmarks in the form of supplementary data. The Epidemiology Branch is able to provide estimates of the likelihood of the ACT meeting physical activity benchmarks in 2013 and 2015 based on information about the effectiveness of interventions and existing population trends.



#### Physical activity interventions: what works?

An evidence review shows that effective interventions exist that policymakers can implement to improve the physical activity outcomes at a population level (WHO, 2009; ISPAH, 2011). However, there are gaps in knowledge and the current data on effective physical activity interventions are generally the result of short to medium term studies (WHO, 2009). The 2010 Assessing Cost Effectiveness in Prevention (ACE-Prevention) Report notes uncertainty around the sustainability of intervention effects over the long term, and recommends careful evaluation if these interventions are implemented on a larger scale in Australia (Vos et. al, 2010).

In assessing the shared characteristics of effective interventions, the WHO review Interventions on Diet and Physical Activity: What Works found that across categories, the most successful ones were multi-component, adapted to the local context and involved stakeholders throughout the process (WHO, 2009).

## While not a complete review, some examples of successful interventions to increase levels of physical activity include:

Large scale school-based interventions that focus on physical activity and are comprehensive, multi-component and include curriculum on physical activity taught by trained teachers, supportive school environments, and a family component (WHO, 2009);

Environmental interventions targeting the built environment, policies that reduce barriers to physical activity, transport policies, and policies to increase space for recreational activity (WHO, 2009);

Point-of-decision prompts, for example information on the benefits of physical activity beside elevators and stairs, encouraging the use of stairs (WHO, 2009);

Health professional advice and guidance with continued support (Foster et. al, 2005); and

Interventions in workplace settings which include: education, employee and peer support; access to places and opportunities for physical activity; and multi-component interventions combining nutrition and physical activity (Bellew et. al 2008).

A key strategy under this framework will be to build on the evidence base for effective interventions to address gaps in knowledge.

# 12. Strategic Focus Areas

Health and wellbeing, including that enjoyed as a result of engaging in adequate levels of regular physical activity, is not enjoyed equally across our population. Reducing health inequalities, linked to education, income and other environmental considerations, is a matter of equity and social justice (Marmot et. al, 2010). The following strategic focus areas are to be considered with-in this access and equity context. Additionally, these strategic focus areas are based on a whole of life approach and have a population level focus.

#### **Children and Young People**

The Health Directorate should remain engaged in the development and maintenance of programs and activities that encourage and enable young children to incorporate recommended levels of physical activity into their everyday life. Strategies such as supporting parents to provide positive physical activity role modelling will be useful in this regard.

#### Adults

The Health Directorate should support programs and activities that promote physical activity and help to get a greater proportion of all adults in the ACT complying with the Australian Physical Activity Guidelines.

The Health Directorate recognises that different population groups experience inequities in health outcomes and supports the recommendation that State and Territory Governments are to encourage the involvement of Aboriginal and Torres Strait Islander peoples in sport and recreational activities in order to meet physical activity recommendations for daily physical activity (DoHA, 2010c).

#### **Older people**

The Health Directorate should support activities that help older persons in the ACT achieve Australian Physical Activity Recommendations for daily activity. This can make an important contribution to containing health service demand, for example in areas such as falls prevention. Projected large increases in the proportion of the ACT population aged over 65 years make this a key priority area.

#### **Built environments**

Efforts by the Health Directorate to improve physical activity outcomes should include advocacy efforts to help influence built environment outcomes that support making physical activity the easy choice. The built environment has an impact on how active we are and how active we can be, and better built environments can contribute to health benefits over the long term.

#### **Active travel**

Improving participation in active travel is a key strategy to improve physical activity outcomes. The Health Directorate's advocacy for improved active travel outcomes in ACT Government urban planning and transport policies is a key strategic approach.

#### **Emphasis on walking**

The Framework notes the key role walking plays in contributing to physical activity outcomes at a population level, and the potential opportunities that may be developed in this regard. The Health Directorate should continue providing promotion of participation in walking activities. The Framework notes that cross-sectoral involvement with key partners may be needed to achieve improved outcomes in relation to walking, and the importance of the Health Directorate in building and maintaining effective relationships with stakeholders in these sectors.

### **Cross sectoral partnerships**

The Framework notes that the achievement of improved physical activity outcomes at a population level is often associated with broader policy initiatives and concerns.

