

# Blueprint for an active Australia

Key government and community actions required to increase population levels of physical activity in Australia—2010 to 2013



# Blueprint for an active Australia: 10 key action areas

#### **Outcome sought**

Increased population levels of physical activity, leading to community-wide benefits in health, the environment, social policy and the economy.





# Blueprint for an active Australia

Key government and community actions required to increase population levels of physical activity in Australia—2010 to 2013

National Heart Foundation of Australia

### Blueprint for an active Australia Key actions

- 1. Implement a national, integrated and ongoing physical activity mass-media strategy.
- 2. Regulate to provide a built environment that supports active living.
- 3. Actively encourage, support and facilitate more walking, cycling and public transport use.
- 4. Develop and implement a physical activity workforce training strategy.
- 5. Provide financial incentives (tax and price) for individuals, families and business to make active choices cheaper and easier.
- 6. Activate healthcare funding systems that support general practitioners (GPs) and other health professionals to prescribe and provide advice about physical activity.
- 7. Provide programs and opportunities to increase physical activity levels among Aboriginal and Torres Strait Islander peoples.
- 8. Implement a life-stage approach to physical activity programming, including:
  - a) a comprehensive active children and youth program
  - b) an active families initiative
  - c) an active adults initiative
  - d) an active older adults campaign.
- 9. Provide physical activity programs in key settings where people live, work and are educated, including:
  - a) workplaces
  - b) local government
  - c) schools and childcare facilities.
- 10. Provide leadership, coordination and infrastructure to support implementation of the above actions:
  - a) establish a Prime Minister's Advisory Council on Physical Activity to oversee development of an implementation strategy for *Blueprint for an active Australia*
  - b) identify fiscal measures to ensure dedicated financial resources to fund ongoing implementation
  - c) fund and support regular monitoring of the Australian population's physical activity levels
  - d) prioritise funding for physical activity research and program evaluation
  - e) monitor the impact of a changing environment.

#### © 2009 National Heart Foundation of Australia

This work is copyright. No part may be reproduced in any form or language without prior written permission from the National Heart Foundation of Australia (national office). Enquiries concerning permissions should be directed to copyright@heartfoundation.org.au.

ISBN 978-1-921226-75-5

PRO-093

Suggested citation: National Heart Foundation of Australia. Blueprint for an active Australia. 2009.

Disclaimer: *Blueprint for an active Australia* has been developed by the Heart Foundation for general information. The statements and recommendations it contains are, unless labelled as 'expert opinion', based on independent review of the available evidence. While care has been taken in preparing the content of this material, the Heart Foundation and its employees cannot accept any liability, including for any loss or damage, resulting from the reliance on the content, or for its accuracy, currency and completeness.

This material may be found in third parties' programs or materials (including but not limited to show bags or advertising kits). This does not imply an endorsement or recommendation by the Heart Foundation for such third parties' organisations, products or services, including these parties' materials or information. Any use of Heart Foundation material by another person or organisation is done so at the user's own risk.

Acknowledgement: The image on page 18 was sourced from the Cycling Promotion Fund (City of Sydney, artist s impression of possible inner city bicycle lane).

# **Foreword**



Physical inactivity is a significant risk factor for cardiovascular disease and other chronic diseases, such as type 2 diabetes and some cancers. The growing prevalence of physical inactivity in Australia, coupled with the alarming rise in the number of Australians who are overweight or obese, is putting enormous strain on

the Australian health system. Urgent action is required to prioritise the prevention of inactivity and overweight and obesity.

While data on the extent of these issues are available, information on best practice solutions is less well developed and disseminated. The Heart Foundation is proud to offer *Blueprint for an active Australia*, outlining evidence-based solutions to increase population levels of physical activity. *Blueprint for an active Australia* provides a succinct summary of evidence and strategies to inform national policy and action plans to address physical activity and complement the Australian Government's recommendations for physical activity across the lifespan for all Australians.

The key action areas outlined in this document aim to address barriers to physical activity and support opportunities for all Australians to be active in their homes, neighbourhoods, schools, workplaces and communities. Blueprint for an active Australia accompanies other associated Heart Foundation documents, including Position statement. Built Environment and Walking and Healthy Spaces and Places, which provide the evidence base as well as concrete solutions and practical actions that can be implemented across Australia to increase physical activity.

Increasing levels of physical activity will not just benefit the health system. Increasing levels of physical activity will also provide gains in relation to climate change, traffic congestion, social cohesion and community safety. Given the urgent need for action, and the wide-ranging benefits that will come from increasing physical activity levels, the Heart Foundation urges the Australian Government to establish a Prime Minister's Advisory Council on Physical Activity to develop a whole-of-government implementation plan based on *Blueprint for an active Australia*.

The formation of this governing council, along with sustainable funding and a commitment to research and evaluation, will ensure that the actions outlined in this blueprint will be given the best possible chance to succeed in making important gains for the health of all Australians. The establishment of an advisory council is in line with recommendations made in the National Preventative Health Strategy developed by the National Preventative Health Taskforce.

The Heart Foundation strongly endorses the actions proposed by the taskforce and encourages the Government and the National Prevention Agency (planned to commence operation in 2010) to support implementation of these actions as well as those outlined in *Blueprint for an active Australia*.

Dr Lyn Roberts AM
Chief Executive Officer – National

# Contents

- 1 Foreword
- 3 Introduction
- 4 Executive summary
- 5 Blueprint for an active Australia 10 key action areas
- 7 A snapshot of physical activity in Australia
- 10 Key action area 1
  Implement a national, integrated and ongoing community mass-media strategy
- 12 Key action area 2
  Regulate to provide a built environment that supports active living
- 14 Key action area 3

  Actively encourage, support and facilitate more walking, cycling and public transport use
- 16 Key action area 4

  Develop and implement a physical activity workforce training strategy
- 18 Key action area 5
  Provide financial incentives (tax and price) for individuals, families and business to make active choices cheaper and easier

#### 20 Key action area 6

Activate healthcare funding systems that support GPs and other health professionals to prescribe and provide advice about physical activity

#### 22 Key action area 7

Provide programs and opportunities to increase physical activity levels among Aboriginal and Torres Strait Islander peoples

#### 24 Key action area 8

Implement a life-stage approach to physical activity programming including children and youth, families, adults and older adults

#### 28 Key action area 9

Provide physical activity programs in key settings where people live, work and are educated

#### 32 Key action area 10

Provide leadership, coordination and infrastructure to support implementation of the above actions

- 35 References
- 40 Index

# Introduction

#### Purpose of Blueprint for an active Australia

Blueprint for an active Australia provides key information to formulate a national physical activity plan for action for governments, organisations, associations and agencies. It details key cost-effective government, non-government and community actions that will increase physical activity levels in Australia from 2010 to 2013. Implementation of these measures will require governments to give priority to physical activity, and will need cross-community engagement.

The blueprint draws on available evidence and expert opinion informed by the literature. The evidence supports the need for implementation of a comprehensive range of actions at national, state and local levels, which are then monitored and evaluated. These actions should address barriers to physical activity and create opportunities for Australians to be active in their homes, neighbourhoods, schools, workplaces and communities.

**Blueprint for an active Australia** has been developed by the Heart Foundation. It synthesises input from the following members of the Heart Foundation's National Physical Activity Committee:

- Professor Billie Giles-Corti (Chair), University of Western Australia
- Dr Kylie Ball, Deakin University (until October 2007)
- Professor Adrian Bauman, University of Sydney
- Professor Bill Bellew, University of Queensland
- Professor Wendy Brown, University of Queensland
- · Associate Professor Jo Salmon, Deakin University
- Mr Trevor Shilton, Heart Foundation, Western Australia
- Ms Bree Olsen, Heart Foundation, National Senior Project Officer (until October 2007)
- Ms Bianca McGougan, Heart Foundation, National Senior Project Officer (from October 2007).

### What is the policy context for *Blueprint for an active Australia?*

Blueprint for an active Australia aims to build on previous health reforms and inform new approaches. It provides a succinct 10-point plan incorporating proven and cost-effective strategies for increasing population levels of physical activity. These complement and add value to:

 Be Active Australia: A Framework for Health Sector Action for Physical Activity 2005–2010<sup>2</sup>

- the National Service Improvement Framework (NSIF) on heart, stroke and vascular disease
- the National Chronic Disease Strategy endorsed by the Australian Health Ministers Conference (AHMC) in November 2005
- the National Obesity Taskforce—national action agenda for children, young people and their families, national action agenda for adults and older Australians, and priority actions for Aboriginal and Torres Strait Islander peoples
- the National Reform Agenda agreed to by the Council of Australian Governments (COAG) in 2006
- the National Health and Hospitals Reform Commission (NHHRC)
- the National Preventative Health Taskforce (NPHT)— National Preventative Health Strategy.

Clearly there is a central role for promoting physical activity within health policy. However, health sector intervention alone will be an insufficient response to inactivity. Many of the factors influencing physical activity are not within the purview of the health sector. Physical activity is directly impacted by policies in transport, local government, education, planning, sport and recreation, and Treasury. Increasing population levels of physical activity can provide important community benefits in addition to health benefits. These include benefits in relation to climate change, traffic congestion, social cohesion and community safety.

Achieving a physically active population will also address the broader Council of Australian Governments (COAG) goals of improving productivity and workforce participation by keeping people well and reducing the burden of disease incurred when people do succumb to chronic diseases, including cardiovascular disease.

The cross-community nature of physical activity necessitates the formation of a Prime Minister's Advisory Council on Physical Activity (PMACPA) to develop an implementation plan based on *Blueprint for an active Australia*.

# Executive summary

Physical inactivity in Australia remains disturbingly prevalent. In 1997, 38% of Australian adults were not active enough to gain health benefits, and by 2000 this figure had risen to 43%.<sup>3</sup> Recent state surveys have indicated increases in physical activity, with data from New South Wales and Western Australia showing around 41% of the adult population in those states are not active enough to gain health benefits.<sup>4</sup>

Physical inactivity is a major contributor to the burden of chronic disease, including cardiovascular disease and diabetes, and increases in population inactivity add significantly to this burden. Physical inactivity is also an important driver of the epidemic of overweight and obesity.<sup>5</sup> It produces a massive drain on our healthcare system, with research conducted in 2007 estimating that if more Australians were physically active for just 30 minutes a day, the Australian healthcare system could save \$1.5 billion annually.<sup>6</sup>

There is growing scientific evidence that being physically active can:

- reduce risk from Australia's leading chronic diseases and their risk factors
- extend years of active independent life
- reduce disability
- improve quality of life for all Australians.

Coordinated national efforts are required without delay to translate the compelling accumulated evidence into concerted national action.

The extent of the problem is clear. We now have good evidence and intelligence regarding actions that will make a difference, so now is the time to increase our commitment to well-funded interventions.

Changing current patterns of physical activity in Australia requires a long-term strategy led by federal, state and local governments, supported by public and private stakeholders. The Heart Foundation encourages this collaborative approach.

A comprehensive and long-term plan is urgently required, incorporating a strategy mix that addresses:

- · community awareness and education
- supportive environments for walking, cycling and recreational physical activity
- program opportunities in the places where Australians live, work and are educated.

Accordingly, a 10-point plan is proposed.



# Blueprint for an active Australia: 10 key action areas

#### **Outcome sought**

Increased population levels of physical activity, leading to community-wide benefits in health, the environment, social policy and the economy.



