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Plain language review of physical activity among Indigenous Australians

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Plain language review of physical activity among Indigenous Australians

Caitlin Gray¹

1. Australian Indigenous HealthInfoNet

Preface

This Plain language review of physical activity among Indigenous Australians is based on the *Review of physical activity among Indigenous Australians* (2013) by Caitlin Gray, Rona Macniven and Neil Thomson.

Introduction

Physical activity

Physical activity involves movement of the skeletal muscles (muscles attached to the skeleton) of the body and uses energy [1]. Being physically active can occur anywhere: at work, at play, doing chores, travelling. It can be a planned activity (such as organised sport) or unplanned (running to catch the bus). Regular, moderate physical activity (see Box 1) can help to [1]:

- improve muscle strength
- increase heart and lung health
- reduce the risk of some diseases
- reduce the risk of falls (and broken bones)
- control weight.

Physical inactivity

Physical inactivity (not getting enough moderate or vigorous activity) is a modifiable risk factor¹ for some chronic diseases

¹ Modifiable risk factors can be changed such as diet and blood pressure. Non-modifiable risk factors cannot be changed such as age or gender.

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More detailed information about physical activity in Indigenous people can be found at:

http://www.healthinfonet.ecu.edu.au/physical_pl_review

and health conditions [2]. Being physically active can help in the prevention, management and treatment of some diseases or health conditions including [3-6]:

- cardiovascular disease (CVD)
- diabetes
- certain cancers
- some musculoskeletal conditions
- depression (and other social and emotional conditions)
- overweight and obesity.

Box 1: Levels of physical activity

Sedentary behaviour means doing little or no physical activity.

Moderate activities cause you to breathe heavier and your heart to beat faster, but you can still talk while you are doing them. Examples of moderate activity are: brisk walking, riding a bike, swimming, golf, gardening, social tennis, house cleaning.

Vigorous activities take more effort and make you “huff and puff”. Examples of vigorous activity are: jogging, most organised sports, fast cycling, and activities that include digging, lifting or carrying.

Physical inactivity is the second leading modifiable risk factor that contributes to the loss of healthy life (the disease burden) in Australia [7], with smoking as the leading cause. Physical inactivity is the third leading cause of disease burden for Indigenous people [8], after smoking and being overweight or obese. The effect of physical inactivity on the health of Indigenous² people is greater than it is for other Australians.

In Australia, the overall costs of physical inactivity to health and wellbeing are high [9]. Costs are measured in terms of medical expenses and time lost from work due to illness or injury or death. There are no specific estimates of the cost for Indigenous people, but it is likely to be high.

What is known about physical activity and Indigenous people – how history influences the present

Physical activity levels among Indigenous peoples in Australia have changed over time. For some Indigenous peoples, their once active lifestyles changed with European colonisation. Their lifestyle may once have included [10-13]:

- being a hunter-gatherer
- constantly moving across varying landscapes in different climates
- day-to-day physical activity involved in finding food and other necessities
- physically sustaining the spiritual connection to country
- physically maintaining familial and cultural practices.

The farming practices that were introduced by the white settlers prevented many Indigenous peoples from having access to the land [11]. Some Indigenous peoples were moved to missions or towns and had to rely on food hand-outs by the Europeans. Physical activity levels and food quality were greatly reduced by these changes to the lifestyles of these Indigenous people [13]. Physical activity was no longer a major part of everyday life.

Reduction in the physical activity levels of Indigenous people over time (particularly in the last half century or so), together with poor nutrition has contributed to an increase in the number of people who have chronic diseases [13] such as:

- heart disease
- diabetes
- high blood pressure
- other health conditions (such as being overweight or obese) .

For some Indigenous people, the concept of physical activity is not thought of in the same way as by other Australians [14, 15]. The activities that made up the traditional Indigenous lifestyle, such as hunting, gathering, and participation in other customs and traditions, were important and linked many different aspects of life [15] such as:

- health
- social structure
- education
- building and maintaining relationships
- building and maintaining wealth
- managing and preserving the environment.

These historical beliefs form part of the values of many Indigenous people today. Engaging in an individual physical activity to benefit only oneself, away from family or community, may be seen as inappropriate or selfish [15].

2 The term Indigenous is used in this review to refer generally to the two Indigenous populations of Australia –Aboriginal people and Torres Strait Islander people.

Physical activity was, and is, not seen by many Indigenous people as a separate, measurable activity in the same way as it is for non-Indigenous people [15]. Measuring levels and the types of physical activity by Indigenous people may be affected by:

- an understanding of what counts as physical activity
- whether the activity has been explained properly and is being performed correctly.

