

# Comparisons of leisure-time physical activity participation by adults with and without a disability: results of an Australian cross-sectional national survey

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## ABSTRACT

**Objectives** The objective of this study was to describe and compare the amount and type of leisure-time physical activity, and motivations and barriers to participation among adults with and without a disability.

**Methods** Analysis of deidentified data from an Australian cross-sectional national telephone-based survey (October 2015 to June 2018) of sport and physical recreation participation over the previous 12 months, and barriers and motivations to participation. Descriptive statistics (incorporating weighted proportions),  $\chi^2$  tests and regression analyses were conducted to describe aspects of participation and compare those with and without self-reported disability.

**Results** Of the 54 343 adults surveyed, 15% reported a disability. Adults with a disability were half as likely to meet physical activity guidelines through sport and/or physical recreation than adults without a disability (OR 0.53, 95% CI 0.51 to 0.57). A greater proportion of adults with a disability participated in physical recreation only (40% vs 31%;  $\chi^2=187$ ;  $p<0.001$ ), whereas a greater proportion of adults without a disability participated in sport only (20% vs 12%;  $\chi^2=188$ ;  $p<0.001$ ). Adults with a disability were more motivated than adults without a disability to try a new activity for physical health or fitness benefits (55% vs 46%;  $\chi^2=36$ ;  $p<0.001$ ). The most reported barrier to participation for adults with a disability not currently participating in sport and/or physical recreation was poor health or injury (62%), whereas for adults without a disability it was lack of time/too many other commitments (43%).

**Conclusion** Adults with a disability are less physically active and report different physical activity profiles and barriers to being active than adults without a disability. Urgent action is required to address this discrepancy.

## BACKGROUND

Over a billion people (or 15% of the population globally) are estimated to live with some form of disability, and this rate is expected to increase due to an ageing population and an increase in chronic health conditions.<sup>1</sup>

## Summary box

### What are the new findings?

- Fifty-four per cent of adults with a disability self-reported not meeting physical activity guidelines through sport and/or physical recreation ( $\geq 150$  min per week) compared with 38% of adults without a disability.
- Adults with a disability had lower participation rates in sport and/or physical recreation activities than adults without a disability across all age brackets except 18–19 years.
- The most reported barrier to participation in sport and/or physical recreation by adults with a disability not currently participating in these activities was poor health or injury (62%), whereas for adults without a disability it was lack of time/too many other commitments (43%).

### How might it impact on clinical practice in the near future?

- Inclusive and disability-specific sport and physical recreation opportunities are needed for adults with a disability across the lifespan, with an important role for health professionals to prescribe and promote safe and appropriate options during healthcare interactions.

Disability is defined within the International Classification of Functioning, Disability and Health as an umbrella term for impairments (eg, muscle weakness), activity limitations (eg, difficulty walking) and participation restrictions due to a wide range of health conditions.<sup>2</sup> The WHO's global disability action plan 2014–2021 is aimed at improving the health, functioning and well-being of people with a disability, including the promotion of physical activity.<sup>3</sup> Recently, the WHO released the 2020 updated physical activity guidelines and for the first time included a specific guideline for adults and children

with a disability.<sup>4</sup> This guideline recommends, if possible, the same level of physical activity as for people without a disability and is based on a comprehensive evidence synthesis demonstrating benefits of physical activity for people with a disability on physical fitness and functioning, cognition, depression and improved quality of life.

Physical inactivity is a global health problem<sup>5</sup> that has changed little over time.<sup>6</sup> In most countries, national surveys are conducted each year to estimate physical activity at a population level, monitor change over time and inform policies to address physical inactivity. Many of these surveys include questions to identify people with a disability, such as from England, where their annual Active Lives Survey report includes a comparison of activity levels between adults with and without a disability (47% of adults with disability or long-term health conditions were active vs 67% of adults without disability were active).<sup>7</sup> However, few papers have been published using these large data sets to evaluate the physical activity participation of people with a disability. One exception is the USA,<sup>8–11</sup> where studies show people with a disability are less likely to meet physical activity guidelines than people without a disability, are twice as likely to be physically inactive and are more likely to have chronic health conditions if they are inactive. However, these data do not provide sufficient detail about the type of physical activity participated in, what are the barriers and motivations for participation, and how these change across the lifespan. Understanding patterns and potential influencers of physical activity among people with a disability may help to better target appropriate interventions and influence inclusive policy agendas<sup>10</sup> to create health and social benefits for a neglected population in public health policy.