- 1. Implement a national, integrated and ongoing physical activity mass-media strategy.
- 2. Regulate to provide a built environment that supports active living.
- 3. Actively encourage, support and facilitate more walking, cycling and public transport use.
- 4. Develop and implement a physical activity workforce training strategy.
- 5. Provide financial incentives (tax and price) for individuals, families and business to make active choices cheaper and easier.
- 6. Activate healthcare funding systems that support general practitioners (GPs) and other health professionals to prescribe and provide advice about physical activity.
- 7. Provide programs and opportunities to increase physical activity levels among Aboriginal and Torres Strait Islander peoples.
- 8. Implement a life-stage approach to physical activity programming, including:
  - a) a comprehensive active children and youth program
  - b) an active families initiative
  - c) an active adults initiative
  - d) an active older adults campaign.
- 9. Provide physical activity programs in key settings where people live, work and are educated, including:
  - a) workplaces
  - b) local government
  - c) schools and childcare facilities.
- 10. Provide leadership, coordination and infrastructure to support implementation of the above actions:
  - a) establish a Prime Minister's Advisory Council on Physical Activity to oversee development of an implementation strategy for *Blueprint for an active Australia*
  - b) identify fiscal measures to ensure dedicated financial resources to fund ongoing implementation
  - c) fund and support regular monitoring of the Australian population's physical activity levels
  - d) prioritise funding for physical activity research and program evaluation
  - e) monitor the impact of a changing environment.

# A snapshot of physical activity in Australia

A summary of key statistics and research relating to physical activity in Australia is provided in this section.

# How physically active are Australians?

Physical inactivity in Australian adults is prevalent. In 1997, 38% of Australian adults were not active enough to gain health benefits and by 2000 this proportion had risen to 43%.<sup>3</sup> Findings from the 2007 Children's Nutrition and Physical Activity Survey confirm that on any given day, 31% of children aged from 9 to 16 years were not achieving the national recommendation of at least 60 minutes of moderate to vigorous physical activity. Few children aged from 9 to 16 years met the guidelines for electronic media use.<sup>7</sup>



# What are the benefits of physical activity?

There are wide-ranging benefits associated with increasing physical activity across health, social, economic and environmental dimensions.

#### **Health benefits**

The largest body of evidence relates to the role of physical activity in contributing to improved health and functional ability, as well as reducing chronic illness and disability. Physical inactivity is also an important contributor to the epidemic of overweight and obesity.<sup>5</sup>

If all Australian adults met national physical activity guidelines, this would have a massive impact on Australian's health by preventing:

- one-third of coronary heart disease deaths<sup>8,9</sup>
- one-quarter of diabetes cases8,9
- one-quarter of colon cancer deaths<sup>8, 10</sup>
- up to 12% of breast cancer risk<sup>9, 11</sup>
- about 15% of ischaemic stroke risk. 9, 12

#### Social benefits

Regular physical activity delivers mental and social health benefits by reducing depression and anxiety and improving self-esteem and self-concept.<sup>13, 14</sup>

Physical activity programs also provide social benefits, as they harness community resources and mobilise people to engage with their neighbours and community. Active and vibrant communities encourage children to walk to school, organise local physical activity programs and services, and promote neighbourhood safety.

#### **Economic benefits**

Research conducted in 2007 estimated that if more Australians were physically active for just 30 minutes a day, the Australian healthcare system could save \$1.5 billion annually.<sup>6</sup>

A physically active community would use fewer costly medical interventions, reduce the demand on health services, and contribute to a more productive workforce that is less prone to injury and associated compensation and rehabilitation costs.

#### **Environmental benefits**

Walking or cycling for transport is a form of physical activity that can easily be incorporated into daily activities for many people, and can also reduce greenhouse gas emissions and air pollution if used to replace car trips.<sup>15</sup>

There is growing evidence that the built environment affects the transport choices of both adults<sup>16-18</sup> and children.<sup>19-21</sup> Characteristics such as higher residential density, land use mix, urban sprawl, traffic, street connectivity, access to destinations such as shops and parks, aesthetics and safety have also been found to be important correlates of walking for transport.<sup>22-24</sup>

# What are the benefits of physical activity across the lifespan?

Physical activity is beneficial across the lifespan, providing health benefits from early infancy to older age.

#### For children and families

Physical activity is important for young people's health.<sup>25, 26</sup> Parents are key influencers of children's participation in physical activity.

Children and adolescents who participate in higher levels of physical activity have fewer risk factors for cardiovascular disease,<sup>27</sup> and there is a growing body of evidence that inactive children are more likely to become inactive adults.<sup>28</sup> Children's level of physical activity or sport is positively associated with cognitive functioning or academic success.<sup>29,30</sup>

The global increase in the prevalence of childhood overweight and obesity<sup>31</sup> and the almost doubling of prevalence among Australian children between 1985 and 1995 (to 19 to 23%)<sup>32</sup> gives rise to great concern.

Studies confirm that primary prevention during early childhood years is critical for reducing the likelihood of poor adult health, and reinforce the urgent need for effective physical activity programs.<sup>33, 34</sup>

#### For adults

Physically active adults have lower all-cause mortality and lower rates of chronic diseases (see 'Health benefits' earlier in this section).

#### For older adults

Australia's ageing population highlights the need for an increased focus on improving levels of physical activity across the life course. Regular physical activity promotes healthy ageing, reduces the risk of dying prematurely, and reduces the risk of developing heart disease, type 2 diabetes, high blood pressure and colon and breast cancer.<sup>35</sup> Being active also promotes better mental and social health, providing opportunities for social engagement and support—particularly for people who may be socially isolated. Additional benefits include reduced risk of osteoporosis and reduced risk of falls through improved flexibility, strength and balance.

If older adults could be encouraged to be more active as they age, frailty and disability associated with falls would be reduced, and function and physical and mental health in older adults would be improved.

#### Equity and access

There are some population subgroups who are less likely to participate in physical activity. These subgroups include:

- women
- · working adults
- · people with lower education levels
- parents
- obese people.36,37

Many people in the Australian community have restricted access to opportunities to be active. Reduced access may be due to a range of factors including age, disability or low income. Poorer families, older adults and Indigenous Australians are more likely to live in outer metropolitan areas or in rural communities with poor or ageing physical activity infrastructure. Poorer members of the community, people with disabilities and older adults may be further disadvantaged by:

- transport policy and urban planning that is dominated by the car (rather than public transport, walking and cycling options)
- urban planning that fails to provide for accessible physical activity, sport, recreation, walking and cycling
- the high cost of physical activity, recreation and sport.

It is vital that policies are implemented to ensure access, increase affordability and increase opportunities for participation by disadvantaged members of the community. Policies need to be developed and implemented to give specific priority to enabling access and participation for:

- Aboriginal and Torres Strait Islander communities
- people on low incomes
- people with disabilities
- older adults.



Implement a national, integrated and ongoing physical activity mass-media strategy

#### Why is this important?

Mass-media strategies are effective when based on sound theory, when adequately resourced and when implemented in combination with community physical activity programs. Consider the following facts.

- Mass media is effective in setting a community agenda around physical activity and increasing awareness. It serves to inform, remind, motivate and support healthrelated change.<sup>38, 39</sup>
- Media campaigns have achieved positive results when based on sound theory and research and when combined with community activities.<sup>40</sup> This comprehensive approach may include integration with environmental and policy changes, and communitybased strategies.<sup>38, 41</sup>
- The media can stimulate increases in help-seeking behaviours (e.g. calls to helplines) and can significantly change beliefs and attitudes.<sup>42</sup>
- A review of community-wide campaigns identified 10 studies that used diverse media in addition to social support, risk factor screening, community events and policy changes. There was a median increase of 4% in physical activity participation, and a median increase of 16% in energy expenditure. Of the 10 studies reviewed, only one failed to report an increase in physical activity.<sup>43</sup>
- Media is pervasive in the lives of young people and presents an opportunity to advertise the benefits of a healthy, physically active lifestyle. After one year, an evaluation of the US child and youth physical activity campaign VERB found higher levels of physical activity in subgroups of US children.<sup>44</sup>

#### What must be done?

# Fund an integrated, ongoing, targeted physical activity mass-media strategy

- Adequately fund an ongoing, targeted, physical activity mass-media strategy.
- Integrate this strategy with media approaches to obesity and healthy eating.

# Complement media campaigns with community activities

- Complement the mass-media strategy with community activities designed to encourage a physically active culture in Australia (mass-media advertising, special events, TV-free weeks/switch-off days, car-free days, etc.)
- Fund and promote media-linked information services (telephone information line, website, professional education) that actively promote physical activity and helps individuals to take action.



Regulate to provide a built environment that supports active living

#### Why is this important?

Community and neighbourhood environments impact on local walking, cycling and public transport use as well as recreational physical activity. Consider the following facts.

- For decades there has been growing concern about the unsustainable post-World War II planning principles adopted in Australia. These are characterised by high motor vehicle dependency, segregated land use, disconnected streets, low residential density and limited public transport and local employment.<sup>45-47</sup>
- A number of reviews have shown increases in walking in neighbourhoods characterised by higher density, mixed-use zoning, interconnected streets and access to public transport.<sup>20, 23, 48, 49</sup>
- The Heart Foundation has concluded that walking can be increased through interventions and planning that focus on mixed-use planning, street connectivity, increased population density and greater walkability (generally a composite of the above attributes).<sup>23</sup>
- Creating more 'liveable' neighbourhoods has the potential to produce significant sustainability benefits by reducing car use, improving access to local services, and more efficient land use.
- Although there is limited evidence to date, the built environment can influence mobility, independence, autonomy and quality of life in old age, as well as physical<sup>50, 51</sup> and mental<sup>52-54</sup> health.
- Young people who live in more walkable, pedestrianfriendly neighbourhoods with reduced exposure to traffic are also more likely to walk.<sup>55</sup>
- To encourage children to walk locally, there needs to be a greater emphasis on reducing exposure to traffic to increase actual and perceived safety.
- There is reasonably strong evidence of an association between parks and open spaces and walking.
   Having access to public open spaces is associated with walking as a form of transportation, as well as achieving recommended levels of walking.<sup>56</sup>

#### What must be done?

# Prioritise walking and cycling in transport policy

- Reorient transport policy, funding and infrastructure to prioritise planning for walking, cycling and public transport.
- Infrastructure funds should prioritise rapid mass-transit projects, increasing public transport links and active transport, and decreasing travel time to work and private motor vehicle use.
- Build and retrofit existing neighbourhoods to increase pedestrian and cyclist access to shops, workplaces, public transport and services, rather than focusing on the mobility of the motor vehicle.

# Develop and implement healthy planning guidelines

- Support the development, implementation and evaluation of *Healthy Spaces & Places*, a guide for planning urban environments that are supportive of active living and wellbeing.
- Support the development and implementation of healthy planning policies at state and territory level.
- Mandate physical activity impact assessments on all planning and policy decisions.
- Develop, implement and evaluate tools and educational strategies to increase the capacity of planners to embrace active living in their practice.
- Tailor these approaches to the needs of states and territories.