Self-reported measures of physical activity could inaccurately record the level of physical activity for Indigenous people, because the westernised definition and measurements of physical activity used may differ from Indigenous concepts.

Similarly, interventions targeting physical activity for Indigenous people may fail if they are based on westernised approaches to physical activity rather than taking account of Indigenous ideas of what constitutes physical activity.

What are the Australian physical activity guidelines?

The *National Physical Activity Guidelines for Australians* recommend that all Australians do some physical activity on most, preferably all, days of the week [16, 17]. Guidelines for physical activity in Australia were developed by the Australian Department of Health and Ageing, and outline the least amount of physical activity required in order to be healthy.

The benefits of doing regular physical activity and limiting sedentary behaviour include helping you to [18, 19]:

- relax
- feel good about yourself (increasing confidence and self-esteem)
- control your body weight or lose weight
- reduce the risk of getting heart disease, type 2 diabetes and some cancers
- manage and control your heart disease and type 2 diabetes
- recover from some cancers
- build strong muscles, bones and joints
- (for children) grow and develop into strong and healthy adults.

The amount of physical activity recommended is different for children and adults [17]:

- children (5-17 years of age) require 60 minutes per day of moderate to vigorous activity
- adults (18-64 years of age) require 30 minutes per day.

Physical activity can be done as a large block of activity (do one 30 minute session) or in small blocks of activity throughout the day (do three 10 minute sessions) [17].

The recommendations also include not spending more than one hour at a time of sedentary behaviour, with the exception of sleeping.

Box 2: Physical activity guidelines [17]

Very young children

Birth to 1 year

- From birth, babies should be as active as possible, particularly play on the floor.
- Once infants are moving around they should be encouraged to be as active as possible in a safe play area where they can be seen by a caregiver.
- Unless they are sleeping, infants should always be active and not spend more than one hour at a time without being active.

1 to 5 years

- Toddlers (1 to 3 years) and pre-schoolers (3 to 5 years) should be active every day for at least three hours, spread across the day.
- Active play is the best way for young children to be physically active.
- Children (less than 2 years) should not spend any time on electronic media (watching television or playing computer or video games).
- Children (2 to 5 years) should spend less than one hour a day on electronic media.
- Unless they are sleeping, toddlers and pre-schoolers should always be active and not spend more than one hour at a time without being active.

Children

- Children (aged 5 to 12 years) should have 60 minutes of a combination of moderate and vigorous physical activity every day:
 - moderate activities include walking, riding a bike or active play
 - vigorous activities include activities of a greater intensity, such as football, netball, running and swimming.
- A variety of activities are important.
- Electronic media should be limited.

Adolescents

- Adolescents (12 to 18 years) should have at least 60 minutes of a combination of moderate and vigorous physical activity every day:
 - moderate activities include walking
 - vigorous activities include running, swimming, training for sport.
- This amount can be achieved with short sessions of activity throughout the day.

Adults

- Adults should have at least 30 minutes of physical activity every day.
- This can be a combination of shorter activities, such as two periods of 15 minute activities, for example one in the morning and one in the afternoon.
- Adults should think of all body movement as a benefit and

be as active as they can every day: an example of this is walking instead of using the car, or taking the stairs instead of the lift.

Older Australians

- Older Australians should have at least 30 minutes of physical activity on most, if not all, days at a level of moderate intensity.
- It should be easily manageable and suitable for their capability, despite age, weight, health concerns or abilities.
- This can be achieved through being active every day in as many ways possible incorporating fitness, strength, balance and flexibility.
- Older people who are new to starting physical activity or those who have not been active in a while should start at a manageable level and gradually work towards the recommended amount.
- Older people who regularly participate in a physically active lifestyle are encouraged to carry on in a manner suited to their capabilities, provided they follow recommended safety procedures and guidelines.

People living with chronic conditions

- Physical activity is necessary to maintain a healthy lifestyle and prevent chronic conditions, but considerations also need to be given to the physical activity requirements for people living with chronic conditions.
- Living with a chronic disease can impact on a person's ability to participate in the recommended levels of physical activity. This is an area that needs further development in terms of addressing physical activity.

The national guidelines include recommendations for different age groups but do not acknowledge different cultural groups. It is recognised that for the guidelines to benefit everyone, there need to be different guidelines for different population groups [20, 21] including Indigenous people.

Overall, the physical activity recommendations are the same for Indigenous people as for the general population. If the suggested types of physical activity, and the way in which the information is shared [22] were to take cultural issues into account, the information may be more relevant for the Indigenous population. Examples of activities, such as playing golf or doing organised sport, may not be relevant to some Indigenous people, whereas a focus on family activities or more traditional activities may be more relevant.