One of the key contributions the Health Directorate can make towards improved physical activity outcomes lies with its capacity to authoritatively advocate for better policy outcomes. These can be across a range of government and community sectors that have carriage of issues such as transport planning and urban design. The Health Directorate should therefore work towards identifying and enhancing strategic partnerships with ACT Government agencies, National, State and Territory governments, non-government agencies, the community sector and the business sector to ensure optimal policy outcomes.

#### **Evidence base and Evaluation**

Collecting evidence, measuring and tracking physical activity levels and disseminating the latest knowledge and research findings are important elements of the Health Directorate's capacity to improve physical activity outcomes. The Framework notes that useful evidence can be obtained outside of the health sphere, for example from transport and urban planning agencies and from the education sector.

While local data and analysis is important, adapting national and international best practice to the ACT context will also be required.

#### Workforce

Building the expertise in the Health Directorate workforce to deliver physical activity strategies and programs will also be a key strategy to help improve physical activity outcomes. Health workers often operate in an environment of competing priorities. Emphasising the importance of improving physical activity outcomes, and leadership in this regard, will be an important element in ensuring the success of the Framework.

# 13. Priorities against Strategic Focus Areas within the ACT Government Health Directorate

Strategic focus area	Strategic priorities	Lead areas within the Health Directorate
Improving physical activity outcomes for children and young people	Develop and maintain programs and activities that encourage and enable young children to incorporate recommended levels of physical activity into their everyday life. Build ongoing collaboration with the Education and Training Directorate in its efforts to deliver programs that support physical activity amongst students. Advocate across government for policy outcomes that facilitate improved physical activity outcomes amongst children and young people.	Population Health Division (Health Promotion Branch)
Improving physical activity outcomes for adults	Develop and maintain programs and activities that encourage and enable adults to incorporate recommended levels of physical activity into their everyday life. Advocate across government for policy outcomes that facilitate improved physical activity outcomes in adults.	Population Health Division (Health Promotion Branch)
Improving physical activity outcomes for older people	Develop and maintain programs and activities that encourage and enable older people to incorporate recommended levels of physical activity into their everyday life. Promote the role of physical activity in preventing falls. Advocate across government for policy outcomes that facilitate improved physical activity outcomes in older people, including but not limited to areas such as built environmental design, planning and transport strategy.	Population Health Division (Health Promotion Branch) Policy Division; Rehabilitation, Aged and Community Care
Built environments	Advocate across government for built environments that encourage and facilitate uptake of physical activity. Ensure that our own built environments within the Health Directorate facilitate uptake of physical activity wherever possible and practicable.	Population Health Division (Health Promotion Branch) Business and Infrastructure Policy Division
Increasing participation in active transport	Advocate across government for policy outcomes that encourage and facilitate participation in active transport options to improve physical activity outcomes. Develop health promotion programs and activities that encourage active transport as a strategy to help achieve recommended levels of physical activity in everyday life. Promote and encourage active transport to Health Directorate staff as a component of a broader suite of activities promoting a healthy workforce.	Population Health Division (Health Promotion Branch) Policy Division

Strategic focus area	Strategic priorities	Lead areas within the Health Directorate	
Improving the uptake	Advocate across government for policy outcomes that encourage and create more 'walkable' environments in Canberra and build a culture of walking.		
of walking	Deliver health promotion programs that encourage and promote walking as an easily accessible physical activity opportunity.	promote Population Health Division nity. (Health Promotion Branch) taff as a	
	Promote and encourage walking to Health Directorate staff as a component of a broader suite of activities promoting a healthy workforce.		
Enhancing strategic partnerships that can help deliver improved physical activity outcomes	Identify and enhance strategic partnerships with ACT Government agencies, National, State and Territory governments, non- government agencies, the community sector and the business sector to ensure optimal policy outcomes that enable and encourage physical activity. Actively seek participation in policy fora and policy development processes that have the potential to improve physical activity outcomes in a population level.	Population Health Division (Health Promotion Branch) Business and Infrastructure Policy Division	
Building the Evidence base	Collect evidence, measuring and tracking physical activity levels and disseminating the latest knowledge and research findings. Monitoring of physical activity outcomes against agreed national indicators from the National Partnership Agreement on Preventive Health (NPAPH). Explore opportunities for collaboration in research to build the evidence base for physical activity promotion, health outcomes and cost-effectiveness.	Population Health Division (Epidemiology Branch) Population Health Division (Health Promotion Branch)	
Workforce development	Build the expertise in the Health Directorate workforce to promote physical activity, and deliver physical activity strategies and programs. Deliver health promotion programs that encourage physical activity as a component of a broader suite of activity promoting a healthy workforce. Establish in-house expertise in evaluation.	Population Health Division (Health Promotion Branch) Relevant clinical areas	

# **Appendix A: Associated policies**

The ACT Government Health Directorate Physical Activity Strategic Framework 2012–15 is intended to be consistent with the goals and underlying principles of the following Health Directorate and ACT Government policies, plans and frameworks, and their successors from time to time.