# Implement health planning principles in new subdivisions, retrofitting and transport plans

- Build new neighbourhoods and retrofit existing neighbourhoods using active living design codes that consider:
  - o land use—increase the density of housing, particularly around shops and services; connected street networks; access to public transport; access to shops, schools, parks and services
  - o transportation systems—prioritise pedestrians and cyclists over motorists; access to footpaths; on and off-road cycle paths; access to affordable public transport
  - o urban design that improves amenity and increases street and park surveillance.
- Design streets for people, not only for cars, recognising that streets are a social as well as a transport space, and therefore need a social design as well as engineering measures.<sup>57</sup>



#### Design high-quality public open space to suit the needs of all ages

- Ensure high-quality and usable public open spaces that cater for different target groups (children, adolescents, adults and older adults) and are accessible to encourage walking, as well as active recreation and sport.
- State and local governments develop open-space policies and strategies that include mixed-use spaces (structured sport, community gardens, structured and unstructured play areas), linked by active transport options and walkable catchments.

# Support a federally funded community physical activity infrastructure fund through local government

Provide funding through an Australian Local
Government Infrastructure fund to support the
construction and maintenance of walking paths, cycle
paths, dual-use paths, swimming pools, community
recreation centres, skate parks and other sport and
recreation infrastructure that will make the choice to
be active easier for people of all ages.

## Ensure environments provide physical activity access to people with disabilities

• Support neighbourhood design that promotes physical activity access for people with disabilities.

Actively encourage, support and facilitate more walking, cycling and public transport use

#### Why is this important?

Encouraging and supporting walking and cycling for recreation and transport, and promoting greater use of public transport, is good for health and good for the environment. Consider the following facts.

- Physical activity, including walking and cycling, plays an important role in reducing the risk of cardiovascular and other chronic diseases and brings with it a wide variety of benefits for physical and mental health, as well as social and community health.58,59
- In the last decade, there has been a rapid decline in the number of children walking or cycling to school, 7, 47, 60 and few adults participate in walking or cycling as a mode of transport.48
- · Observational studies have consistently shown that children who walk or cycle to school engage in more physical activity than those who travel by other means. 61, 62
- Increasing walking, cycling and public transport use is consistent with government sustainability objectives to reduce motor vehicle dependence and its associated environmental problems, including air and noise pollution, severance, greenhouse gases, energy use and sprawl. It will also help reduce economic impacts, such as the high costs of passenger transport and infrastructure, congestion, and social problems including road rage, loss of public safety and community, and poor transport choice for disadvantaged or vulnerable groups. 18, 63-65
- Epidemiological studies have shown that women who increased their walking distance and speed have a lower risk of cardiovascular disease, type 2 diabetes and all-cause mortality.66
- The successful implementation of combinations of interventions to promote walking has the potential to make a substantial contribution towards increasing the activity of sedentary people.<sup>67</sup>
- There is now strong evidence that the built environment affects the transport choices of both adults16-18,64 and children.46

- · Multi-level interventions are required to change behaviour—namely, creating a supportive physical environment (e.g. building cycle paths), in tandem with social marketing interventions designed to create a supportive cultural environment and to encourage change in individuals.68
- Future interventions should aim to reduce barriers to using active modes of transport, in particular reducing actual and perceived travel time by bus and bicycle. Workplace policy interventions that appear to hold particular promise to encourage active commuting include implementation of a subsidised public transport pass, increased cost of parking and improved bus services and cycle networks.<sup>69</sup>

#### What must be done?

#### Reorient transport policy in favour of walking, cycling and public transport

- A new paradigm of thinking is required in transport policy that defines transport to mean 'walking, cycling, public transport and the motor vehicle'. This new definition, standardised across industry and all spheres of government, should prioritise 'users' by classifying them in descending order of importance pedestrian, cyclist, public transport user and finally, motor vehicle user.
- Reorient transport policy, funding and infrastructure to prioritise planning for walking, cycling and public transport.

#### Reorient land use practice and policy to prioritise walking, cycling and public transport

- Revise land use strategy practices to focus on planning for accessibility of shops, workplaces and services rather than planning for mobility of the motor vehicle.
- · Modify land use planning to increase densities that make public transport more viable and make walking and cycling more attractive and practical choices.

# Improve the frequency, reach and affordability of public transport

- Improve the frequency and reach of public transportation.
- Subsidise the cost of public transport, especially for people living in outer metropolitan areas.
- Allow bicycles to be taken on public transport during peak times.

## Make the streets around schools safer for all children

- Map routes to school to provide useful and accurate information that can be used to promote safer walking and cycling to school.<sup>70</sup>
- Develop designated car drop-off zones 500 metres from schools, supported by walking school buses for the last leg of the journey to school.
- Further develop safe routes to school.
- Reinstate road safety classes and bicycle education in all schools.
- Fund end-of-trip cycling infrastructure, such as safe cycle parking facilities and lockers.

#### Make it easier to walk and cycle to work

- Provide shower facilities in workplaces (e.g. include shower facilities in all disability-access toilets).
- Provide safe bicycle parking facilities and lockers at workplaces for staff who cycle.
- Reduce car parking subsidies, and use this funding to support a subsidised public transport program for employees.
- Provide incentives for staff to use alternative forms
  of transport to attend meetings (e.g. free bicycle) and
  reduce incentives to use private motor vehicles or taxis.
- Limit the parking available for staff living within close proximity to their workplace.
- Lobby state governments to allow bicycles to be taken on public transport during peak times.
- Conduct localised promotional activities such as TravelSmart Workplace programs.

### Implement bike rental or loan schemes in cities

 Trial a 'city bikes' scheme (http://www.springwise. com/transportation/city\_bike\_schemes/)—a free or rented bicycle loan scheme to encourage cycling within the central business districts.

#### Provide safe parking for bikes

• Provide safe bicycle parking amenities at public facilities such as libraries and community centres.

## Provide safe cycling paths separated from road traffic

- Prioritise the movement of cyclists and pedestrians over motor vehicle drivers in town planning (e.g. provision of walking and cycling infrastructure).
- Provide public seating and public toilets in locations that meet the needs of all users.
- Increase and connect cycle path networks within and between local government authorities.
- Restrict motor vehicle access to town centres by:
  - o restricting car parking opportunities
  - o creating designated pedestrian spaces and thoroughfares (malls)
  - reducing car parking subsidies and using these funds for programs and infrastructure designed to encourage more walking and cycling
  - o implementing a congestion tax for motor vehicles driven into the city centre.

Develop and implement a physical activity workforce training strategy

#### Why is this important?

In Australia we have a large professional workforce that could be mobilised to promote different forms of physical activity. However, a 2003 national survey of government capacity to address the issues of overweight and obesity found there was limited strategic readiness to take on difficult challenges, such as halting our obesity epidemic.<sup>71</sup> A range of training and capacity-building strategies is needed to cater for people with specialist skills, generalists, and those who develop, implement and evaluate programs that impact on population physical activity.



#### What must be done?

#### Support physical activity workforce training

- Prioritise professional education in physical activity for both the existing workforce and for all appropriate undergraduate courses, such as medicine, teaching, planning, allied health and recreation.
- Provide continuous in-service training opportunities through the postgraduate pathway.
- Continue to advocate and collaborate with the fitness and exercise industry to encourage the targeting and promotion of services to older adults and people with chronic lifestyle conditions.

# Provide ongoing support to national physical activity conferences and networks

- Provide support for the Heart Foundation and other agencies to lead the expansion of the Australian Physical Activity Network (AusPAnet) and the biennial National Physical Activity Conference.
- The Heart Foundation could use the AusPAnet network of members to gather information on workforce training and development needs, and to mobilise professional advocacy action on physical activity.

# Support physical activity-related professional associations to deliver training and professional development

- Establish and strengthen ongoing links with physical activity-related professional associations and industry to ensure quality training and professional development services are available and supported through:
  - o exercise science (Australian Association for Exercise and Sports Science AAESS)
  - o sports medicine (Sports Medicine Australia SMA)
  - o physical and health education teaching (Australian Council for Health, Physical Education and Recreation – ACHPER)
  - o planning (Planning Institute of Australia PIA)
  - o health promotion (Allied Health Professions Australia – AHPA)
  - o public health (Public Health Association of Australia PHAA)
  - o local government (Australian Local Government Association – ALGA)
  - o cardiac rehabilitation (Australian Cardiovascular Health and Rehabilitation Association – ACRA)
  - o physiotherapy (Australian Physiotherapy Association APA)
  - o environmental health (Australian Institute of Environmental Health AIEH)
  - o fitness (Fitness Australia).
- Promote specialist training in physical activity within existing professions, and support training and development of a specialist physical activity workforce.
- Support training programs that deliver programs for people with, or at risk of, chronic conditions (e.g. the Heart Foundation's Heartmoves program).

Provide financial incentives (tax and price) for individuals, families and business to make active choices cheaper and easier

#### Why is this important?

Prices influence behaviour and choices, particularly among people on lower incomes, pensioners and unemployed people. Low income should not be a barrier to participation in physical activity.

Poorer families, older adults and Indigenous Australians are more likely to live in outer metropolitan areas or in rural communities with poor or ageing physical activity infrastructure. Poorer members of the community are further disadvantaged by:

- transport policy and urban planning that is dominated by the car (rather than public transport, walking and cycling)
- urban planning that fails to provide for accessible physical activity, sport, recreation, walking and cycling
- the high cost of physical activity, recreation and sport.

It is vital that policies are implemented to ensure access, increase affordability and increase opportunities for participation by disadvantaged members of the community.

#### What must be done?

Conduct an inquiry to determine opportunities for public policies to favourably influence affordability of physical activity-related products and services. Mechanisms such as pricing, taxation, grants and subsidies should be examined.

#### Provide financial incentives to make public transport, walking and cycling cheaper choices than driving and parking

- Encourage public transport use through a financial subsidy, especially in outer metropolitan suburbs.
- Consider a standard affordable charge for bus and train journeys in cities, regardless of distance.
- Regulate public transport charges to ensure it is more affordable and efficient than using a car.
- Provide financial incentives for people who choose to ride bicycles for transport.
- Financially reward people who walk more, through local business, workplace and government incentives.
- Fund regular 'free days' (e.g. every second Monday) on public transport to encourage new users to try the service.





# Provide taxation relief and financial subsidies for physical activity participation

- Provide increased scope for tax deductibility for physical activity participation (such as club memberships, sporting equipment, bicycles and clothing) in a range of settings.
- Develop a system to provide subsidised sporting club fees for children, especially in families that experience financial hardship.
- Provide subsidised user fees for community services, such as swimming pools and recreation centres, especially in poorer urban suburbs and depressed rural communities.
- Provide fringe benefits tax exemption for workplace packaging of sporting and health club memberships, bicycle purchases and public transport use.

# Introduce insurance incentives for the physically active

- Introduce health insurance rebates for participation in structured and unstructured physical activity.
- Reduce life insurance premiums for physically active customers.

## Ensure financial measures favour the poorest sectors of the Australian community

- Ensure equity and access by providing affordable and accessible physical activity options in the poorest metropolitan suburbs and rural and remote communities.
- Promote subsidised entry to a range of physical activity opportunities for lower socio-economic status individuals and families.

#### **Evaluation and research**

• Evaluate these interventions to assess effectiveness and to measure impacts on vulnerable populations.

