



Australian Bureau of Statistics

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NEW ISSUE

1989-90 NATIONAL HEALTH SURVEY EXERCISE, AUSTRALIA

This publication contains statistics about physical exercise reported by the Australian population aged 15 years and over. These statistics have been compiled from information collected in the 1989-90 National Health Survey conducted by the ABS, and represent a selection of those available.

For the purposes of this publication, physical exercise refers only to that undertaken for recreation, sport or health/fitness purposes during the two weeks prior to interview, and encompasses the following:

- walking for exercise or recreation;
- moderate exercise, defined as that which caused a moderate increase in heart rate or breathing; and
- vigorous exercise, defined as that which caused a large increase in heart rate or breathing.

For each of these categories, the number of times a person exercised and total amount of time spent on exercise over the two weeks was recorded.

From the information recorded about the frequency, duration and intensity of exercise, an 'exercise level' of low, medium or high was derived for each respondent who reported exercising in the previous two weeks. (For an outline of how the index was derived, see the Explanatory Notes of this publication.)

MAIN FEATURES

- An estimated 8.7 million persons aged 15 years and over (65% of the population in that age group) engaged in some form of exercise in the two weeks prior to interview. Walking exercise was the most common, being reported by 45 per cent of persons aged 15 years and over.
- Exercise patterns differed by age, with vigorous and moderate exercise more likely to be undertaken by younger age groups and walking exercise more likely among middle to older age groups.
- Males were more likely to undertake vigorous or moderate exercise, while females were more likely to undertake walking exercise.
- Less than 6 per cent of adults who assessed their health status as 'fair' or 'poor' had engaged in vigorous exercise in the two weeks prior to interview and 9 per cent of persons classified as obese had done so.
- Persons who engaged in walking exercise tended to exercise more often and for a longer amount of time than those engaging in vigorous or moderate exercise.

INQUIRIES

For further information about National Health Survey output contact Brian Richings on Canberra (06) 252 5786 or any ABS State Office.

For information about other ABS statistics and services please contact Information Services on Canberra (06) 252 6627, 252 5402, 252 6007 or any ABS State Office.

I. EXERCISE PATTERNS

Persons who exercised

From information collected in the 1989-90 National Health Survey an estimated 8,671,000 persons aged 15 years and over or 65.4 per cent of the population in that age group engaged in some form of exercise in the two weeks prior to interview. As shown in the table below, walking exercise was the most common (reported by 44.7% of respondents aged 15 years and over), followed by moderate exercise and then vigorous exercise (32.6% and 17.9% respectively); see paragraph 4 of the Explanatory Notes.

TABLE 1. PERSONS AGED 15 YEARS AND OVER: TYPE OF EXERCISE BY SEX, AUSTRALIA, 1989-90

Type of exercise	Males	Females	Persons	
			('000)	Per cent
Vigorous exercise	1,497.5	882.1	2,379.6	17.9
Moderate exercise	2,311.4	2,017.8	4,329.1	32.6
Walking exercise	2,649.5	3,276.4	5,925.8	44.7
Total persons reporting exercise(a)	4,329.6	4,341.8	8,671.4	65.4
Population aged 15 years and over	6,566.6	6,698.4	13,265.0	100.0

(a) Each person may have reported more than type of exercise and therefore components do not add to totals.

Sex and age characteristics

Although the overall proportions of males and females reporting that they exercised in the two weeks prior to interview were similar, there were differences in the type of exercise reported by males and females. A higher proportion of males than females reported vigorous exercise (22.8% compared with 13.2%). Conversely, a higher proportion of females than males reported walking exercise (48.9% compared with 40.3%).

Age is a factor in the likelihood of exercising and in the type of exercise undertaken, and would account for some of the differences between total male and female populations, because of the greater numbers of older women. Overall, a larger proportion of persons in younger age groups reported exercising than in older age groups. For example, 77.2 per cent of persons aged 15 to 24 years reported engaging in some form of exercise in the two weeks prior to interview compared with 48.7 per cent of persons aged 75 years and over.