What is known about physical activity levels among Indigenous people?

The two most recent detailed sources of information on the physical activity levels of Indigenous people are:

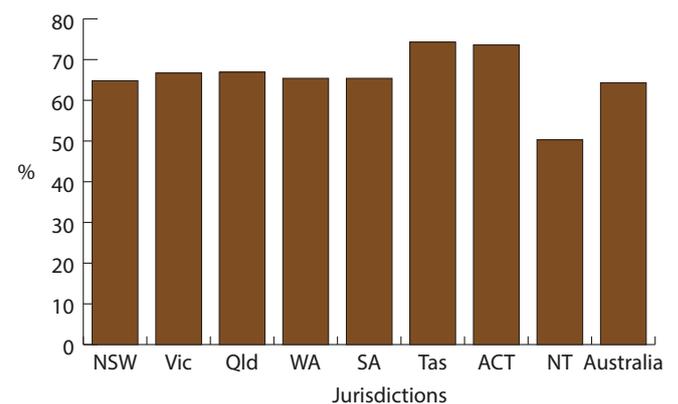
- the National Aboriginal and Torres Strait Islander social survey, 2008 (NATSISS) [3]

- the National Aboriginal and Torres Strait Islander health survey, Australia, 2004-05 (NATSIHS)[4].

Information collected in the 2008 NATSISS for Indigenous children (aged 4-14 years) indicated [Derived from 23]:

- almost two out of every three children (two-thirds or 64%) had taken part in some form of physical activity or sport in the previous 12 months
- almost three-quarters (74%) had been physically active for at least 60 minutes on every day in the previous week
- 3% had not had any activity
- males were slightly more likely to do some type of physical activity than females (65% of males and 63% of females) [Derived from 22][Derived from 23]
- people living in major cities were more likely to do some form of physical activity (68%), than those living in inner/outer regional areas (65%) or remote/very remote areas (58%)
- of all the states and territories, physical activity levels were the highest in Tas³ (74%), and lowest in the NT (50%) (see Figure 1).

Figure 1. Proportions (%) of Indigenous children aged 4-14 years who participated in physical activity, by state and territory, Australia, 2008



Source: Australian Bureau of Statistics, 2011 [Derived from 23]

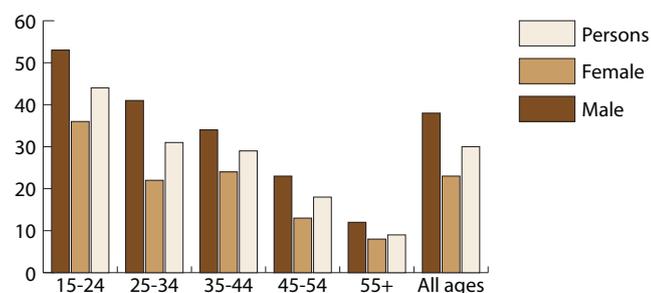
Information collected in the 2008 NATSISS for Indigenous adults (aged 15 years or older) indicated [Derived from 23]:

- three out of every ten people (30%) had taken part in some form of physical activity or sport in the previous 12 months
- males (almost four out of ten or 38%) did more physical activity than females (two out of ten or 23%)
- physical activity levels were lower in the older age groups for both males and females; more than four out of ten people (44%) aged 15-24 years old did any physical activity compared with only one out of every ten people (10%) aged 55 years or more (see Figure 2)
- levels of physical activity were slightly higher for people living in major cities (33%), than people living in inner/outer regional areas (29%), and remote and very remote areas (28%) (see Figure 3)

3 In this review the following acronyms are used for the states and territories: New South Wales (NSW); Victoria (Vic); Queensland (Qld); Western Australia (WA); South Australia (SA); Tasmania (Tas); Australian Capital Territory (ACT); and Northern Territory (NT).