Activate healthcare funding systems that support GPs and other health professionals to prescribe and provide advice about physical activity

#### Why is this important?

Primary care has been recognised as a potentially important setting for promoting physical activity.<sup>72</sup> It is prudent to provide advice to increase physical activity because if this is acted upon, it has the potential to reduce risk associated with a range of common chronic diseases. The positive effects include lowering blood pressure, improving insulin sensitivity and glucose homeostasis (i.e. managing type 2 diabetes), and managing blood cholesterol with an expectation that this will lead to decreased incidence of cardiovascular disease and diabetes. Physical activity can also contribute to improved mood and can be useful therapy in the treatment and prevention of depression and other psychological conditions.

Physical activity information and counselling aims to increase knowledge and provide motivation for people to change their behaviour. These approaches often complement the medical model of disease management.

The evidence is compelling and the opportunity exists to enhance the reach of physical activity interventions through government initiatives. However, systems are required to enhance the uptake of preventive care services in primary care.<sup>73</sup> The proportion of consultations in which behavioural risk factors are addressed remains relatively low; thus the treatment gap for lifestyle risk factor management within general practice continues to persist.<sup>74</sup>

Consider the following facts and effective interventions relating to health service settings.

- Around 86% of the Australian population attends a general practice at least once a year, providing substantial opportunity for primary care professionals to observe and influence the lifestyle risk behaviours of their patients.<sup>75</sup>
- GPs are considered a reliable source of information by patients. In a New Zealand study, 78.5% of respondents (n=8187) reported trusting their GP for physical activity information.<sup>76</sup>

- Barriers to GPs and other primary care professionals becoming more actively involved in physical activity interventions are cited to be time and training, insufficient materials, lack of continuing education, absence of financial incentive and lack of confidence in their skills to motivate patients to exercise.<sup>77</sup>
- To assist general practice to further address lifestyle risk factors, a number of resources and initiatives have been developed. In June 2001, the Smoking, Nutrition, Alcohol and Physical Activity (SNAP) Risk Factor Framework for General Practice was developed, offering strategies for lifestyle risk factor management in the general practice setting.
- Although GPs are providing preventive care services (with SNAP counselling occurring in 9.9% of encounters), the rate at which GP visits address behavioural risk factors remains relatively low. Of 100 encounters, 1.9 will cover counselling/advice for exercise; thus the treatment gap for lifestyle risk factor management within general practice continues to persist.<sup>73, 74</sup>
- There is strong evidence that lifestyle modification in a general practice setting can be implemented<sup>78</sup> and that GPs can positively affect their patients' lifestyle behaviours.<sup>79</sup>
- Primary care physical activity interventions with children and youth have been found to be effective in the short term.<sup>80, 81</sup>
- Evidence-based primary care physical activity counselling protocols can be translated into routine practice, although ongoing investment of time to develop partnerships with relevant healthcare organisations is required.<sup>82</sup>
- Brief interventions by GPs and primary care nurses to promote physical activity have had some short-term success, with physical activity increases being reported by middle-aged and older adults.<sup>38, 72, 78, 83</sup>

- For every 10 physical activity prescriptions written, one person achieved and sustained 150 minutes of moderate or vigorous leisure activity (using an additional 1000 kcal) per week. This is associated with a 20 to 30% risk reduction in all-cause mortality compared with sedentary individuals.<sup>84</sup>
- Sustained changes related to physical activity interventions in primary healthcare services can be achieved by episodic follow-up, reinforcing positive behavioural change, and by referral to community programs.<sup>85</sup>
- Interventions that use a combination of approaches such as the waiting room, referral to other providers of advice and/or physical activity programs (such as walking groups), interventions using the patient's records, reminder systems and other practice staff—are more likely to change behaviour.<sup>72</sup>
- Lifescripts is a national initiative that uses prescriptions and support materials to help GPs and primary care professionals provide lifestyle advice to patients on the five behavioural risk factors of smoking, nutrition, physical activity, alcohol and weight management. Lifescripts aims to provide primary care professionals with the necessary tools, resources, knowledge and skills to discuss, assess and assist patients to make healthy lifestyle choices. Electronic Lifescripts tools are currently being developed.
- A number of MBS item numbers have been introduced for at-risk patients, or patients with chronic medical conditions and complex care needs that provide the opportunity for general practice to address the lifestyle risk factors, including physical activity. These include health assessments for at-risk patients (the 45–49-year-old Health Check—item 717; and the Aboriginal and Torres Strait Islander Adult Health Check—item 710), the Healthy Kids Check (MBS items 709 and 711), Type 2 Diabetes Risk Evaluation (MBS item 713) and Chronic Disease Management plans.

#### What must be done?

# Support the provision of structured chronic disease risk assessment and management, accompanied by lifestyle interventions including physical activity in primary care

- Improve risk identification, management and outcomes for people at risk of developing cardiovascular disease by implementing absolute risk assessment in general practice and supporting ongoing management for people identified to be at high risk.
- Introduce a program in general practice to improve the ongoing prevention and management of people with established coronary heart disease that includes attention to lifestyle issues, such as physical activity.

- Promote the establishment of electronic registers in general practice for people with, or at high risk of, chronic disease to support delivery of quality health care, including recall of patients to monitor and support physical activity and other lifestyle change.
- Further support systems-based approaches, including financial incentives, that encourage chronic disease risk assessment and follow-up. This could include the prescription of lifestyle advice and physical activity through general practice, using and building on the Well Person's Health Check items (MBS item numbers 710 and 717), general practice management plans and care plans.
- Simplify the health check item numbers with fewer categories, extending the age range (e.g. to 40 to 55 years) and including regular follow-up, rather than oneoff assessments.
- Fund the implementation and evaluation of lifestyle interventions, for example physical activity, in primary health care settings, including general practice.
- Expand the Lifescripts program in primary care by integrating it into Health Check and Chronic Disease Management MBS item numbers. Implement a national referral model to support the advice given by GPs to patients, and integrate such health advice with national physical activity campaign messages and resources.

# Support training for primary care professionals (doctors and nurses) in the prescription of lifestyle advice, including physical activity, for the prevention and management of chronic diseases

- Support, train and fund doctors and health professionals to prescribe lifestyle advice, including physical activity, for the management of coronary heart disease and other chronic conditions (e.g. diabetes and hypertension) on the Medicare payment schedule.
- Provide information services and websites, including electronic Lifescripts.

# Support links between doctors and other professional physical activity providers to maximise access to physical activity opportunities for patients

- Promote multidisciplinary approaches involving links between GPs, practice nurses and exercise physiologists.
- Fund and promote referrals to registered exercise physiologists and physiotherapists to more fully utilise their capabilities.
- Build on the experience of programs that connect with community physical activity providers.

Provide programs and opportunities to increase physical activity levels among Aboriginal and Torres Strait Islander peoples

#### Why is this important?

The rationale for increasing the focus on physical activity among Aboriginal and Torres Strait Islander (ATSI) peoples is compelling.

- Physical inactivity is an important contributor to chronic diseases among Aboriginal and Torres Strait Islander peoples.
- In 2004–2005, 75% of Indigenous Australians aged 15 years and over reported being sedentary or exercising at low levels.<sup>86</sup> Participation in physical activity can benefit Aboriginal and Torres Strait Islander peoples and their communities in many potential ways. These include:
  - making an important contribution to reducing chronic disease
  - o improving physical and mental health and wellbeing
  - o improving social factors, such as community connectedness.

In addition, physical activity can provide important cultural links through activities such as dance, hunting, fishing, bushwalking, intergenerational programs, men's health programs and women's groups.

In general, evidence is limited regarding effective physical activity interventions for targeting Aboriginal and Torres Strait Islander peoples. While further research is needed, given the increased chronic disease risk suffered by Aboriginal people, and the key role of physical activity in reducing risk, physical activity interventions (and their evaluation) should be prioritised in Aboriginal communities. There are numerous examples of community programs described in the 'grey' literature and this is an important source of qualitative information.<sup>87</sup>



#### What must be done?

## Ensure programs are developed in accord with community needs and culture

- Consult Aboriginal and Torres Strait Islander peoples to ensure programs are developed in accord with the needs and interests of local people.
- With respect to local culture, tailor programs for the needs of men, women and children.

# Fund the expansion of programs with proven efficacy

 Establish a fund to provide support to enable programs with proven effectiveness to be sustained and to be implemented into other Aboriginal and Torres Strait Islander communities.

#### Ensure the physical and social environment in Aboriginal communities is conducive to safe participation in physical activity

- Ensure all Aboriginal communities have access to environments that are conducive to being active (i.e. attractive open space, shaded areas, basketball rings and safe walking and cycling infrastructure).
- Ensure affordable sport and recreation facilities and programs are provided in Aboriginal and Torres Strait Islander communities (at least the equal of those in non-Indigenous communities).

#### Ensure participation opportunities for Aboriginal and Torres Strait Islander children, at school and at home

 Ensure all Aboriginal and Torres Strait Islander children receive quality physical education at school and have access to inexpensive recreation and sport participation opportunities in their community.

# Fund research and program evaluation to better understand what is working

 Fund intervention research into the effectiveness of strategies to increase physical activity among Aboriginal and Torres Strait Islander peoples.



Implement a life-stage approach to physical activity programming, including:

8a a comprehensive active children and youth program

8b an active families initiative

8c an active adults initiative

8d an active older adults campaign.

Participation in physical activity is important across the lifespan. Consider the following evidence on effective strategies for increasing physical activity throughout life.

#### 8a For children and youth

#### Why is this important?

#### School-based physical activity

- There is evidence that modifying the physical education curriculum by making classes longer or having students be more active during class is effective in increasing time spent in moderate or vigorous activity. This result applies across diverse racial, ethnic and socio-economic groups, boys and girls, elementary and high school students, and rural and urban populations.<sup>88</sup>
- Interventions that incorporate whole-of-school approaches, including curriculum, policy and environmental strategies, appear to be more effective than curriculum-only approaches.<sup>89</sup>
- Interventions that have been found to be most effective in the school setting have included focus on physical education, activity breaks and family strategies.<sup>90</sup>
- Studies have shown surprisingly low levels of mastery of fundamental movement skills among Australian children and adolescents,<sup>38</sup> which discourages participation.
- Traditional and innovative playground markings in schools increase total energy expenditure, rate of energy expenditure and duration of physical activity.<sup>91</sup>
- Children are more active during free time in schools when sufficient play areas, facilities, sports equipment and supervision are provided.<sup>92</sup>

#### Urban environments

- Children are less likely to walk or cycle around neighbourhoods that require crossing busy roads, or that lack parks or sports grounds.<sup>93</sup>
- Adolescents who are able to socially interact within their neighbourhood—and whose parents consider the neighbourhood to be safe, accessible and aesthetically pleasing—are more likely to walk or cycle.<sup>94</sup>
- Where measures have been put in place to calm or reduce traffic, more children are allowed to walk or ride to school on their own.<sup>95</sup>
- Playground designs affect children's physical activity levels.<sup>96</sup> Some contemporary playgrounds may be more conducive to passive play or inactivity.
- Convenient places to play, and frequency and time spent outdoors, are significant correlates with physical activity in children.<sup>97</sup>
- Results across various studies show that children's participation in physical activity is positively associated with publicly provided recreational infrastructure, access to recreational facilities and schools, and transport infrastructure (such as the presence of sidewalks and controlled intersections, and access to destinations and public transport).<sup>98</sup>

#### Partnership approaches

• Interventions that show the greatest potential to have a lasting impact on physical activity participation appear to be multi-component interventions that address most aspects of an adolescent's life, and include adolescents and the most influential people in their lives in decision-making.<sup>32</sup>

#### 8b For active families

#### What must be done?

# Implement a community-wide physical activity campaign focused on children and families

 Support a comprehensive active children and families campaign that provides education and physical activity opportunities directly to children and families in schools, neighbourhoods and communities.