### **Health Directorate**

- Towards a Healthier Australian Capital Territory: A Strategic framework for the Population Health Division 2010–2015.
- 'A New Way' The Aboriginal and Torres Strait Islander Health and Family Wellbeing Plan 2006–2011.
- ACT Health Corporate Plan 2010–2012.
- ACT Strategy for Improving Care and Support for those with Chronic Conditions 2012–2017 (currently under development).
- ACT Primary Health Care Strategy 2011–14.
- Health Directorate Food and Nutrition Strategic Framework (2012–15) (draft).
- Health Directorate Reconciliation Action Plan 2010–2012.
- Mental Health Building a Strong Foundation A Framework for Promoting Mental Health and Wellbeing in the ACT 2009–2014.

### **ACT Government**

- The Canberra Plan A Renewed Vision for Canberra 2008–2013.
- Building Our Community The Canberra Social Plan 2011.
- ACT Strategic Plan for Positive Ageing 2010–2014: Towards an Age-friendly City.
- Transport for Canberra, 2011–2031.
- ACT Planning Strategy Planning for a sustainable city. This strategy is in draft form at the moment and will be released this year.
- ACTIVE 2020 A Strategic plan for Sport and Active Recreation the ACT & Region 2011–2020.
- ACT Chief Health Officer's Report.
- ACT Children's Plan 2010–2014.
- ACT Women's Plan 2004–2014.
- Weathering the Change ACT Climate Change Strategy 2007–2025.



# Appendix B: National Physical Activity Guidelines and Recommendations

The Framework uses the National Physical Activity Guidelines and Recommendations for Australians, published by the Australian Government Department of Health and Ageing (DoHA) as a key reference point. The guidelines are as follows:

Physical Activity Recommendations for Children 0-5 years (published 2010).

- For infants (birth to one year) physical activity particularly supervised floor-based play in safe environments should be encouraged from birth.
- Toddlers (1 to 3 years) & Pre-schoolers (3 to 5 years) should be physically active every day for at least three hours, spread throughout the day.
- Children younger than 2 years of age should not spend any time watching television or using other electronic media (DVDs, computer and other electronic games) and for children 2 to 5 years of age these activities should be limited to less than one hour per day.
- *Infants, toddlers and pre-schoolers* should not be sedentary, restrained, or kept inactive, for more than one hour at a time, with the exception of sleeping.

# Physical Activity Recommendations for 5–12 year olds (published 1999)

- A combination of moderate and vigorous activities for at least 60 minutes a day is recommended.
- Children shouldn't spend more than two hours a day using electronic media for entertainment (e.g. computer games, TV, internet), particularly during daylight hours.

# Physical Activity Recommendations for 12–18 year olds (published 1999)

- At least 60 minutes of physical activity every day is recommended. This can be built up throughout the day with a variety of activities.
- Physical activity should be done at moderate to vigorous intensity.

# Physical Activity Guidelines for Adults (published 1999)

There are four steps for better health for Australian adults:

- Step 1 Think of movement as an opportunity, not an inconvenience.
- Step 2 Be active every day in as many ways as you can.
- Step 3 Put together at least 30 minutes of moderateintensity physical activity on most, preferably all, days of the week.
- Step 4 If you can, also enjoy some regular, vigorous activity for extra health and fitness.

# Physical Activity Recommendations for Older Australians (published 2005)

There are five physical activity recommendations for older Australians.

- Older people should do some form of physical activity, no matter what their age, weight, health problems or abilities.
- Older people should be active every day in as many ways as possible, doing a range of physical activities that incorporate fitness, strength, balance and flexibility.
- Older people should accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all, days.
- Older people who have stopped physical activity, or who are starting a new physical activity, should start at a level that is easily manageable and gradually build up the recommended amount, type and frequency of activity.
- Older people who continue to enjoy a lifetime of vigorous physical activity should carry on doing so in a manner suited to their capability into later life, provided recommended safety procedures and guidelines are adhered to.