*AusPlay* is a national survey conducted since 2015 that aims to obtain a population-level understanding of sport and physical recreation participation of people living in Australia. The survey was developed by *Sport Australia* in collaboration with the sport sector. Within this survey, respondents are asked whether they have a disability (defined within the survey as a disability or physical condition that restricts their life in some way and has lasted or is likely to last for at least 6 months). This question enabled us to describe and compare, from a nationally representative sample, the dose and type of leisure-time physical activity, and motivations and barriers to participation of adults with and without a disability.

## AIMS

1. To describe the amount and type of leisure-time physical activity by Australian adults with and without a disability.
2. To compare leisure-time physical activity participation by adults with and without a disability across the lifespan and between sexes.

3. To compare motivations and barriers to leisure-time physical activity participation by adults with and without a disability.

## METHODS

### Study design

Analysis of deidentified data from the *AusPlay* Australian cross-sectional national survey collected between October 2015 and June 2018. We were granted access to the data set after application to *Sport Australia*, the custodian of the *AusPlay* survey data. The University of Sydney Human Research Ethics committee provided an ethics exemption based on the study being classified as negligible risk.

### Participants

The *AusPlay* survey interviews approximately 20 000 Australians aged  $\geq 15$  years each year to gain a representative sample of sport and physical recreation participation. For this study, we included adults ( $\geq 18$  years) sampled between October 2015 and June 2018 who responded to the question regarding whether they have a disability or not.

### Survey conduct

The *AusPlay* survey is conducted using computer-assisted telephone interviewing. The survey uses an overlapping dual-frame design with two random sample sources: land-line and mobile phone numbers. The survey is weighted, to account for probabilities of selection, and post-stratified to match the sample to the population, which ensures a representative sample. The survey is estimated to take 10–12 min and includes modules on demographics, participation and non-participation in sport or physical recreation. Further information about the survey methods can be accessed at <https://www.clearinghouseforsport.gov.au/research/smi/ausplay/method>.

### Measures

#### Disability status

This was determined from the question asking whether the respondent has a disability or physical condition that restricts his or her life in some way and has lasted or is likely to last for at least 6 months.

#### Sport and physical recreation

Respondents are asked to name what sport or physical recreation they have participated in during the previous 12 months, starting with the one they have spent most time doing. Respondents can name up to 10 different activities, and for each they are asked to recall how many times they participated in it over the previous 12 months and the duration of the most recent occasion. Each activity is categorised as either a sport or a physical recreation. Sport activities are typically activities related to National Sporting Organisations (although they do not have to be played through these organisations), and examples include team sports (eg, basketball, wheelchair rugby), athletics (including jogging), swimming and golf.

Physical recreation activities are not typically related to a National Sporting Organisation, and examples include gym/fitness activities, walking (recreation) and non-sport dance. Variables were created to determine the average weekly dose of sport and physical recreation to determine whether participants met Australian physical activity guidelines through sport and/or physical recreation (defined as  $\geq 150$  min per week).