Moreover, type of exercise undertaken varied considerably according to age. Vigorous and moderate exercise were most commonly reported by persons aged 15 to 24 years (35.7% and 47.4% respectively). Walking exercise was most commonly reported by persons aged 65 to 74 years (53.5%). The number and proportion of persons who exercised by age and sex is shown in Table 3 below.

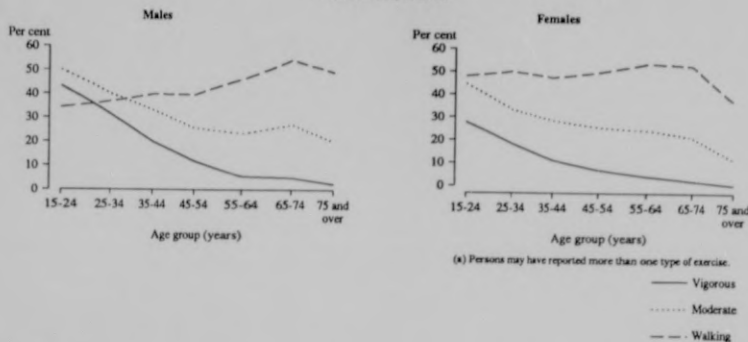
TABLE 3. PERSONS WHO EXERCISED IN THE TWO WEEKS PRIOR TO INTERVIEW BY AGE AND SEX AUSTRALIA, 1989-90

Type of exercise	Age group (years)							Males	Females	Persons
	15-24	25-34	35-44	45-54	55-64	65-74	75 and over			
Vigorous exercise- ('000)	984.9	700.8	399.7	170.8	72.3	42.4	8.6	1,497.5	882.1	2,379.6
Per cent(a)	35.7	25.0	15.6	9.5	5.0	3.5	1.2	22.8	13.2	17.9
Moderate exercise- ('000)	1,307.2	1,028.0	793.5	460.0	347.9	290.9	101.7	2,311.4	2,017.8	4,329.1
Per cent(a)	47.4	36.7	31.0	25.6	23.9	24.1	14.8	35.2	30.1	32.6
Walking exercise- ('000)	1,132.2	1,216.1	1,116.2	800.4	727.4	647.0	286.5	2,649.5	3,276.4	5,925.8
Per cent(a)	41.1	43.4	43.6	44.6	50.0	53.5	41.6	40.3	48.9	44.7
Total persons reporting exercise(b)- ('000)	2,128.6	1,912.6	1,602.2	1,048.1	882.6	761.9	335.4	4,329.6	4,341.8	8,671.4
Per cent(a)	77.2	68.3	62.6	58.4	60.7	63.0	48.7	65.9	64.8	65.4

(a) Per cent of persons in the respective age or sex groups. (b) Each person may have reported more than one type of exercise and, therefore, components do not add to totals.

Chart 1 below shows type of exercise undertaken in the two weeks prior to interview for males and females in selected age groups.

CHART 1. TYPE OF EXERCISE UNDERTAKEN(a) BY AGE BY SEX
AUSTRALIA, 1989-90



States and Territories

The proportion of persons aged 15 years and over reporting that they exercised showed some variation between States and Territories, being highest in the Australian Capital Territory (71.7%) and lowest in South Australia (63.1%). The Australian Capital Territory had the highest proportion of persons who engaged in vigorous exercise (24.6%) and walking exercise (51.2%), and together with the Northern Territory, had the highest proportion of persons who reported moderate exercise. Both of the Territories have relatively young populations, whereas South Australia has an older population than the Australian average. Table 2 shows the number and proportion of persons in each State and Territory who engaged in exercise.