# Require 150 minutes per week of compulsory, high-quality physical education for all children

- Require 150 minutes per week of high-quality physical education for all school children.
- Require enhanced pre-service teacher training in physical education for all primary teachers, and ensure regular in-service training for all practising teachers.

# Design playgrounds and parks that support children's physical activity

- Design active playgrounds and recreational areas targeting different age groups and taking into account local demographic trends.
- Design open space that is challenging and interesting for older children.
- Support and encourage local governments and community-based organisations to develop children's programs that build movement and game skills and promote fitness.

## Implement physical activity policies in day care and after-school care

• Implement a child care and family day care scheme that certifies centres providing appropriate, fun and interactive forms of physical activity in line with the national guidelines.

#### Why is this important?

- Physical activity can enhance the quality of family time through active participation and set a foundation for positive, lifelong relationships between parent and child.
- Parents are important role models for healthy eating and increasing physical activity; thus, campaigns aimed at both parents and children are important.
- Competing demands on the time and resources of parents can often result in declining time for physical activity resulting in weight gain and other health problems.

#### What must be done?

#### Fund an Active Families Initiative that provides programs to support and benefit families (including single-parent families) at the community level and in response to community need

- Provide education that encourages parents to be positive role models for their children through regular physical activity and other lifestyle habits, such as being non-smokers.
- Design, promote and disseminate locally targeted information on family-oriented physical activity opportunities.
- Encourage, fund and support local governments and community organisations to develop programs that aim to get families active using existing infrastructure (e.g. fun at the pool days and active parks programs).
- Develop programs that involve all family members within sporting and community clubs.

#### 8c For active adults

#### Why is this important?

- It is recommended that every adult should accumulate at least 30 minutes of moderate-intensity physical activity on most days of the week, but few people meet this target. There is a need to translate this recommendation into a meaningful behaviour pattern that can fit into daily life.
- Recent national and state surveys have shown that levels of physical activity have increased slightly since 2000. This is true for all age groups except 20 to 30-year-olds, who are typically starting careers and families. This group will require special attention if physical activity levels are to be improved.<sup>37</sup>
- In all recent state physical activity surveys, adults attribute their failure to achieve the recommended guidelines to a lack of time.
- There is evidence of short-term benefits from unsupervised home-based walking programs, both at and below the currently recommended minimum target level of exercise. This may be useful in encouraging adults who feel they do not have the time to exercise on five days a week to consider finding time to commit to lower weekly exercise targets.
- Current recommendations urge people of all ages to accumulate 30 minutes of moderate-intensity activity on most, if not all, days of the week, and to include activity performed at work, at home and for transport in addition to structured leisure-time activity.<sup>101</sup>
- Consistent with the current recommendations for physical activity, people should be encouraged to 'accumulate' physical activity throughout the day.<sup>102</sup> Even including small amounts of activity may lead to achieving an adequate level of energy expenditure over the course of a day.

#### What must be done?

# Implement healthy design policies and active transport programs and policies

 Redesign communities to restore exercise to daily routines—for example, making public transport the focus of urban transport systems, and building more trails and paths to encourage walking, jogging and cycling.

# Support workplace physical activity policies and programs

- Encourage active transport to and from work.
- Develop workplace policies that encourage incidental activity and short activity breaks at work.
- Encourage and support participation in workplace physical activity programs, especially those involving walking, cycling and public transport.

#### 8d For active older adults

#### Why is this important?

- Australia's ageing population is rapidly increasing in number<sup>36</sup> and it is therefore timely to explore how to best motivate older adults to participate in physical activity.
- As our population ages, many older Australians will be sedentary or insufficiently active for good health.
- Physical activity is one of the most important steps older adults can take to increase and maintain their physical and mental health and quality of life. Physical activity plays an important role in the prevention and management of chronic diseases, and has the potential to reduce physical decline, maintain functional ability and prevent injuries.<sup>83</sup>
- Key barriers to older adults participating in physical activity have been identified as existing health problems; cultural issues; environmental factors, especially in lower socio-economic areas; stress; and a lack of time.
- Evidence from reviews suggests that multi-strategy physical activity programs that include education, advice and strategies to increase motivation and reduce barriers to activity are effective with older adults.<sup>83</sup>
- Evidence indicates that interventions set in supervised settings, such as gyms, produce improvements in strength and basic functional tasks.<sup>83</sup>
- Strength and resistance-training programs help to improve strength, mobility and fitness in older adults.<sup>83</sup>



#### What must be done?

Fund an integrated Active Older Australians program that includes the following initiatives.

# A physical activity mass-media marketing campaign targeting older adults

• Design and implement a mass-media campaign tailored to the needs and motivations of older adults.

## Multi-component programs targeting older adults

 Design and implement multi-strategy physical activity programs for older adults that include education, advice and strategies to increase motivation and reduce barriers to activity.

#### A national network of walking groups and other physical activity programs that suit the needs of older adults

- Offer walking groups and physical activity programs that especially meet the needs of older adults. For example, senior swim clubs, water aerobic classes and tai chi are excellent activities for people with arthritis and diabetes. Walking groups provide physical activity in a safe and socially supportive environment.
- Design health club and recreation centre programs to meet the needs of older adults, including offering a variety of opportunities to improve their aerobic fitness, muscular strength and flexibility.

# Policy changes that make physical activity programs in aged care a requirement

• Require suitable physical activity programs in retirement villages and aged care facilities.

#### Urban planning codes that cater for the physical activity and access needs of older adults

 Consider the mobility, access and recreational needs of older adults when planning road crossings, pedestrian infrastructure, public transport access, public open space and recreational infrastructure.

#### **Progressive resistance-training programs**

• Develop and implement strength and resistancetraining programs to improve strength, mobility and fitness, and to reduce falls, in older adults.

Provide physical activity programs in key settings where people live, work and are educated, including:

- 9a workplaces
- 9b local government
- 9c schools and childcare facilities

Creating supportive settings is a cornerstone for successful health promotion as outlined in the World Health Organization's Ottawa Charter for Health Promotion. 104 The settings approach moves interventions upstream from defining goals and targets in terms of populations and people, towards goals that look at changes in organisations, systems and the environment. For physical activity promotion, key settings can be used to reach people where they live, work and learn.

Consider the following facts and effective interventions relating to a range of settings.

#### 9a Workplaces

#### Why is this important?

- Ten million Australians<sup>105</sup> spend on average eight hours per day in workplace settings.
- An increasing number of jobs are sedentary, involving many hours of sitting.
- A physically active workforce can reduce absenteeism and increase productivity, thereby providing important benefits to workplaces.<sup>35</sup>
- A review of interventions that target workplaces suggests that comprehensive strategies are required.
   These strategies include individually tailored behaviour change techniques, mass-reach approaches (electronic and print media), and social support strategies.
- A review of worksite interventions in 26 studies involving more than 9000 workers<sup>107</sup> showed an increase in success rate from 50% to 56%—a significant response that could reduce the risk of cardiovascular morbidity and overall mortality.

- A recent review summarised the evidence of worksite interventions that targeted environmental changes in and around the workplace to promote physical activity.<sup>108</sup> Effective strategies included encouraging use of stairs; building walking tracks outside the company or a 'red-line' route to promote lunchtime walking; and providing exercise equipment and space.
- Point-of-decision prompts that encourage people to use stairs instead of a lift wherever possible are effective in getting people to be more active and are strongly recommended by experts as effective interventions.<sup>43</sup>
- End-of-trip facilities (such as showers and cycle racks) in workplaces have also been of benefit in increasing active transport and physical activity levels in staff by making active transportation more attractive.<sup>109</sup>
- A review of interventions promoting stair use found that an initial doubling of stair use declined after promotional signs were removed. Banners on stair risers (placed on the vertical edge of each step, so they are visible when walking up the stairs) appear to be more effective than posters in promoting longer-term stair use.<sup>110</sup>

#### What must be done?

# Encourage and support active transport programs and policies at work

- Encourage and support active transportation and other physical activities before, during and after work by providing bicycle racks or alternative secure bicycle storage, and end-of-trip facilities such as showers, change room facilities, hair dryers, iron and lockers.
- Actively encourage and support people to walk or cycle to work, or to take public transport.

## Provide incentives for physical activity behaviour

- Provide incentives, promotional activities and rewards to support active behaviour.
- Support sports and physical activity clubs, such as social football and netball teams, and walking and jogging groups.
- Encourage employees to form corporate teams for events such as Corporate Cup, Masters Games, Cycle to Work Day and Walk to Work Day.

## Provide physical activity opportunities during work breaks

 Promote 'walking meetings', lunchtime walks and five to 10 minute walk breaks during the day.

# Consider physical activity impacts of workplace employment policies

- Consider the physical activity and work-life balance implications of workplace policy, rosters and shifts.
- Provide for mandatory physical activity breaks in sedentary workplaces.

# Provide information and education about physical activity and physical activity opportunities and programs

- Provide information on local opportunities for physical activity that can be reached during lunch breaks and before or after work (e.g. walking routes and local gyms).
- Display motivational or informative posters, signage or brochures about the benefits of physical activity and some tips on getting active.
- Publicise physical activity opportunities through email, company intranet or websites, links to relevant websites, noticeboards and newsletters.

# Provide appropriate on-site physical activity facilities in the workplace

 Provide on-site facilities such as gyms, pools or tennis courts wherever possible.

## Ensure equitable access to programs for people with disabilities

- Support the development and delivery of physical activity programs, including sporting opportunities, for people with disabilities.
- Subsidise program participation expenses so that cost is not a barrier to participation by people with disabilities.
- Fund intervention research that can inform better program delivery for people with disabilities.



### 9b Local government

#### Why is this important?

- Local government can play a crucial role in increasing physical activity by creating environments and opportunities for activity and active living, as well as delivering initiatives to meet local community needs.
- City leaders and other decision makers can provide leadership, legitimacy and an enabling environment for developing and implementing policies that support active living for all citizens.<sup>99</sup>
- In the promotion of moderate physical activity, it is increasingly argued that a supportive physical environment is a key factor, with local government being ideally placed to play an important role.
- Physical activity can deliver benefits across many aspects of local government policy, including transport, sport and recreation, culture and the arts, sustainability and social policy. Conversely, increasing population levels of physical activity can also provide benefits in relation to health, climate change, traffic congestion, social cohesion and community safety.
- Changing current patterns of physical activity in Australia requires a long-term strategy centred in local governments. However, this will require support from federal and state governments, as well as ratepayers and non-government sectors.
- Local governments can implement healthy urban planning policies to generate environments that promote opportunities for physical activity and active living.<sup>99</sup>
- Design elements in the built environment—such as street layout, land use, transport systems and the location of recreation facilities, parks and public buildings—can either encourage or discourage physical activity. People are more active when they can easily access key destinations, such as parks, green spaces, workplaces and shops.<sup>99</sup>

#### What must be done?

- Prioritise walking, cycling and sport and recreation infrastructure through an Australian Local Government Infrastructure fund.
- Support the construction and maintenance of walking paths, cycle paths, dual-use paths, swimming pools, community recreation centres, skate parks and other sport and recreation infrastructure that will make the choice to be active easier for people of all ages.
- Promote cooperation and support from state and federal governments for local government physical activity infrastructure and programs, establishing clear roles and commitments for each level of government.
- Increase and connect cycle path networks within and between local government authorities.
- Support and encourage local governments and community-based organisations to develop programs to target the age-specific needs of residents:
  - o younger children
  - o older children
  - o adolescents
  - o young families
- o older adults.
- Encourage, fund and support local governments and community organisations to develop programs that aim to get families active using existing infrastructure (e.g. fun at the pool days and active parks programs).
- Support training and workforce development in local government to enable implementation of physical activity policies and plans.
- Ensure walking and cycling infrastructure enables easy walking and cycling access to shops, schools, recreation facilities, public open spaces and other destinations.
- Develop and retrofit public open space to be easily accessible and multi-purpose, and provided with shade and aesthetically pleasing surroundings.