### Demographics

Demographic variables included age, sex, education, employment, indigenous status, language spoken at home, socioeconomic status (SES) and remoteness. SES was categorised using residential postcode and the Socio-Economic Index for Area (SEIFA), specifically the Index of Relative Socio-Economic Disadvantage,<sup>12</sup> which ranks Australian regions according to relative socioeconomic disadvantage. Ranked SEIFA percentiles were categorised into quartiles ranging from 1 (most disadvantaged area) to 4 (least disadvantaged area). Remoteness was categorised using residential postcode and the Accessibility and Remoteness Index of Australia, which groups areas, based on relative access to services, into major city, inner regional, outer regional or remote.<sup>13</sup>

### Statistical analysis

Descriptive statistics, including unweighted frequencies and weighted proportions, were used to describe the sample of adults with and without a disability.  $\chi^2$  tests and logistic regression analyses were used to compare binary variables (eg, participation rates in sport only) between adults with and without a disability. Linear regression analyses were used to compare continuous variables (eg, duration of sessions) between adults with and without a disability. The odds of participants with and without a disability reporting sport and/or physical recreation participation in the previous 12 months, meeting physical activity guidelines through sport and/or physical recreation, and participating in sport or physical recreation that required payment in the previous 12 months were determined using logistic regression. The first model (model 1) did not adjust for covariates, and the second model (model 2) adjusted for age, sex, SES, remoteness, indigenous status and English language not spoken at home. All analyses were conducted in Stata V.14.

### Patient and public involvement

This study was initiated by author JC in her role as Chief Executive Officer of Disability Sports Australia, the peak national body representing athletes with a physical disability.

## RESULTS

Between October 2015 and June 2018, 56 041 Australians were surveyed, of whom 54 564 were adults. There were 221 adults who reported not knowing or did not answer whether they had a disability; these respondents were excluded. Of the remaining 54 343 adults, 44 108 (85%)

reported they did not have a disability and 10 235 (15%) reported having a disability for longer than 6 months (table 1; online supplemental table 1). Notably, the percentage of adults reporting a disability was higher in older age brackets and lower among those with university-level education and those employed in full-time work.

### Type and extent of leisure-time physical activity participation

Of the top 10 activities respondents reported doing, 8 were the same for adults with and without a disability (table 2). Walking for recreation and attending a fitness centre/gym were the top two activities for both groups. A greater percentage of adults with a disability participated in physical recreation only (40% vs 31%;  $\chi^2=187.0$ ;  $p<0.001$ ), and a greater percentage of adults without a disability participated in sport only (20% vs 12%;  $\chi^2=188.0$ ;  $p<0.001$ ). Overall participation in leisure-time physical activity was significantly lower for adults with a disability (table 3). The odds of adults with a disability participating in sport or physical recreation in the previous year or participating in sport or physical recreation when there was a cost were significantly lower, even after adjusting for key demographic factors (table 3; online supplemental table 2).

There were differences in total volume, duration of sessions and number of different leisure-time physical activities reported by adults with and without a disability. Adults with a disability were about half as likely to meet physical activity guidelines through sport and/or physical recreation as adults without a disability (table 3; online supplemental table 2). Adults with a disability reported shorter average session times than adults without a disability (mean (95% CI) duration in minutes: adults with a disability, 88 (76 to 100); adults without a disability, 122 (114 to 131); mean between-group difference,  $-34.5$  min; 95% CI,  $-49.3$  to  $-19.7$ ;  $p<0.001$ ), but similar frequency for the activity they spent most time doing (mean (95% CI) sessions per week: adults with a disability, 2.5 (2.4 to 2.6); adults without a disability, 2.5 (2.5 to 2.6); mean between-group difference,  $-0.1$ ; 95% CI,  $-0.1$  to  $0.02$ ;  $p=0.18$ ). The number of different leisure-time physical activities participated in over the previous 12 months was lower for adults with a disability. Forty per cent of adults with a disability reported participating in two or more different activities compared with 61% of adults without a disability ( $\chi^2=837.5$ ;  $p<0.001$ ). Only 17% of adults with a disability reported participating in three or more activities compared with 30% of adults without a disability ( $\chi^2=431.8$ ;  $p<0.001$ ).