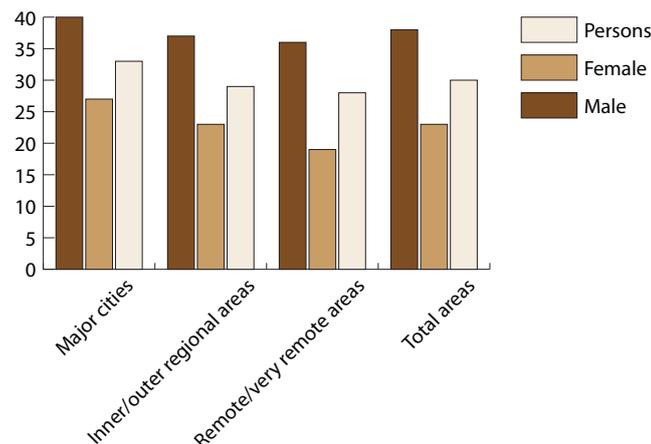
- levels of physical activity were highest in the ACT (almost half the Indigenous adults, or 46%) and lowest in SA (about a quarter of Indigenous adults, or 27%)
- differences between males and females in the amount of physical activity they did were greatest in the NT, where males participated twice as much as females (42% compared with 20%) (see Figure 4)
- levels of physical activity among each of the Indigenous groups⁴ were similar with about one in every three people active: Aboriginal people (30%), Torres Strait Islanders (33%), and Aboriginal and Torres Strait Islander people (32%) (Figure 5)
- levels of physical activity varied between the sexes in each group. The greatest difference was among those who identified as Torres Strait Islanders: they had the highest levels of participation for males (almost 5 out of ten males or 46%), and the lowest for females (less than 2 out of ten females or 18%) (Figure 5).

Figure 2. Proportions (%) of Indigenous people aged 15 years and over who participated in physical activity, by sex and age group, Australia, 2008



Source: Derived from Australian Bureau of Statistics, 2011 [Derived from 23]

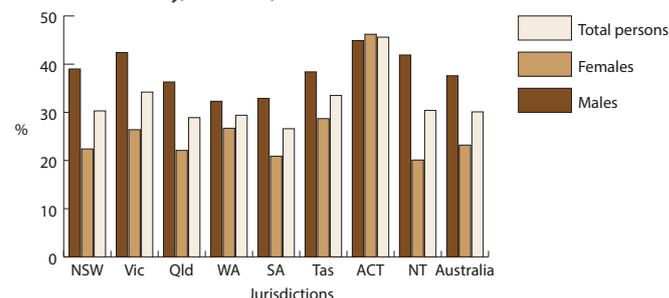
Figure 3. Proportions (%) of Indigenous people aged 15 years and over who participated in physical activity, by sex and geographical area, Australia, 2008



Source: Derived from Australian Bureau of Statistics, 2011 [Derived from 23]

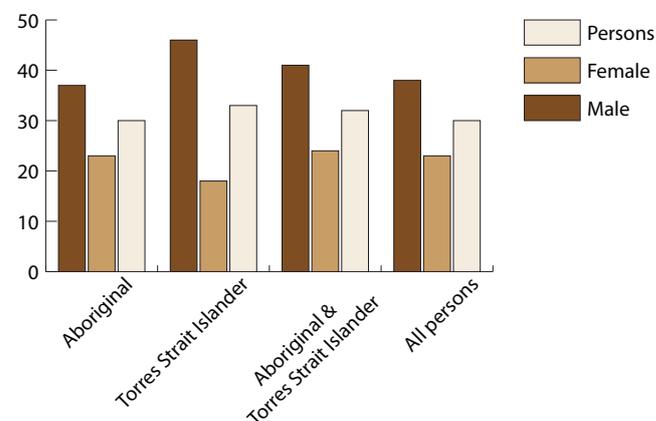
⁴ Of all Indigenous people 15 years and older that took part in the survey, around 90% identified their status as Aboriginal, around 5% identified as Torres Strait Islander, and around 5% identified as both Aboriginal and Torres Strait Islander.

Figure 4. Proportions (%) of Indigenous people aged 15 years and over who participated in physical activity, by sex and state and territory, Australia, 2008



Source: Derived from Australian bureau of statistics, 2011 [Derived from 23]

Figure 5. Proportions (%) of Indigenous people aged 15 years and over who participated in physical activity, by sex and Indigenous status, Australia, 2008



Source: Derived from Australian Bureau of Statistics, 2011 [Derived from 23]

In the 2004-2005 NATSIHS survey the following levels of physical activity were used:

- sedentary (no physical activity or very low levels)
- low
- moderate
- high

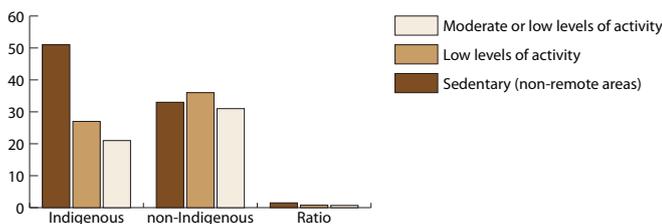
Survey results for Indigenous people (aged 15 years and over) indicated [24]:

- three-quarters (75%) of those living in non-remote areas were sedentary or had done low levels of physical activity in the last year [4]
- Indigenous people living in non-remote areas were 1.5 times more likely to be sedentary than non-Indigenous people living in non-remote areas (Figure 6) (these statistics have been calculated after adjusting for the different age structures of the Indigenous and non-Indigenous populations)
- females reported being more sedentary than males (51% or half the females and 42% or 2 out of every 5 males)
- people in the older age-groups reported being more sedentary than younger people; around 8 out of 10 people (85%) in both the 45-54 years and 55 years-and-over age groups
- the highest levels of moderate to high physical activity levels were reported for age-groups 15-24 years (32%) and 25-34

years (27%)

- Indigenous people did more sedentary or low levels of activity than non-Indigenous people across all states and territories
- the highest levels of sedentary or low activity for Indigenous people were in NSW (almost eight out of ten people or 79%) and Tas (seven out of eight people or 70%) (Figure 7)
- the portion of Indigenous people aged 15 years and older who were sedentary increased from two in five (37%) in 2001 to almost half (47%) in 2004-2005.

Figure 6. Proportions (%) of Indigenous people aged 15 years and over who participated in some form of physical activity, Australia, 2004-2005



Source: Australian Bureau of Statistics, 2006 [4]

What factors contribute to the amount of physical activity that people do?

Some people find it very difficult to take part in physical activity because of certain barriers [14, 15, 25]. Barriers for Indigenous people can be:

- cultural (such as different understandings of the meaning of health, inclusion of family or community, and ideas of time and/or structure)
- geographical (such as physical location, environment, landscape and climate)
- historical (such as attitudes of the older generations that are passed down to the younger generation)
- socioeconomic (including time, accessibility, transport and costs).

Barriers can also include [14, 15, 25]:

- having no fixed place to live
- difficulties with social structures, such as mixing between skin groups and gender
- negative thoughts about local practitioners or health workers - there may be a fear of doctors and other authorities because of what happened to the stolen generation
- privacy issues, particularly the beliefs that nothing can be secret in communities or if family members are working at local health services
- literacy levels, particularly if English is a second language
- less availability and frequency of services and poorer access to programs in remote areas
- a lack of awareness about existing services

- the cost of services
- a lack of understanding that not being physically active is a risk factor for chronic disease.

These barriers can reduce the success of interventions aimed at increasing physical activity among some Indigenous people. These barriers contribute to the low levels of physical activity and high rates of chronic disease among Indigenous people.

Cultural issues need to be respected in the development of policies and strategies, and when creating programs to increase the participation of Indigenous people in physical activity to help reduce the levels of chronic diseases [26]. Physical activity programs developed for the general population may not always be appropriate. Consultation with Indigenous communities when planning and developing interventions is more likely to be relevant and therefore succeed.

What is known about physical activity and chronic disease?

Chronic diseases such as heart disease, diabetes and kidney disease are triggered by many different factors [2] called risk factors. Risk factors can be:

- genetic – such as having a family history of a disease and being of Aboriginal or Torres Strait Islander descent
- biomedical - such as having high blood pressure, high cholesterol and/or obesity
- lifestyle - such as physical inactivity, tobacco smoking, alcohol consumption, and poor nutrition.

Some chronic diseases may also be caused by, or be a complication of, one or more other diseases. For example having diabetes increases the risk for getting heart disease [27]. Low levels of physical activity are linked with various chronic diseases [2] including:

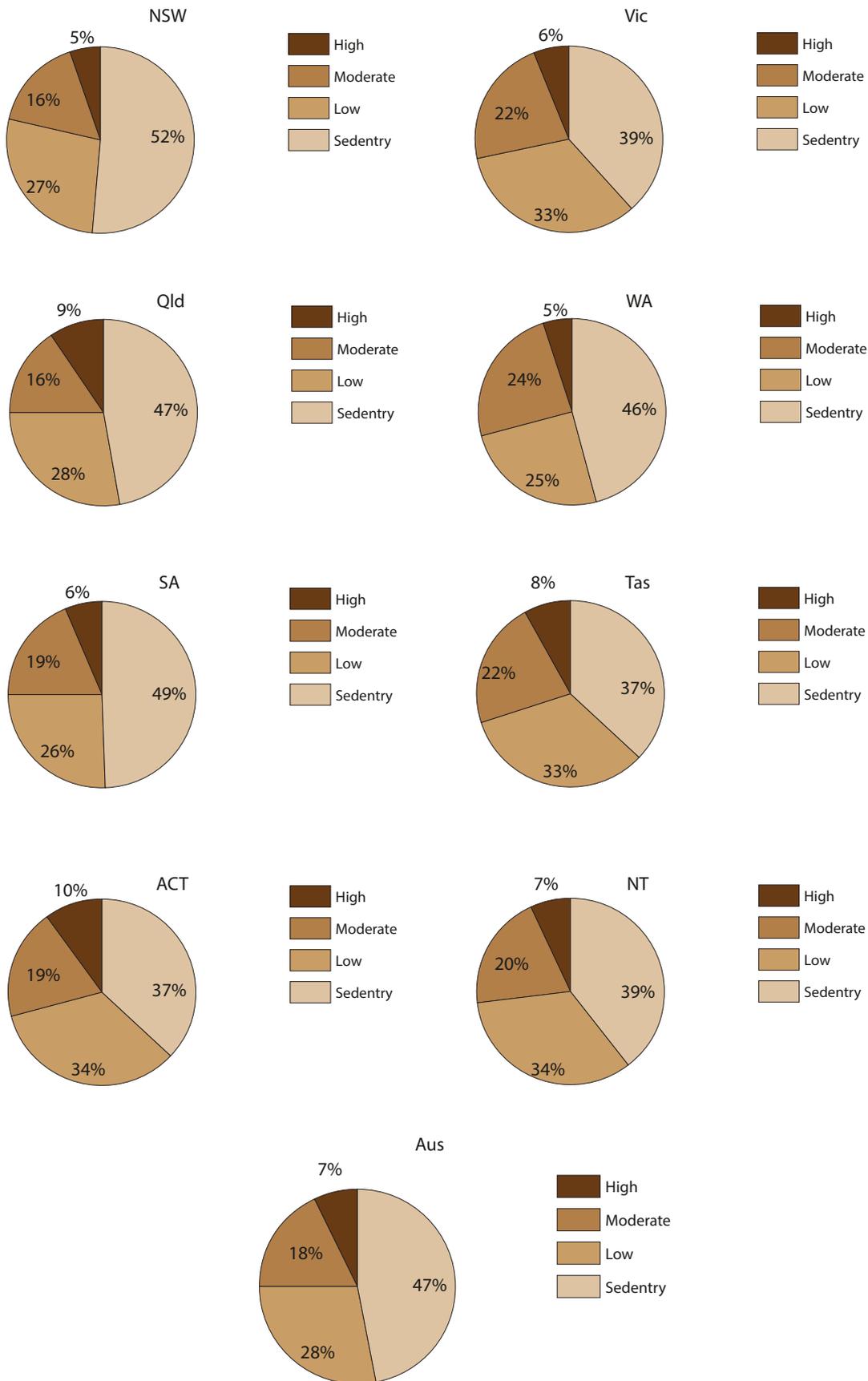
- cardiovascular disease (CVD)
- type 2 diabetes
- some cancers.

Cardiovascular disease (CVD)

The main diseases of the cardiovascular system that are most affected by physical activity [7, 27, 28] are:

- coronary (ischaemic) heart disease (CHD)
- heart failure
- stroke.

Figure 7. Physical activity levels of Indigenous people aged 15 years and over, by state and territory, 2004-2005



Source: Australian Institute of Health and Welfare, 2011 [24]

Box 3: Cardiovascular disease (CVD) [27]

Cardiovascular disease (CVD) is the general name given to all diseases of the cardiovascular system (which includes the heart, blood and blood vessels). The main types of CVD in Australia are:

Coronary heart disease (CHD). This occurs when the heart does not receive enough blood. It is usually caused by atherosclerosis (narrowing of the blood vessels due to a build-up of fatty substances in the blood vessels) in the arteries leading to the heart, which eventually results in a complete blockage. The blockage can cause angina (pains, difficulty breathing) and can lead to a heart attack.

Heart failure (cardiomyopathy). This is when the heart is not strong enough to properly pump blood around the body. The heart muscle has become weak, usually as a result of a heart attack, but sometimes due to diabetes, high blood pressure or a damaged heart valve. Weakened heart muscle cannot be repaired.

Stroke. The most common type of stroke is an *ischemic stroke*. This occurs when a blood clot blocks an artery leading to the brain, or in the brain itself. The result is a lack of blood and oxygen to the brain. Blood clots are most likely to block an artery that has atherosclerosis. *Haemorrhagic stroke* occurs when a blood vessel in the brain breaks and blood leaks into the brain.