TABLE 2. PERSONS WHO EXERCISED IN THE TWO WEEKS PRIOR TO INTERVIEW
STATES AND TERRITORIES, 1989-90

Type of exercise	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust
Vigorous exercise- ('000)	796.5	611.3	393.2	180.0	255.7	64.7	25.3	53.0	2,379.6
Per cent(a)	17.6	17.8	17.6	15.8	20.5	18.5	21.9	24.6	17.9
Moderate exercise- ('000)	1,432.1	1,057.3	809.0	329.2	459.7	101.1	48.9	91.7	4,329.1
Per cent(a)	31.6	30.9	36.2	28.9	36.8	28.9	42.5	42.6	32.6
Walking exercise- ('000)	2,044.0	1,533.7	949.0	497.2	570.3	166.5	54.9	110.3	5,925.8
Per cent(a)	45.1	44.8	42.4	43.7	45.6	47.6	47.7	51.2	44.7
Total persons reporting exercise(b)- ('000)	2,942.4	2,240.0	1,448.8	717.5	857.9	230.4	80.1	154.4	8,671.4
Per cent(a)	64.9	65.4	64.7	63.1	68.6	65.9	69.6	71.7	65.4

(a) Per cent of persons aged 15 years and over. (b) Each person may have reported more than one type of exercise and, therefore, components do not add to totals.

Birthplace

The proportion of persons who reported exercising differed by birthplace, with persons born in Northern America more likely to have exercised than persons born elsewhere (79.9% compared with, for example, 44.1% of persons born in Southern Europe). This was particularly the case for vigorous exercise, reported by 25.2 per cent of respondents born in Northern America compared with 6.4 per cent of respondents born in Southern Europe. While the different age structures of the overseas born population contributed to the different overall exercise patterns observed, the proportion of people from Southern Europe, the Middle East and Southeast Asia who exercised was relatively low for most age groups, as shown in the following table.

TABLE 4. PERSONS WHO EXERCISED(a) BY SELECTED BIRTHPLACE AND AGE
AUSTRALIA, 1989-90
(Per cent(b))

Birthplace	Age group (years)				Total
	15-24	25-34	35-54	55 and over	
Australia	77.5	70.2	63.1	59.2	67.2
New Zealand	75.0	71.9	64.4	72.5	70.0
UK and Ireland	78.2	72.5	67.2	64.5	68.2
Southern Europe	73.6	49.7	39.6	44.8	44.1
Middle East	60.6	41.5	48.4	58.7	50.0
Southeast Asia	72.0	45.3	54.0	53.5	56.2
Northern America	78.7	84.4	76.3	81.2	79.9

(a) Reported any type of exercise in the two weeks prior to interview. (b) Per cent of persons of same age and birthplace.

Education

Persons with post-school qualifications were more likely to have exercised in the two weeks prior to interview than those without (69.3% compared with 60.5%). Persons with a bachelor degree or higher reported the most exercise of all, with 78.6 per cent reporting some form of exercise and 28.8 per cent reporting vigorous exercise.

Health status

Persons aged 18 years and over who assessed their overall health status as 'excellent' or 'good' were more likely to have exercised in the two weeks prior to interview than those who assessed their health status as 'fair' or 'poor' (67.0% compared with 53.4%). This was particularly the case with vigorous exercise, reported by 19.1 per cent and 5.7 per cent respectively.

Persons who reported an injury as a recent or long-term condition were more likely to exercise than those reporting most other major illness conditions. For example, 71.4 per cent of persons reporting injuries had engaged in some form of exercise compared with 54.8 per cent of persons who reported heart disease as a recent or long-term condition. Furthermore, of those persons reporting illness conditions, those with injuries were the most likely to have engaged in vigorous or moderate exercise (27.8% and 41.0% respectively), while persons who reported high cholesterol as a condition were the most likely to have engaged in walking exercise (53.3%). The different age structures of the populations with different illness conditions may account, in part, for the different exercise patterns observed, as shown in the following table.