### Leisure-time physical activity participation across sex and age

A larger percentage of men participated in sport only (as opposed to physical recreation only or sport and physical recreation combined) regardless of the disability status (figure 1); however, there was a substantially greater percentage of men without a disability participating in sport only compared with men with a disability (30% vs

**Table 1** Characteristics of participants

Characteristic	Adults with disability (n=10 235)	Adults without disability (n=44 108)
Age (years), number per age bracket (%)		
18–19	70 (1)	1350 (4)
20–29	474 (9)	5763 (20)
30–39	475 (9)	6049 (19)
40–49	950 (12)	7309 (18)
50–59	1860 (20)	7947 (16)
60–69	2763 (24)	8100 (13)
70–79	2369 (18)	5601 (8)
80+	1274 (8)	1989 (2)
Sex, number female (%)	5691 (52)	22 813 (51)
Education status, n (%)*		
University degree or higher	2357 (24)	16 850 (40)
Diploma or certificate	2844 (30)	11 533 (28)
Completed schooling (year 12)	1816 (18)	8196 (19)
Left before final year (did not complete year 12)	2984 (26)	6789 (12)
Still in school	10 (0.1)	99 (0.4)
Never went to school	42 (0.4)	56 (0.1)
Employment status, n (%)*		
Full-time	1638 (20)	18 649 (47)
Part-time	795 (9)	5812 (14)
Casual	460 (6)	3019 (8)
Unemployed	523 (7)	1297 (4)
Retired/pension	6089 (48)	11 370 (16)
Full-time student	179 (3)	1685 (5)
Home duties	284 (4)	1316 (4)
Socioeconomic status, n (%)*		
Quartile 1 (living in the most disadvantaged area)	2405 (23)	6725 (15)
Quartile 2	2440 (25)	9277 (22)
Quartile 3	2273 (23)	10 537 (25)
Quartile 4 (living in the least disadvantaged area)	2775 (25)	16 177 (35)
Remoteness, n (%)*		
Major cities	5880 (61)	28 641 (69)
Inner regional	2564 (26)	8777 (19)
Outer regional and remote	1462 (11)	5377 (10)
Indigenous, n (%)	310 (4)	768 (2)
English language not spoken at home, n (%)	984 (11)	7072 (19)

n are unweighted, % are weighted.

\*Missing data due to survey respondents responding other, don't know or refused to answer.

18%; [figure 1](#)). A greater percentage of women participated in recreation only regardless of the disability, and the percentage of men and women with a disability who were not participating in any sport or physical recreation was similar ([figure 1](#)). Across adulthood, adults with a disability had lower participation rates than adults without a disability for all age brackets except those aged 18–19

years. For adults aged >45 years with a disability, more than 20% reported no participation in sport or physical recreation over the past 12 months (online supplemental [figure 1](#)). The percentage of adults meeting physical activity guidelines through sport and/or physical recreation was always less for adults with a disability except those aged 18–19 years ([figure 2](#)). Participation in sport

**Table 2** The top 10 leisure-time physical activities adults with and without a disability reported spending the most time participating in over the past 12 months

Activities*	n (%) of adults with disability (n=7762)	Activities*	n (%) of adults without disability (n=39 922)
Walking (recreation)	3606 (43)	Walking (recreation)	12 739 (27)
Fitness/gym	1592 (20)	Fitness/gym	8102 (22)
Swimming	457 (6)	Athletics	2484 (7)
Cycling	272 (4)	Cycling	1946 (5)
Golf	246 (3)	Swimming	1706 (4)
Athletics	138 (3)	Football (soccer)	949 (3)
Bowls	161 (2)	Golf	1432 (3)
Bushwalking	115 (2)	Tennis	859 (2)
Yoga	90 (1)	Bushwalking	734 (2)
Fishing (recreation)	82 (1)	Yoga	729 (2)

n are unweighted, % are weighted.

\*The full activity list outlining how different activities are classified for the *AusPlay* survey can be downloaded from the following website: <https://www.clearinghouseforsport.gov.au/research/ausplay/method>.

only reduced with increasing age and was always lower for adults with a disability. Participation in physical recreation only increased with increasing age and was always higher among adults with a disability up to 70 years of age (online supplemental figure 1).