People who are physically active are more likely to have a healthy heart and fewer or no biomedical risk factors (high blood pressure and high levels of blood cholesterol) than people who are not physically active [22]. People with CVD who do some physical activity show improvements in both their physical and social and emotional wellbeing [29]. Australians who are not physically active are twice as likely to die from CHD as those who do regular physical activity [27].

Results from the 2004-2005 NATSIHS [4, 28] showed that of all Indigenous people living in non-remote areas who reported having CVD:

- less than half (42%) were physically active
- males and females had similar levels of inactivity (after adjusting for age)
- activity levels decreased as they got older - almost three-quarters of people aged 65 years and over were physically inactive
- Indigenous people were 1.6 times more likely than non-Indigenous people to be physically inactive
- Indigenous people reported greater levels of physical inactivity than non-Indigenous people across all age groups; this was particularly high for the 45-64 years age groups, with levels almost twice as high.

Physical inactivity accounts for 30% of the disease burden of CVD in the Indigenous population [30] and 24% of the overall burden of CVD in Australia [27]. The other main contributors to CVD in the Indigenous population [30, 31] are:

- tobacco smoking (33%)
- high body mass (overweight or obesity) (31%)
- high blood cholesterol (31%).

The benefits of regular physical activity are not only linked to a reduced risk of developing CVD, but in reducing some of the other risk factors for CVD [4, 18]:

- type 2 diabetes
- increased bodyweight
- high levels of total blood cholesterol
- high levels of bad blood fats
- high blood pressure (hypertension) .

Positive changes to these factors can lead to overall improvements to cardiovascular health.

Type 2 diabetes

Being physically inactive accounts for 31% of the burden of type 2 diabetes among Indigenous people. Overweight and obesity accounts for 63% of the burden of type 2 diabetes [31]. Physical activity can assist in the prevention and management of type 2 diabetes [14, 16-19] by:

- reducing the likelihood of developing diabetes
- reversing high blood sugar levels
- helping in the management of diabetes
- improving the physical and psychological condition of people with type 2 diabetes [22, 29].

Box 4: Diabetes [32]

There are three main types of diabetes:

- **type 1** (also known as juvenile diabetes or insulin-dependent diabetes)
- **type 2** (also known as non-insulin-dependent diabetes)
- **gestational** (also known as diabetes in pregnancy).

Type 2 diabetes is the most common type of diabetes and usually affects people over the age of 45 years (35 years in Indigenous people). It occurs when there is too much sugar in the blood. The body is not able to make enough insulin, or the cells in the body become resistant to insulin. Insulin is necessary to control sugar levels in the bloodstream. If diabetes is not controlled it can lead to heart attack, stroke, kidney failure and eye problems.

Type 2 diabetes can be prevented or managed through weight control, being physically active and eating healthy foods.

Cancer

Being physically inactive accounts for 5% of the burden of cancer among Indigenous people, following tobacco (35%) and alcohol (6%) [31]. Physical activity can help [18, 19, 29, 33]:

- protect against cancer as well as contributing to weight control (being overweight is a risk factor for some cancers)
- protect against colon cancer in men and breast cancer in women
- improve the physical and psychological condition of people with cancer
- reduce tiredness (fatigue) and stress
- improve fitness and muscle function.

How is physical activity involved in the management and treatment of chronic disease?

Physical activity is important not only in the prevention of chronic disease [33], it can also benefit people who already have a chronic disease [29].

Cardiovascular disease

For people with CVD, it is suggested that the greatest benefit from physical activity is among those who were the least active, and benefits can be seen even in low levels of participation [34]. Physical activity was also associated with reduced repeated cardiac events (reduced by around 30%), and reduced hospital readmissions (reduced by around 25%) [35]. For those people with existing CVD, physical activity can lead to improvements in [29, 34-37]:

- oxygen consumption (which is a measure of health and fitness in people with CVD)
- physical functioning (such as improved walking ability for stroke survivors)
- symptoms of CVD (such as angina symptoms and shortness of breath)
- quality of life
- biomedical risk factors (such as blood pressure, triglyceride levels, and high-density lipoprotein cholesterol concentrations)
- lower risk of death for those who survive heart attacks.

Type 2 diabetes

Effective treatment and management of type 2 diabetes should include regular physical activity [38] as it can help to:

- improve control of blood sugar levels
- reduce the need for diabetes medication
- control blood pressure
- improve the effectiveness of the body's own insulin
- improve blood lipid levels
- improve body mass.