## References

Health Directorate, 2012, The report on the ACT Year 6 Physical Activity and Nutrition Survey, Epidemiology Branch, Population Health Division, ACT Government, Canberra ACT.

ACT Health, 2007b, Reducing Falls and Falls Injury In Older Adults Across The ACT, accessed 11 October 2011,

ACT Health, 2009, Your health – our priority, accessed on October 30 2011, www.health.act.gov.au/about-us/your-health-our-priority/why-your-health-our-priority

ACT Health 2010a, Australian Capital Territory Chief Health Officer's report 2010, ACT Health, Canberra, retrieved 6 January 2011, www. health.act.gov.au/c/health?a=sendfile&ft=p&fid=1285049820&sid

ACT Health 2011, 2008 Australian Secondary School Alcohol and Drug (ASSAD), ACT Government, Canberra, retrieved 27 April, health.act. gov.au/publications/reports/act-secondary-student-alcohol-and-drug-report-2008-assad

ACT Health 2010c, ACT Workplace Health Promotion Needs Analysis, version 2.0, Issued 06 December 2010, report prepared by Pricewaterhouse Coopers

ACT Sport and Recreation Services (ACTSRS) 2010, *Building an active community: the economic contribution of sport and recreation in the ACT*, report prepared by Access Economics Pty Ltd, ACTSRS, Canberra, retrieved 7 January 2011, www.tams.act.gov.au/\_\_data/assets/pdf\_file/0005/199931/ACT\_Sport\_-\_Final\_report\_-\_August\_2010.pdf

Australian Bureau of Statistics (ABS) 2009, 2007-08 National Health Survey: Summary of results, accessed 13 April 2010, www.ausstats. abs.gov.au/Ausstats/subscriber.nsf/0/9FD6625F3294CA36CA25761C0 019DDC5/\$File/43640\_2007-2008%20%28reissue%29.pdf

Australian Institute of Health and Welfare (AIHW) 2011, *Health and the environment: A compilation of evidence*. Canberra Australian Institute of Health and Welfare (AIHW) 2007, *The burden of disease and injury in Australia 2003*, cat. no. PHE 82, AIHW, Canberra, retrieved 6 January 2011, www.aihw.gov.au/publications/ hwe/bodaiia03/bodaiia03.pdf

Australian Sports Commission (ASC), 2011, *Participation in Exercise, Recreation and Sport: Annual Report 2010*, Commonwealth Government, viewed 26 June 2011, www.ausport.gov.au/\_\_data/ assets/pdf\_file/0018/436122/ERASS\_Report\_2010.pdf

Bellew, B. (2008) Primary prevention of chronic disease in Australia through interventions in the workplace setting: An Evidence Check rapid review brokered by the Sax Institute (http://www.saxinstitute. org.au) for the Chronic Disease Prevention Unit, Victorian Government Department of Human Services.

Brug J, de Velde S, De Bourdeaudhuij I, Kremers S, 2010, Evidence of the influence of home and family environment, Chapter 8, in Preventing Childhood Obesity – Evidence Policy and Practice, Eds. Waters, E., Swinburn, B., Seidell, J. And Uauy, R., Wiley-Blackwell.

Bull FC, Bauman AE, Bellew B, Brown W, 2004. *Getting Australia active II: An update of evidence on physical activity for health*, Melbourne, retrieved 6 January 2011, www.dhs.vic.gov.au/nphp/publications/ documents/gaa\_2\_body\_ver1.pdf

Centre for Community Child Health (CCH) and Telethon Institute for Child Health Research, 2011. A Snapshot of Early Childhood Development in Australia - AEDI National Report 2009, Australian Government, Canberra. ComCare, 2011, Fact Sheet: Sedentary Work, accessed 11 November 2011, www.comcare.gov.au/\_\_data/assets/pdf\_\_ file/0020/97013/01355 WH and S Sedentary work v1.pdf

Department of Health, 2009, *Let's get moving – a new physical activity care pathway for the NHS. Commissioning guidance*, Department of Health, London, retrieved 6 January 2011, www. dh.gov.uk/prod\_consum\_dh/groups/dh\_digitalassets/documents/ digitalasset/dh\_105944.pdf

Department of Health and Ageing (DoHA), 2010a, *Move and play every day: National physical activity recommendations for children 0-5 years*, DoHA, Canberra.