### Motivations and barriers to leisure-time physical activity participation

Approximately a third of all adults with and without a disability who were currently participating in sport or physical recreation indicated they had intentions to try a new activity in the next 12 months. Key motivations reported for wanting to try a new activity (physical health or fitness, fun or enjoyment, other, social) were the same across groups. However, a greater percentage of adults with a disability were motivated by physical health or fitness (55% vs 46%;  $\chi^2=35.6$ ;  $p<0.001$ ), and a greater percentage of adults without a disability were motivated by social reasons (18% vs 13%;  $\chi^2=23.2$ ;  $p<0.001$ ) (table 4). There were differences in reported barriers to participation between adults with and without a disability who had not participated in any sport or physical recreation

in the previous 12 months (table 4). The most common reported barrier by inactive adults with a disability was poor health or injury (62%), whereas for inactive adults without a disability it was lack of time/too many other commitments (43%).

### DISCUSSION

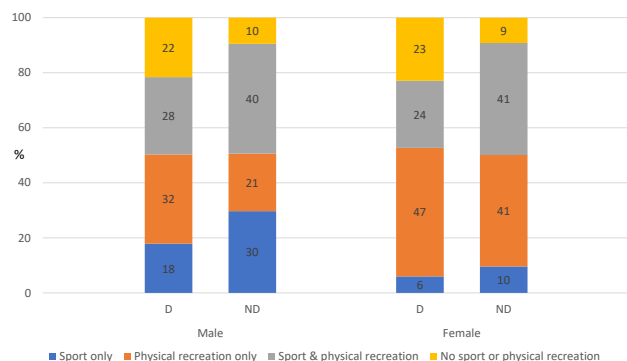
This population-level study confirms that Australian adults who self-report living with a disability for  $\geq 6$  months are less physically active and less likely to meet physical activity guidelines through sport and/or physical recreation than adults without a disability. Our findings showed similar frequency of physical activities per week for adults with and without a disability, but differences between the groups for session duration and number of different activities participated in. Adults with a disability participated in physical recreation more than sporting activities, and a substantially lower percentage of men and women with a disability participated in sport than those without a disability. Motivations for wanting to take up a new sport or physical recreation activity were similar

**Table 3** Statistical comparison of participation in sport and physical recreation for adults with and without a disability

	Adults with disability	Adults without disability	Model 1 (no adjustments)			Model 2* (adjusted model)		
			OR	95% CI lower limit	95% CI upper limit	OR	95% CI lower limit	95% CI upper limit
Participating in sport or physical recreation at least once in the past 12 months	78%	91%	0.36	0.34	0.39	0.39	0.36	0.42
Meeting physical activity guidelines through sport and/or physical recreation†	46%	62%	0.53	0.51	0.57	0.52	0.49	0.55
Participate in paid sport or physical recreation in the past 12 months	41%	58%	0.51	0.47	0.54	0.61	0.57	0.65

\*Model adjusted for age, sex, socioeconomic status, remoteness, indigenous and English language not spoken at home. See online supplemental table 2 for full regression model.

† $\geq 150$  min of sport or physical recreation participation per week.

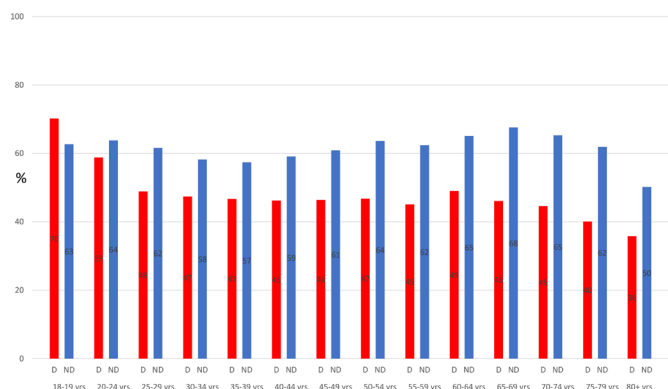


**Figure 1** Leisure-time physical activity participation compared between male and female adults with and without a disability. Key: D, adults with a disability  $\geq 6$  months (n=10 235); ND, adults without a disability (n=44 108); weighted percentages.

for adults with and without a disability; however, barriers were different, with poor health or injury being the number one barrier for adults with a disability. Together, these findings provide important insights to guide future research, policy and programme development to target greater participation in physical activity for adults with a disability across adulthood.