Overall, this can lead to a reduced risk of CVD which is particularly important for people with diabetes, as their risk of CVD events is twice as high as those who do not have type 2 diabetes [38]. Physical activity also reduces the risk of death from a CVD event for those people with diabetes [39]. The development of long term complications associated with diabetes such as neuropathy (nerve damage), retinopathy (damage to the blood vessels in the eye causing blindness), and nephropathy (kidney disease or damage) can be prevented or delayed by the introduction of regular physical activity. Physical activity can also lead to improved quality of life for those with diabetes, with improvements to social and emotional wellbeing and a reduction in the risk of developing other chronic diseases [38].

Cancer

For people with cancer, physical activity can reduce the risk of death [40] and also lead to improvements in [29]:

- social and emotional wellbeing
- physical functioning
- fatigue
- body mass
- fitness.

What are the other health benefits of physical activity?

Apart from reducing the risk of developing chronic disease, being physically active can also lead to improvements to the musculoskeletal system, changes to areas of the brain that can have an effect on social and emotional wellbeing [22, 41], and weight control.

Musculoskeletal system

Particular benefits of physical activity to the musculoskeletal system include [19, 22, 41]:

- a reduction in injury and falls
- protection against the development of conditions relating to bone and joint health (such as osteoporosis and arthritis)
- aid in the management of osteoporosis and arthritis
- increases in the mobility and flexibility of joints
- maintenance of, and improvements in, muscle mass, strength, power and the functioning of the nerves
- improvements to posture and balance
- reductions in pain, fatigue, stress, tiredness and muscle tension
- increased muscle strength
- increased bone mineral content and bone mass density (when doing those activities that involve resistance activities such as weights)

- reductions in the risk of a hip or vertebral (backbone) fracture
- reductions in the risk of falls in older adults with poor mobility (by around 30%).

Social and emotional wellbeing

Physical activity can improve overall social and emotional wellbeing [19, 22, 41], and in particular lead to:

- reduced feelings of depression
- increased feelings of wellbeing
- lowered levels of stress and anxiety
- more social contact leading to less loneliness
- increased social support.

Weight control

Overweight and obesity are usually caused by energy imbalances, that is, more energy being taken in to the body (in kilojoules in food) than is being used up (in daily activity) [42]. Physical activity and nutrition both play a key role in maintaining a healthy weight. Healthy eating in combination with physical activity assists in weight control and serves as a protective factor against chronic disease.

Other benefits

Participating in regular physical activity also helps to [18, 19]:

- reduce the risk of dementia
- prevent and/or reduce the risk of injury
- prevent and manage osteoporosis (thinning of the bones)
- prevent and manage arthritis.

Summary

Regular physical activity can assist in the prevention and management of chronic disease and other health problems.

There are many barriers that prevent Indigenous people from taking part in regular physical activity: historical; cultural; geographical; and socio-economic factors all contribute. As a result, physical inactivity is the third leading cause of disease burden for Indigenous people.

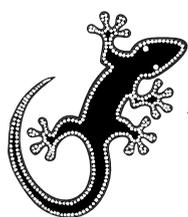
Low levels of physical activity are linked with various chronic diseases. Chronic disease accounts for almost three-quarters of the observed difference in the burden of disease between the Indigenous and non-Indigenous populations. The main chronic diseases that are linked with physical inactivity are cardiovascular disease, type 2 diabetes and some cancers.

Being physically active can have other health benefits including to the musculoskeletal system, and can help with social and emotional wellbeing and weight control.

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Australian Indigenous HealthInfoNet

The Australian Indigenous HealthInfoNet is an innovative Internet resource that contributes to 'closing the gap' in health between Indigenous and other Australians by informing practice and policy in Indigenous health.

Two concepts underpin the HealthInfoNet's work. The first is evidence-informed decision-making, whereby practitioners and policy-makers have access to the best available research and other information. This concept is linked with that of translational research (TR), which involves making research and other information available in a form that has immediate, practical utility. Implementation of these two concepts involves synthesis, exchange and ethical application of knowledge through ongoing interaction with key stakeholders.

The HealthInfoNet's work in TR at a population-health level, in which it is at the forefront internationally, addresses the knowledge needs of a wide range of potential users, including policy-makers, health service providers, program managers, clinicians, Indigenous health workers, and other health professionals. The HealthInfoNet also provides easy-to-read and summarised material for students and the general community.

The HealthInfoNet encourages and supports information-sharing among practitioners, policy-makers and others working to improve Indigenous health – its free on line yarning places enable people across the country to share information, knowledge and experience. The HealthInfoNet is funded mainly by the Australian Department of Health and Ageing. Its award-winning web resource (www.healthinfonet.ecu.edu.au) is free and available to everyone.

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