- Ensure funding is available to promote use of local government facilities (including avenues such as local newspaper advertising and letterbox drops).
- Conduct events and 'come and try' days to attract firsttime users.
- Fund and support 'free days' to encourage first-time users and access to poorer residents.
- Foster social support through programs that engage people in group activities, such as the Heart Foundation's Walking program, and enable training for volunteer leaders.
- Establish equipment loan systems for local residents who can't afford sporting equipment.
- Support local bicycle rental schemes.



# 9c Schools and childcare facilities

#### Why is this important?

- There are 2.2 million students attending Australian state schools, and 1.1 million students in Catholic and independent schools.<sup>111</sup>
- Schools are important settings for education about healthy lifestyles and provide unique opportunities for health promotion that can be reinforced over a period of time with a large number of students.
- Interventions found to be most effective in the school setting have included some focus on physical education, activity breaks and family strategies.<sup>112</sup>
- Childcare facilities, pre-primary, kindergarten and out of school hours care services (such as before and afterschool care) can support and encourage children to be active and should complement the role of families.<sup>2</sup>
- One of the best predictors of fitness and fatness in children is their physical activity pattern in the two hours immediately before and after the formal school day.<sup>113</sup>
- Constraints that conspire against promoting physical activity in family day care settings include a lack of space, a lack of undercover areas for poor weather (both summer and winter), and local playgrounds that are unsuitable for young children or have been vandalised.<sup>114</sup>

#### What must be done?

For actions in the school setting, refer to Key Action Area 8a on page 24.

# Provide training and accreditation in physical activity and nutrition in the childcare sector

- Build capacity of early childhood workers in the area of physical activity.
- Work towards developing and implementing a physical activity accreditation system for childcare systems (similar to that of a SunSmart centre).
- Provide information on local opportunities for physical activity that are suitable for families.

Provide infrastructure, leadership and coordination to support implementation of the above actions:

- establish a Prime Minister's Advisory Council on Physical Activity to oversee development of an implementation strategy for Blueprint for an active Australia
- identify fiscal measures to ensure dedicated financial resources to fund ongoing implementation
- fund and support regular monitoring of the Australian population's physical activity levels
- prioritise funding for physical activity research and program evaluation
- 10e monitor the impact of a changing environment

#### Why is this important?

Government leadership and coordination is essential to the implementation of Blueprint for an active Australia. A series of key strategic investments are needed to ensure implementation is supported by:

- · appropriate and high-level expert advice
- · a sustainable funding stream
- population monitoring and research.

This will require a concerted effort across government sectors, accompanied by reform of existing systems, policies and structures, and infrastructure support, as outlined below.

A Prime Minister's Advisory Council on Physical Activity (PMACPA) will provide high-level expert advice and direction to the implementation of Blueprint for an active Australia. The PMACPA will engage national and international experts, drawing on leading academics and non-government experts from across relevant disciplines in Australia.

The PMACPA will require the highest level of reporting and accountability to ensure its plan is embedded in government policy. This should include reporting to Council of Australian Governments (COAG), Australian Health Ministers' Advisory Council (AHMAC) and other relevant parliamentary and ministerial forums, such as the National Health and Hospitals Reform Commission (NHHRC).

Sustainable financing would fund the initiative at a level of \$10 per head of population. Funding at this level can be achieved by a combination of the provision of new resources from Treasury and creation of a new funding mechanism, such as dedicated tax revenues or an 'Active Living Lottery'.

Increased priority for physical activity can also be achieved through reorientation of existing resources. For example:

- reorient sport and recreation funding to support widespread participation in physical activity in addition to elite sport
- reorient transport funding to support walking and cycling paths together with road funding
- reorient health funding to fund prevention together with treatment
- reorient education funding to prioritise physical education.

Economic arguments need to be prepared and communicated to policy makers. This would enable articulation of evidence of the benefits that would result from increasing investment in a physical activity strategy.

Monitoring of physical activity participation is important for tracking progress, public accountability and policy refinement.

The ability to monitor participation over time tracks progress in attaining physical activity goals and targets across the action areas of *Blueprint for an active Australia*. It also ensures public accountability for funds invested, and informs the further evolution of policy.<sup>115</sup>

There is an urgent need to standardise our approach to monitoring the Australian population's level of physical activity. The Physical Activity Monitoring and Surveillance Project developed a conceptual physical activity monitoring model based on existing literature to provide a framework for two operational models. Model 1 would comprise mapping of the existing available data, where these data are collated and analysed in a consistent manner. Model 2 would incorporate the mapped data with the collection of new data. The new data would include the missing elements identified in the conceptual monitoring model.<sup>115</sup>

Research and development is important for guiding the future direction of physical activity policies and programs in Australia. Any national physical activity strategy needs not only to be thoroughly evaluated but also to be innovative—to be informed and underpinned by research and development investment. Physical activity research and development needs to be supported by dedicated infrastructure and funding.



#### What must be done?

#### Establish a Prime Minister's Advisory Council on Physical Activity to provide strategic advice and oversee implementation of Blueprint for an active Australia

• Establish the highest level of reporting and accountability for this advisory council, embedding it in existing governance structures (NHHRC, COAG, AHMAC and other relevant parliamentary and ministerial forums).

#### Provide a sustainable funding stream dedicated to the promotion of physical activity and specifically to the implementation of Blueprint for an active Australia

- Establish a secure and sustainable funding mechanism for appropriate investment in the implementation of Blueprint for an active Australia at a level of \$10 per head of population. Funding at this level can be achieved by a combination of the provision of new resources from Treasury, creation of a new funding mechanism, such as dedicated tax revenues or proportion of existing taxes, or the development of a National 'Active Living Lottery'.
- Reorient expenditure in key government portfolios to support physical activity. For example:
  - o reorient funding to support participation in physical activity in addition to elite sport
  - prioritise physical activity infrastructure within infrastructure funding
  - o fund walking and cycling paths together with road funding
  - o fund prevention together with treatment.
- Develop and promote to policy makers and Treasury evidence around economic costs/benefits of fiscal investment in physical activity as a preventive strategy.

#### Establish a national surveillance system for physical activity

- Fund and implement consistent, regular monitoring of physical activity levels in adults, adolescents and children. A priority is to support the National Health Risk Survey, for which the Heart Foundation has committed to provide funding.
- · Publicise and disseminate findings.

#### Ensure funding for physical activity research and program evaluation

• Fund physical activity intervention research to inform better program delivery for the Australian community. Develop systems whereby practitioners can learn from and replicate international best practice research or interventions. Provide secure funding for existing dissemination and networking mechanisms, such as the Australian Physical Activity Network (AusPAnet) and the Biennial National Physical Activity Conference. Fund strategic research to fill the areas of most pressing need and identified gaps within the evidence.

#### Monitoring the impact of a changing environment

- When a policy or environmental intervention is implemented in practice, it provides an opportunity to evaluate a 'natural experiment' and observe changes that occur in a population group. Such interventions might take the form of implementing policies and practices specifically designed to alter the food or physical activity environment or activities. Evaluations of natural experiments related to food and physical activity environments are rare and more of these studies are required.116
- There is also a need to develop a national surveillance system that is capable of monitoring changes to policies and the built environment over time.116 Such a surveillance system could be used to provide advice about transportation investment and land development decisions. A national consistent set of policy and food and physical activity environment measures tracked over time would give researchers the ability to cross-validate their work. It would also give practitioners the capacity to have evidencebased strategies to retrofit and build communities to promote health.116 National agreement about the most appropriate measures to include in the surveillance system will be needed. Protocols for creating these measures, including the spatial scales at which they are to be measured, will also need to be established.

# References

- 1 Shilton T, Bauman A, Bull F, et al. Effectiveness and challenges for promoting physical activity globally. In: McQueen S, Jones C, eds. Global perspectives of health promotion effectiveness. New York: Springer, 2007.
- 2 National Public Health Partnership. Be Active Australia: A framework for health sector action for physical activity 2005–2010. Available at: http://www. nphp.gov.au/publications/documents/nphp\_baa\_ aug\_05\_no\_cover.pdf. Accessed 13 November, 2009.
- 3 Armstrong T, Bauman A, Davies J. Physical activity patterns of Australian adults. Canberra: Australian Institute of Health and Welfare, 2000.
- 4 Milligan R, McCormack G, Rosenberg M. Physical activity levels of Western Australian adults 2006. Results from the Adult Physical Activity Survey. Perth: Western Australian Government, 2007.
- 5 Connelly JB, Duaso MJ, Butler G. A systematic review of controlled trials of interventions to prevent childhood obesity and overweight: A realistic synthesis of the evidence. Public Health 2007; 121: 510–17.
- 6 Medibank Private. The cost of physical inactivity. Medibank Private, 2007.
- 7 Australian Government Department of Health and Ageing. 2007 Australian National Children's Nutrition and Physical Activity Survey – Main Findings. Canberra: Australian Government Department of Health and Ageing, 2008.
- 8 Powell KE, Blair SN. The public health burdens of sedentary living habits: Theoretical but realistic estimates. Med Sci Sports Exerc 1994; 26(7): 851–6.
- 9 Stephenson J, Bauman A, Armstrong T, et al. The cost of illness attributable to physical activity in Australia: A preliminary study. Canberra: Population Health Division Publications, 2000.
- 10 Bauman A. Use of population attributable risk (PAR) in understanding the health benefits of physical activity. Br J Sports Med 1998; 32: 279–80.
- 11 Mezzetti M, La Vecchia C, Decarli A, et al. Population attributable risk for breast cancer: Diet, nutrition and physical exercise. J Natl Cancer Inst 1998; 90: 389–94.