### Leisure-time physical activity across adulthood

Our finding that more adults with a disability did not meet physical activity guidelines through sport and/or physical recreation compared with those without disability matches other population-level studies<sup>7 8 11</sup> and studies evaluating people with specific health conditions (eg, traumatic brain injury,<sup>14</sup> stroke<sup>15</sup> and arthritis<sup>16</sup>). However, previous studies have not reported data across adulthood in smaller 5-year age brackets, which provided finer granulation. In doing this, our study raises two important implications both for practice and



**Figure 2** Meeting physical activity guidelines through sport and/or physical recreation using average weekly duration calculation\*—comparing adults with and without a disability of different ages. Key: D, adults with a disability  $\geq 6$  months, n=10 235; ND, adults without a disability, n=44 108; weighted percentages; \*average weekly duration calculation: adults 18+ meeting guidelines defined as  $\geq 150$  min per week of sport and/or physical recreation.

for research. First, adults with a disability need access to a range of opportunities for inclusive and/or disability-specific physical activity across the lifespan. In addition, embedding longitudinal research studies into these opportunities will enable evaluation of long-term health and social impacts for adults with a disability of meeting physical activity guidelines. Second, it is commonly assumed that the percentage of adults meeting physical activity guidelines reduces with age.<sup>17 18</sup> Comparing adults with and without a disability in our study suggests that disability rather than age per se may drive the reduction in physical activity participation. Given participation in physical activity helps reduce development of disability in older adults,<sup>19 20</sup> health promotion strategies targeting middle age to maximise function and prevent development of disability may be one strategy to promote healthy ageing.<sup>21</sup>

### Types of leisure-time physical activity

For Australian adults with and without a disability, walking was the most common leisure-time physical activity, similar to a US population study of adults with mobility limitations.<sup>10</sup> This is unsurprising given it is a free activity, can usually be done close to home and is flexible in its dose (ie, distance, speed, duration) and structure (eg, performed alone or in a group or with a pet). However, given fun/enjoyment was the second highest reported motivator in our study for adults with a disability to want to try a new physical activity, and has been shown to be an important factor for initiating and maintaining physical activity for people with a disability in other studies,<sup>22</sup> finding ways to participate in community-based walking activities may increase enjoyment and therefore be an effective strategy for sustained physical activity participation. Examples of community walking activities offered globally include parkrun (<https://www.parkrun.com/>), and a project in the UK is currently evaluating strategies to increase participation in parkrun by people with different health conditions.<sup>23</sup> However, it should also be considered that adults with a disability participated in less sport and fewer different types of activities. It is important to understand whether their current activity choices match their preferences<sup>24</sup> or reflects a lack of suitable opportunities. Study designs such as Discrete Choice Experiments<sup>25</sup> and qualitative studies may identify types of activities adults with a disability want to participate in, which will be important for service development to promote sustained physical activity participation. Of course, in the current global environment, any physical activity promotion strategies will need to consider COVID-19 safety.

### Role of health professionals

Health was both a key motivator and a barrier for people with a disability to participate in leisure-time physical activity. This has important implications for health professionals who frequently engage with people with a disability and currently do not routinely promote physical activity during their healthcare interactions.<sup>11</sup> Health

**Table 4** Motivations for currently active adults who indicated they wished to try a new activity and barriers for currently inactive adults with and without disability for participation in sport or physical recreation, numbers and percentages