Department of Health and Ageing (DoHA), 2010b, *Taking preventative action- A response to Australia: the healthiest country by 2020-The report of the National Preventative Health Taskforce*, Publication no. 6619, DoHA, Canberra, retrieved 7 January 2011, www.yourhealth. gov.au/internet/yourhealth/publishing.nsf/Content/report-preventativehealthcare.

Department of Health and Ageing (DoHA), 2010c, Aboriginal and Torres Strait Islander Health Performance Framework, accessed 10 November 2011, www.health.gov.au/internet/publications/ publishing.nsf/Content/health-oatsih-pubs-framereport-toc/\$FILE/ HPF%20Report%202010august2011.pdf

Department of Health and Ageing (DoHA), 2005, Choose Health: Be Active: A physical activity guide for older Australians. Canberra.

Foster C, Hillsdon M, Thorogood M. Interventions for promoting physical activity. Cochrane Database of Systematic Reviews 2005, Issue 1. Art. No.: CD003180. DOI: 10.1002/14651858.CD003180.pub2

Frank L, Saelens B, Powell K and Chapman J., 2007, Stepping towards causation: do built environments or neighborhood and travel preferences explain physical activity, driving, and obesity? Social Science & Medicine. Vol. 65, p.1898–914.

Garrard J, 2011, Active Travel to School: Literature Review, Report for ACT Government.

Gillespie LD, Robertson MC, Gillespie WJ, Lamb SE, Gates S, Cumming RG et al., 2009, Interventions for preventing falls in older people living in the community. Cochrane Database Syst Review, CD007146

Hallal PC, Victora CG, Azevedo MR & Wells JC, 2006, 'Adolescent physical activity and health: a systematic review', *Sports Medicine*, vol 36(12), pp. 1019-30.

Healthy Spaces and Places 2009, Healthy Spaces and Places. Accessed 30 October 2011, www.healthyplaces.org.au/site/why.php

Heart Foundation of Australia, 2011, Sitting less for adults, Accessed 25 October 2011, www.heartfoundation.org.au/SiteCollectionDocuments/ HW-PA-SittingLess-Adults.pdf

International Society for Physical Activity and Health (ISPAH), 2011, Global Advocacy for Physical Activity 2011, Non Communicable Disease Prevention: Investments that Work for Physical Activity, retrieved 4 March 2011, www.globalpa.org.uk

Janssen I & LeBlanc AG, 2010, Systematic review of the health benefits of physical activity in school-age children and youth. *International Journal of Behavioural Nutrition and Physical Activity*, vol 7, pp. 40-55. Katzmarzyk PT, Church TS, Craig CL & Bouchard, C 2009, Sitting time and mortality from all causes, cardiovascular disease, and cancer, *Medicine and Science in Sports and Exercise*, vol. 41(5), pp. 998–1005.

Leslie E, Coffee N, Frank L, Owen N, Bauman A & Hugo G, 2007. Walkability of local communities: using geographic information systems to objectively assess relevant environmental attributes. *Health & Place* (13), pp.111-22.

Liu CJ & Latham NK, 2009, 'Progressive resistance strength training for improving physical function in older adults', *Cochrane Database of Systematic Reviews*, Issue 3, DOI: 10.1002/14651858.CD002759.pub2, accessed 11 January 2011, http://onlinelibrary.wiley.com/o/cochrane/ clsysrev/articles/CD002759/frame.html

Lubans DR, Boreham CA, Kelly P, Foster CE, 2011, The relationship between active travel to school and health-related fitness in children and adolescents: a systematic review, vol. 8 (5), *International Journal* of Behavioural Nutrition and Physical Activity.

Marmot MG,Allen J,Goldblatt P,Boyce T,McNeish D,Grady M,Geddes I, 2010, The Marmot Review: Fair Society, Healthy Lives: A Strategic Review of Health Inequalities in England Post-2010

Medibank Private 2008. The cost of physical inactivity, retrieved 7 January 2011, www.medibank.com.au/Client/Documents/Pdfs/The\_ Cost\_Of\_Physical\_Inactivity\_08.pdf

Meltzer DO, Jena AB, 2010, *Journal of Health Economics,* The economics of intense exercise, 2010, vol. 29 (3), 347-352.