- 12 Shinton R. Lifelong exposures and the potential for stroke prevention: The contribution of cigarette smoking, exercise and body fat. J Epidemiol Community Health 1997; 51(2): 138–43.
- 13 Armstrong K, Edwards H. The effectiveness of a pramwalking exercise program in reducing depressive symptomatology for postnatal women. Int J Nurs Pract 2004; 10(4): 177–94.
- 14 Jorm AF, Christensen H, Griffiths KM, et al. Effectiveness of complementary and self-help treatments for anxiety disorders. Med J Aust 2004; 181 (7 Suppl): S29–S46.
- 15 Davis A, Valsecchi C, Fergusson M. Unfit for purpose: How car use fuels climate change and obesity. London: Institute for European Environmental Policy, 2007.
- 16 Buxton M. Energy, transport and urban form in Australia. In: Williams K, Burton E, Jenks M, eds. Achieving sustainable urban form. London: E & FN Spon, 2000: 54–63.
- 17 Naess P. Energy use for transport in 22 Nordic towns. Oslo: Norwegian Institute for Urban and Regional Research, 1993.
- 18 Newman P, Kenworthy J. Sustainable urban form: The big picture. In: Williams K, Burton E, Jenks M, eds. Achieving sustainable urban form. London: E & FN Spon, 2000.
- 19 Timperio A, Crawford D, Telford A, et al. Perceptions about the local neighborhood and walking and cycling among children. Prev Med 2004; 38(1): 39–47.
- 20 Transportation Research Board. Does the built environment influence physical activity? Examining the evidence. Washington DC: Transportation Research Board, 2005.
- 21 Heath GW, Brownson RC, Kruger J, et al. The effectiveness of urban design and land use and transport policies and practices to increase physical activity: a systematic review. J Phys Activ Health 2006; 3 (Suppl 1): S55–S76.
- 22 McCormack G, Giles-Corti B, Lange A, et al. An update of recent evidence of the relationship between objective and self-report measures of the physical environment and physical activity behaviours. J Sci Med Sport 2004; 7(1): 81–92.

- 23 Heart Foundation. Position statement. The built environment and walking. Melbourne: National Heart Foundation of Australia, 2008.
- 24 Saelens BE, Sallis JF, Frank LD. Environmental correlates of walking and cycling: Findings from the transportation, urban design, and planning literatures. Ann Behav Med 2003; 25(2): 80–91.
- 25 Australian Government Department of Health and Ageing. Discussion paper for the development of recommendations for children's and youths' participation in health promoting physical activity. Canberra: Australian Government Department of Health and Ageing, 2005.
- 26 Biddle SJ, Gorely T, Stensel DJ. Health-enhancing physical activity and sedentary behaviour in children and adolescents. J Sports Sci 2004; 22: 679–701.
- 27 Boreham C, Robson PJ, Gallagher AM, et al. Tracking of physical activity, fitness, body composition and diet from adolescence to young adulthood: The Young Hearts Project, Northern Ireland. Int J Behav Nutr Phys Activ 2004; 1: 14.
- 28 Kelder SH, Perry CL, Klepp KI, et al. Longitudinal tracking of adolescent smoking, physical activity and food choice behaviors. Am J Public Health 1994; 84: 1121–6.
- 29 Lidner K. The physical activity participation academic performance relationship revisited: Perceived and actual performance and the effect of banding (academic tracking). Pediatr Exerc Sci 2002; 14: 155–69.
- 30 Sigfusdottir ID, Kristjansson AL, Allegrante JP. Health behaviour and academic achievement in Icelandic school children. Health Educ Res 2007; 22(1): 70–80.
- 31 Wang Y, Lobstein T. Worldwide trends in childhood overweight and obesity. Int J Pediatr Obes 2006; 1: 11–25.
- 32 Booth ML, Chey T, Wake M, et al. Change in the prevalence of overweight and obesity among young Australians, 1969–1997. Am J Clin Nutr 2003; 77: 29–36.
- 33 Dietz WH. Health consequences of obesity in youth: Childhood predictors of adult disease. Pediatrics 1998; 101(3): 518–25.
- 34 Magarey AM, Daniels LA, Boulton TJC. Prevalence of overweight and obesity in Australian children and adolescents: Reassessment of 1985 and 1995 data against new standard international definitions. Med J Aust 2001; 174: 561–4.

- 35 Surgeon General, United States. Physical activity and health: A report of the Surgeon General. Atlanta: Centers for Disease Control and Prevention, 1996.
- 36 Australian Institute of Health and Welfare. Australia's Health 2008. Canberra: Australian Institute of Health and Welfare, 2008.
- 37 Milligan R, McCormack GR, Rosenberg M. Physical activity levels of Western Australian adults 2006. Results from the Adult Physical Activity Study. Perth: Western Australian Government, 2007.
- 38 Bauman A, Bellew B, Vita P, et al. Getting Australia active: Towards better practice for the promotion of physical activity. Melbourne: National Public Health Partnership, 2002.
- 39 Kotler P, Roberto E. Social marketing: Strategies for changing public health behaviour. New York: The Free Press, 1989.
- 40 Marcus BH, Owen N, Forsyth LH, et al. Physical activity interventions using mass media, print media and information technology. Am J Prev Med 1998; 15(4): 362–78.
- 41 Cavill N, Bauman A. Changing the way people think about health-enhancing physical activity: Do mass media campaigns have a role? J Sports Sci 2004; 22: 771–90.
- 42 Donovan R, Carter O. Evidence for behaviour change from media based public education campaigns: Implications for a campaign to reduce time-to-care for patients with acute myocardial infarction. Centre for Behavioural Research in Cancer Control Report 031106. Perth: Curtin University, 2003.
- 43 Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity. A systematic review. Am J Prev Med 2002;22(4):73-107.
- 44 Huhman M, Potter LD, Wong FL, et al. Effects of a mass media campaign to increase physical activity among children: Year-1 results of the VERB campaign. Pediatrics 2005; 116: 277–84.
- 45 Hillman M. The impact of transport policy on children's development. Canterbury Safe Routes to Schools Project Seminar. Canterbury, UK; May 1999.
- 46 Lynch K. Growing up in cities: Studies of the spatial environment of adolescence in Cracow, Melbourne, Mexico City, Salta, Toluca and Warszawa. Cambridge: The MIT Press, 1977.
- 47 Tranter P, Whitelegg J. Children's travel behaviours in Canberra: Car dependent lifestyles in a low-density city. J Transport Geography 1994; 2(4): 265–73.

- 48 McCormack G, Giles-Corti B, Lange A, et al. An update of recent evidence of the relationship between objective and self-report measures of the physical environment and physical activity behaviours. J Sci Med Sport 2004; 7 (1 Suppl): 81–92.
- 49 Owen N, Humpel N, Leslie E, et al. Understanding environmental influences on walking. Am J Prev Med 2004; 27(1): 67–76.
- 50 Cummins S, Stafford M, Macintyre S, et al. Neighbourhood environment and its association with self rated health: Evidence from Scotland and England. J Epidemiol Community Health 2005; 59(3): 207–13.
- 51 Stokols D, Grzywacz J, McMahan S, et al. Increasing the health promotive capacity of human environments. Am J Health Promot 2003; 18: 4–13.
- 52 Buchner D. Physical activity to prevent or reverse disability in sedentary older adults. Am J Prev Med 2003; 25 (suppl): 214–15.
- 53 Dalgard OS, Tambs K. Urban environment and mental health. Br J Psychiatry 1997; 171: 530–6.
- 54 Halpern D. Mental health and the built environment: More than bricks and mortar? London: Taylor and Francis, 1995.
- 55 Carver A, Salmon J, Campbell K, et al. How do perceptions of local neighborhood relate to adolescents' walking and cycling? Am J Health Promot 2005; 20(2): 139–47.
- 56 Giles-Corti B, Donovan RJ. Socioeconomic status differences in recreational physical activity levels and real and perceived access to a supportive physical environment. Prev Med 2002; 35(6): 601–11.
- 57 Walk 21. International charter for walking. Available at: http://www.walk21.com/. Accessed 13 November, 2009.
- 58 Armstrong T, Bauman A, Davies J. Physical activity patterns of Australian adults. Results of the 1999 National Physical Activity Survey. Canberra: Australian Institute of Health and Welfare, 2000.
- 59 US Department of Health and Human Services. Physical activity and health: a report of the Surgeon General. Atlanta: US Department of Health and Human Services, National Centre for Chronic Disease Prevention and Health Promotion, 1996.
- 60 Hillman M, Adams J, Whitelegg J. One false move... A study of children's independent mobility. London: PSI Publishing, 1990.
- 61 Cooper AR, Page AS, Foster LJ, et al. Commuting to school: are children who walk more physically active? Am J Prev Med 2003; 25: 273–6.

- 62 Tudor-Locke C, Ainsworth BE, Adair LS, et al. Objective physical activity of Filipino youth stratified for commuting mode to school. Med Sci Sports Exerc 2003; 35: 465–71.
- 63 Newman P. Human settlements: health and the physical environment. In: Eckersley R, Dixon J, Douglas R, eds. The social origins of health and well-being. Cambridge: Cambridge University Press, 2001: 159–77.
- 64 Newman P, Kenworthy J. Sustainability and cities: Overcoming automobile dependence. Washington: Island Press, 1999.
- Newton P. Australia state of the environment report 2001 (theme report). Canberra: CSIRO Publishing, 2001.
- 66 Manson JE, Greenland P, LaCroix AZ, et al. Walking compared with vigorous exercise for the prevention of cardiovascular events in women. New Engl J Med 2002; 347(10): 716–25.
- 67 Ogilvie D, Foster C, Rothnie H, et al. Interventions to promote walking: Systematic review. Br Med J 2007; 334: 1204.
- 68 Brownson RC, Hagood L, Lovegreen SL, et al. A multilevel ecological approach to promoting walking in rural communities. Prev Med 2005; 41(5–6): 837–42.
- 69 Shannon T, Giles-Corti B, Pikora T, et al. Active commuting in a university setting: Assessing commuting habits and potential for modal change. Transport Policy 2006; 13 (3): 240–53.
- 70 McKee R, Mutrie N, Crawford F, et al. Promoting walking to school: Results of a quasi-experimental trial. J Epidemiol Community Health 2007; 61: 818–23.
- 71 Bull FC, Bauman AC, Bellew B, et al. Getting Australia Active II: An update of evidence on physical activity for health. Melbourne: National Public Health Partnership, 2004.
- 72 Smith B, Marshall A, Huang N. Evaluation of the reliability and validity of two versions of a physical activity assessment tool for general practice.

  Canberra: Australian Government Department of Health and Ageing, 2004.
- 73 Royal Australian College of General Practitioners. The role of general practice in prevention and health promotion. Melbourne: Royal Australian College of General Practitioners, 2006.
- 74 Australian Institute of Health and Welfare. Bettering the evaluation and care of health 2004–2005, Australian General Practice Statistics and Classification Centre. Canberra: Australian Institute of Health and Welfare, 2006.

- 75 Australian Government Department of Health and Ageing. General practice in Australia: 2004. Canberra: Australian Government Department of Health and Ageing, 2005.
- 76 Croteau K, Schofield G, McLean G. Physical activity advice in the primary care setting: results of a population study in New Zealand. Aust N Z J Public Health 2006; 30(3): 262–7.
- 77 Bull FC, Schipper EC, Jamrozik K, et al. Beliefs and behaviour of general practitioners regarding promotion of physical activity. Aust J Public Health 1995; 19(3): 300–4.
- 78 Smith B, Bauman A, Bull F, et al. Promoting physical activity in general practice: A controlled trial of written advice and information materials. Br J Sports Med 2000; 34: 262–7.
- 79 Harris M, Hobbs C, Powell Davies G, et al. Implementation of a SNAP intervention in two divisions of general practice: A feasibility study. Med J Aust 2005; 183: s54–s58.
- 80 Ford BS, McDonald TE, Owens AS, et al. Primary care interventions to reduce television viewing in African-American children. Am J Prev Med 2002; 22(2): 106–9.
- 81 Prochaska JJ, Sallis JF. A randomized controlled trial of single versus multiple health behavior change: Promoting physical activity and nutrition among adolescents. Health Psychol 2004; 23: 314–18.
- 82 Eakin E, Smith B, Bauman A. Evaluating the population health impact of physical activity interventions in primary care: are we asking the right questions? J Phys Activ Health 2005; 2: 197–215.
- 83 Cyarto E, Moorhead G, Brown W. Updating the evidence relating to physical activity intervention studies in older people. J Sci Med Sport 2004; 7(1): 30–8.
- 84 Elley R, Kerse N, Arroll B, et al. Effectiveness of counselling patients on physical activity in general practice: Cluster randomised controlled trial. B M J 2003; 326: 793.
- 85 Briffa T, Maiorana A, Sheerin N, et al. Physical activity for people with cardiovascular disease:
  Recommendations of the National Heart Foundation of Australia. Med J Aust 2006; 184(2): 71–5.
- 86 Australian Bureau of Statistics, Australian Institute of Health and Welfare. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples. Canberra: Australian Bureau of Statistics, 2008.