Motivations	Active adults		Barriers	Inactive adults	
	with disability (n=2299*)	without disability (n=13345*)		with disability (n=2068†)	without disability (n=3355†)
Physical health or fitness‡	1264 (55)	6411 (46)	Poor health or injury‡	1315 (62)	459 (11)
Fun/enjoyment	728 (34)	4470 (34)	Disability‡	416 (19)	45 (1)
Other	577 (28)	3462 (26)	Lack of time, too many other commitments‡	160 (9)	1286 (43)
Social reason‡	321 (13)	2277 (18)	Increasing age/too old‡	267 (9)	322 (6)
To lose weight/keep weight off‡	184 (9)	899 (7)	Other‡	181 (10)	510 (15)
Physio/rehab/postop‡	195 (8)	276 (2)	Physical job‡	67 (7)	316 (17)
Psychological/mental health	162 (6)	890 (6)	Don't like sport/physical activity‡	74 (4)	234 (8)
To be outdoors/enjoy nature	124 (6)	639 (5)	Too lazy‡	63 (3)	214 (7)
Learn a new skill‡	96 (4)	820 (7)	Not a priority (anymore)‡	51 (2)	243 (7)
Hobby‡	87 (4)	649 (5)	No particular reason‡	38 (2)	237 (7)
Performance or competition	51 (2)	324 (3)	Fear of injury	27 (1)	29 (1)
Sense of achievement	29 (2)	271 (2)	No opportunities/facilities/ clubs in my area	15 (1)	36 (1)
Way of getting around	31 (2)	130 (1)	Too busy doing child's activities to do my own‡	9 (0.5)	73 (3)
Training purposes‡	24 (1)	224 (2)	Looking after child/infant‡	9 (0.3)	110 (4)
Part of my job	5 (0.4)	31 (0.3)	Can't afford it/can't afford transport	14 (1)	35 (1)
Walk the dog	8 (0.3)	19 (0.1)	Not value for money/not worth it	5 (0.2)	<5 (0)
No reason in particular‡	8 (0.3)	90 (1)	Not familiar with activity/rules	<5 (0.1)	6 (0.2)
Coaching	<5 (0)	8 (0)	Don't know	<5 (0)	9 (0.2)
Don't know	<5 (0)	20 (0.2)	No transport/can't get there‡	<5 (0)	10 (0.3)
For the money	0 (0)	7 (0)	Pregnancy‡	<5 (0.1)	36 (2)
			Weather	<5 (0)	9 (0.1)
			Not good enough‡	<5 (0)	10 (0.2)
			Too competitive	<5 (0)	0 (0)
			Nobody to do it with	0 (0)	6 (0)
			Fear of discrimination	0 (0)	0 (0)
			Not cul <sup>t</sup> urally appropriate	<5 (0)	<5 (0)

Actual number replaced with <5 when five or less respondents selected that motivator or barrier to maintain deidentification.

\*Adults considering trying a new sport or physical recreation activity in the next 12 months who have participated in sport or physical recreation in the past 12 months.

†Currently inactive adults who have not done any sport or physical recreation in the past 12 months.

‡Significant ( $p < 0.05$ ) difference between groups for weighted percentages ( $\chi^2$  analysis).

professionals such as physiotherapists, who are experts in movement science and have detailed knowledge of the pathologies of a range of health conditions, are well positioned to promote physical activity. Physiotherapists can provide education about how physical activity can benefit rather than worsen health conditions and recommend appropriate physical activity opportunities or how to adapt activities so that people with a disability can participate safely. This strategy requires training of healthcare professionals and effective partnerships and communication across health, disability and community sectors using frameworks such as the Transformative Exercise Framework.<sup>26 27</sup>

### Strengths and Limitations

We acknowledge our study has limitations. No data were available on the type of disability experienced by respondents, nor the support needs to engage in personal and social activities. As such, we could not compare participation rates, patterns, and motivations and barriers with participation of people with different types of disability or different levels of support—factors known to influence participation in physical activity.<sup>11 28</sup> Related to this, adults with a disability who could not verbally communicate or who live in institutional settings were excluded, and therefore the results cannot be generalised to all adults with a disability. Other limitations include that physical

activity was not measured using validated methods, and the data only reflect participation in leisure-time physical activity; thus, a full picture of physical activity participation is not possible. Despite these limitations, this study provides representative data on more than 10 000 Australian adults with a disability. It provides strong evidence to confirm adults with a disability are less physically active than adults without a disability, a discrepancy that requires urgent action globally.

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