Methorst R, Monterde i BH, Risser R, Sauter D, Tight M, & Walker J, November 2010, *Pedestrian Quality Needs*, WALK21 Cheltenham, United Kingdom, accessed 21 April 2011. www.walkeurope.org/ uploads/File/publications/PQN%20Final%20Report%20[short].pdf

Milat AJ, Monger C, Smith J, Bauman A, Redman S, Goodger B, 2011, The strategic development of the *NSW Health Plan for Prevention of Falls and Harm from Falls Among Older People: 2011 – 2015*; translating research into policy and practice, NSW Public Health Bulletin, vol.22 (3-4)

Patel AV, Bernstein L, Deka A, Spencer Feigelson H, Campbell PT, Gapstur SM, Colditz GA, Thun M, 2010, Leisure time spent sitting in relation to total mortality in a prospective cohort of US adults. American Journal of Epidemiology, Vol. 172 (4), p. 419-29.

Pendeo FJ & Dahn JR, 2005, Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry*, vol. 18, pp. 189-193.

Saelens B & Handy S, 2008. Built environment correlates of walking: a review. Medicine and Science in sports and Exercise vol. 40 (7), supplement, s550-s566

Shaw KA, Gennat HC, O'Rourke P, Del Mar C, 2006, Exercise for overweight or obesity, *Cochrane Database of Systematic Reviews*, Issue 4, DOI: 10.1002/14651858.CD003817.pub3, retrieved 11 January 2011, http://onlinelibrary.wiley.com/o/cochrane/clsysrev/ articles/CD003817/frame.html

Swinburn B and Shelly A, 2008, Effects of TV time and other sedentary pursuits. International Journal of Obesity 32, s132-s136.

Sims J, Hill K, Hunt S, Haralambous B, Brown A, Engel L, Huang N, Kerse N, and Ory M. 2006. National physical activity recommendations for older Australians: Discussion document. Canberra: Australian Government Department of Health and Ageing.

Stephenson J, Bauman A, Armstrong T, Smith B, Bellew B, 2000, *The costs of illness attributable to physical inactivity in Australia: A preliminary study*, report prepared for the Commonwealth Department of Health and Aged Care and the Australian Sports Commission, Commonwealth of Australia, accessed 14 February 2011, www.health.gov.au/internet/main/publishing.nsf/Content/ health-publith-publicat-document-phys\_costofillness-cnt.htm/\$FILE/ phys\_costofillness.pdf

US Department of Health and Human Services, 2008, *Physical activity guidelines advisory committee report*, US Department of Health and Human Services, Washington, DC, retrieved 6 January 2011, www. health.gov/paguidelines/committeereport.aspx

Vallance JK, Winkler EA, Gardiner PA, Healy GN, Lynch BM, Owen N, 2011. Associations of objectively-assessed physical activity and sedentary time with depression: NHANES (2005–2006). *Preventive Medicine*, July 23

Vos T, Carter R, Barendregt J, Mihalopoulos C, Veerman JL, Magnus A, Cobiac L, Bertram MY, Wallace AL, ACE–Prevention Team, 2010, Assessing Cost-Effectiveness in Prevention (ACE–Prevention): Final Report. University of Queensland, Brisbane and Deakin University, Melbourne.

Walk 21, 2006, International Charter for Walking, accessed 27 April 2011, www.walk21.com/papers/International%20Charter%20for%20 Walking.pdf

Walk 21, 2011, Making Walking Count – Canberra, ACT Government City Report

World Health Organization (WHO), 2002, *A Physically Active Life Through Everyday Transport*, WHO Regional Office for Europe.

World Health Organization, 2009, Interventions on Diet and Physical Activity: What Works: Summary Report, Switzerland.

World Health Organization (WHO), 2010, *Global recommendations on physical activity for health*, WHO, Switzerland.

World Health Organization (WHO), 2011, *Physical activity: facts and figures*, accessed April 20 2011, www.euro.who.int/en/what-we-do/ health-topics/disease-prevention/physical-activity/facts-and-figures

Zubrick SR, Wood L, Villanueva K, Wood G, Giles-Corti B, and Christian H 2010, *Nothing but fear itself: parental fear as a determinant of child physical activity and independent mobility*, Victorian Health Promotion Foundation (VicHealth), Melbourne.



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