- 87 Shilton T, Brown W. Physical activity among Aboriginal and Torres Strait Islander people and communities. J Sci Med Sport 2004; 7(1): 39–42.
- 88 Trudeau F, Shephard R. Contribution of school programmes to physical activity levels and attitudes in children and adults. Am J Sports Med 2005; 35(2): 89–105.
- 89 Timperio A, Crawford D, Telford A, et al. Perceptions about the local neighborhood and walking and cycling among children. Prev Med 2004; 38: 39–47.
- 90 Salmon J, Booth M, Phongsaven P, et al. Promoting physical activity participation among children and adolescents. Epidemiol Rev 2007; 0: mxm010v1.
- 91 Stratton G, Leonard J. The effects of playground markings on the energy expenditure of 5–7-year-old school children. Pediatr Exerc Sci 2002; 14: 170–80.
- 92 Sallis J, Conway T, Prochaska J, et al. The association of school environments with youth physical activity. Am J Public Health 2001; 91(4): 618–20.
- 93 Timperio A, Crawford D, Telford A, et al. Perceptions about the local neighborhood and walking and cycling among children. Prev Med 2004; 38: 39–47.
- 94 Carver A, Salmon J, Campbell K, et al. How do perceptions of local neighbourhood relate to adolescents' walking and cycling? Am J Health Promot 2005; 20(2): 139–47.
- 95 Hillman M. The impact of transport policy on children's development. Canterbury Safe Routes to Schools Project Seminar. Canterbury, UK; May 1999.
- 96 Hart CH, Sheehan R. Preschoolers' play behaviour in outdoor environments: Effects of traditional and contemporary playgrounds. Am Educat Res J 1986; 23(4): 668–78.
- 97 Sallis JF, Nader PR, Broyles SL, et al. Correlates of physical activity at home in Mexican-American and Anglo-American preschool children. Health Psychology. 1993;12(5):390–8.
- 98 Davison K, Lawson C. Do attributes in the physical environment influence physical activity? A review of the literature. The International Journal of Behavioural Nutrition and Physical Activity. 2006; 3: 19.
- 99 Edwards P, Tsouros A. Promoting physical activity and active living in urban environments. Geneva: World Health Organization, 2006.
- 100 Tully MA, Cupples ME, Hart ND, et al. Randomised controlled trials of home-based walking programmes at and below current recommended levels of exercise in sedentary adults. J Epidemiol Community Health 2007; 61: 778–83.

- Timperio A, Cameron-Smith D, Burns C, et al. The public's response to the obesity epidemic in Australia: Weight concerns and weight control practices of men and women. Public Health Nutr 2000; 3(4): 417–24.
- 102 Jakicic JM, Wing RR, Butler BA, et al. Prescribing exercise in multiple short bouts versus one continuous bout: effects on adherence, cardiorespiratory fitness, and weight loss in overweight women. Int J Obes Relat Metab Disord 1995; 19(12): 893–901.
- 103 Haralambous B, Osborne D, Fearn M, et al. Participation in physical activity amongst older people. Melbourne: National Ageing Research Institute, 2003.
- 104 World Health Organization. Ottawa Charter for Health Promotion. Health Promot Int 1986; 1(4): 405.
- 105 Australian Bureau of Statistics. Australian Social Trends, 2007. Canberra: Australian Bureau of Statistics, 2007.
- 106 Marshall AL, Owen N, Bauman AE. Mediated approaches for influencing physical activity: update of the evidence on mass media, print, telephone and website delivery of interventions. J Sci Med Sport 2004; 7(1 Supplement): 74–80.
- 107 Dishman R, Oldenburg B, O'Neal H. Worksite physical activity interventions. Am J Prev Med 1998; 15(4): 344–61.
- 108 Engbers LH, van Poppel MN, Marijike J, Chin A Paw MJ, van Mechelen W. Worksite health promotion programs with environmental changes: A systematic review. Am J Prev Med 2005; 29(1): 61–70.
- 109 Bull F. Review of best practice and recommendations for interventions on physical activity. A report for the Premier's Physical Activity Taskforce on behalf of the Evaluation and Monitoring Working Group. Perth: Western Australian Government, 2003.
- 110 Foster C, Hillsdon M. Changing the environment to promote health-enhancing physical activity. J Sports Sci 2004; 22(8): 755–69.
- 111 Australian Bureau of Statistics. Schools Australia. Canberra: Australian Bureau of Statistics, 2006.
- 112 Salmon J, Timperio A. Prevalence, trends and environmental influences on child and youth physical activity. In: Tomkinson G, Olds T, eds. Pediatric fitness. Secular trends and geographic variability. Basel: Karger, 2007: 183–99.

- 113 Norton K, Dollman J. Decreasing physical activity levels? Beyond reasonable doubt! ACHPER Matters 2003; ed 2.
- 114 O'Connor J, Temple V. Constraints and facilitators for physical activity in family day care. Aust J Early Childhood 2005; 30(4): 1–9.
- Salmon J, Ball K, Swinburn B, et al. Physical activity monitoring and surveillance project (PAMSP):
   Development phase. Melbourne: Victorian
   Department of Human Services, 2002.
- 116 Story M, Giles-Corti B, Lazarus Yaroch A, et al. Work group IV: Future directions for measures of the food and physical activity environments. Am J Prev Med 2009; 36(4S): S182–S188.

# Index

#### Note: references in **bold** indicate most relevant information.

```
Aboriginal and Torres Strait Islander peoples, 3, 9, 18, 22–23
accreditation, 31
access, 9, 12, 13, 14, 15, 18-19, 21, 23-24, 27, 29-31
active, 4, 7-8, 18-19, 23, 24-27, 28-31
active living, 11, 12-13, 30
active transport, 12-14, 26, 28, 29
after-school care, see childcare
adults, 3, 6-7, 8, 9, 13, 14, 16, 24, 26, 34
benefits, 7-8
  economic, 8
   environment, 8
   health, 4, 7
   social, 7
built environment, 8, 12, 14, 30, 34
   aesthetics, 8
   connectivity, 8, 12
   density, 8, 12, 13
   mixed land use, 8, 12, 13, 14, 30
   public open space, 12, 13, 27, 30
   retrofit, 12, 13, 30, 34
   walkability, 12
childcare, 25, 28, 31
children, 7, 8, 10, 12-14, 15, 19-20, 23, 24-25, 30-31, 34
community-wide campaigns, 5, 10, 25
cycling, 8, 9, 12, 14-15, 18, 23, 26, 30, 34
disability, 4, 7-9, 15
equity/equitable, 9, 19, 29
evaluation, 10, 12, 19, 21-22, 23, 32, 34
families, 8, 9, 18-19, 24-26, 30, 31
fiscal measures, 32
   economic benefits, 8
   funding, 12-15, 20, 31, 32-34
   taxation, 15, 18-19, 32, 34
funding, 12-15, 20, 31, 32-34
general practice, 20-21
health benefits, 3-4, 7-8
intervention, 3, 4, 8, 12, 14, 19, 20, 21, 22-24, 26, 28,
29, 31, 34
infrastructure (for physical activity), 12, 13, 14-15, 18,
23-25, 27, 30, 32-34
```

```
life-stage, 24-27
  children and youth, 7, 8, 10, 12-14, 15, 19-20, 23,
   24-25, 30-31, 34
  adults, 3, 6-7, 8, 9, 13, 14, 16, 24, 26, 34
   families, 8, 9, 18-19, 24-26, 30, 31
  older adults, 3, 8, 13, 20, 24, 27
   parents, 8, 9, 24, 25
local government, 3, 4, 28, 30–31,
(mass) media, 7, 10, 27-28
   media campaigns, 10
   community-wide campaigns, 10
older adults, 3, 8, 13, 20, 24, 27
parents, 8, 9, 24, 25
physical activity/inactivity, 3, 4, 7-9, 19-21, 22-4,
24-27, 28-31, 32-34
physical education, 17, 23, 24-25, 31-32
planning principles, see built environment
policy, 3, 9-10, 12, 14, 18, 24, 27, 29, 30, 32-34
primary care, 20-21
primary prevention, 8
public open space, 12, 13, 27, 30
public transport, 9, 12, 14-15, 18-19, 24, 26, 27, 29
research, 4, 7, 8, 10, 19, 22, 23, 29, 32-34
seniors, 9, see older adults
schools, 3, 13, 15, 24-25, 28-30, 31
socio-economic status, 19
   equity and access, 9, 19
streets, 12-13, 15
surveillance, 13, 34
taxation, 15, 18-19, 32, 34
training, 16-17, 20, 21, 25-26, 27, 30, 31
transport, 8, 9, 12-13, 14-15, 18, 24, 26, 27-28, 29, 30, 32
  cycling, 8, 9, 12, 14–15, 18, 23, 26, 30, 34
  walking, 4, 8–9, 12, 14–15, 18, 22, 23, 26, 27, 28–30, 321
  public transport, 9, 12, 14–15, 18–19, 24, 26, 27, 29
walking, 4, 8–9, 12, 14–15, 18, 22, 23, 26, 27, 28–30, 321
women, 9, 14, 22, 23
workforce training, 16
workplaces, 3, 9, 12, 14-15, 18-19, 26, 28-29
```

youth, see children



For heart health information 1300 36 27 87 www.heartfoundation.org.au

 $\ \ \, \mathbb{C}$  2009 National Heart Foundation of Australia

This work is copyright. No part may be reproduced in any form or language without prior written permission from the National Heart Foundation of Australia (national office). Enquiries concerning permissions should be directed to copyright@heartfoundation.org.au.

ISBN 978-1-921226-75-5

PRO-093

Suggested citation: National Heart Foundation of Australia. Blueprint for an active Australia. 2009.

Disclaimer: Blueprint for an active Australia has been developed by the Heart Foundation for general information. The statements and recommendations it contains are, unless labelled as 'expert opinion', based on independent review of the available evidence. While care has been taken in preparing the content of this material, the Heart Foundation and its employees cannot accept any liability, including for any loss or damage, resulting from the reliance on the content, or for its accuracy, currency and completeness.

This material may be found in third parties' programs or materials (including but not limited to show bags or advertising kits). This does not imply an endorsement or recommendation by the Heart Foundation for such third parties' organisations, products or services, including these parties' materials or information. Any use of Heart Foundation material by another person or organisation is done so at the user's own risk.