TABLE 5. PERSONS WHO EXERCISED(a) BY SELECTED ILLNESS CONDITIONS
AND AGE, AUSTRALIA, 1989-90
(Per cent(b))

Illness condition	Age group (years)			Total
	15-44	45-64	65 and over	
Diabetes mellitus	66.1	58.3	55.8	58.3
High cholesterol	66.5	67.5	64.4	66.6
Hypertension	66.9	58.9	56.8	58.9
Heart disease	66.5	60.4	50.6	54.8
Cerebrovascular disease (inc. stroke after effects)	67.7	49.4	43.8	47.3
Arthritis	65.1	61.0	53.2	58.5
Disorders of the intervertebral disc	66.2	59.1	66.6	63.5
Unspecified back trouble	68.3	63.9	59.5	66.1
Injuries	76.9	63.3	53.7	71.4

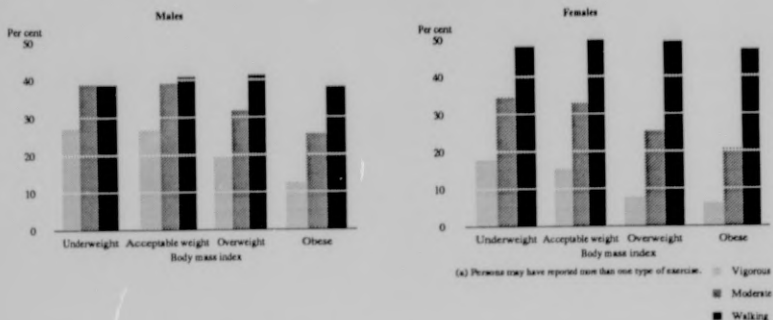
(a) Reported any type of exercise in the two weeks prior to interview. (b) Per cent of persons of same age and with same illness condition.

Body mass index (BMI)

Based on reported height and weight, respondents aged 15 years and over were grouped by body mass index scores into categories of underweight, acceptable weight, overweight or obese: see paragraph 6 of the Explanatory Notes. Persons who were classified as overweight or obese were less likely to exercise than those who were of acceptable weight. This was particularly the case in respect of vigorous exercise, with 9.0 per cent of persons classified as obese

reporting vigorous exercise in the two weeks prior to interview compared with 20.8 per cent of persons of acceptable weight. The following chart shows the proportion of males and females who exercised, according to their BMI type.

CHART 2. TYPE OF EXERCISE UNDERTAKEN(a) BY BODY MASS INDEX BY SEX
AUSTRALIA, 1989-90



Smoking

Current smokers were less likely to have exercised than ex-smokers or persons who had never smoked (59.6% compared with 67.0% and 65.6% respectively). Table 6 below shows the proportion of persons who exercised according to their age and whether they were smokers, ex-smokers or had never smoked.

TABLE 6. PERSONS AGED 18 YEARS AND OVER WHO EXERCISED(a) BY SMOKER STATUS AND AGE
AUSTRALIA, 1989-90
(Per cent(b))

Smoker status	Age group (years)						Total
	18-24	25-34	35-44	45-64	65-74	75 and over	
Current smoker	70.3	61.8	55.9	52.7	56.6	49.1	59.6
Ex-smoker	79.4	73.6	67.5	63.0	67.3	53.4	67.0
Never smoked	76.8	71.0	64.3	61.0	62.0	46.3	65.6

(a) Reported any type of exercise in the two weeks prior to interview. (b) Per cent of persons of same age and smoker status.

II. EXERCISE LEVEL

The aim of deriving an 'exercise level' for each respondent who reported some exercise was to produce a single descriptor of relative overall exercise level taking into account the type(s), frequency and duration of reported exercise, and to indicate the quality of the activities undertaken in terms of maintaining heart, lung and muscle fitness. Respondents were classified into low, medium or high exercise levels according to a formula which takes these factors into account. An outline of the method used can be found in the Explanatory Notes.

Frequency and duration of exercise

Persons who reported walking exercise tended to exercise more often and for a longer amount of time than persons who engaged in vigorous or moderate exercise. For example, 47.7 per cent of persons who reported walking exercise did so more than six times in the two weeks prior to interview compared with 21.6 per cent of persons who reported vigorous exercise. Similarly, 46.0 per cent of persons who reported walking exercise did so for a total of five hours or more during that period compared with 37.4 per cent of persons who exercised vigorously. The following table shows the number of times persons exercised and the amount of time spent exercising.

TABLE 7. PERSONS WHO EXERCISED: NUMBER OF TIMES EXERCISED(a) AND TOTAL AMOUNT OF TIME EXERCISED(a) FOR EACH TYPE OF EXERCISE
AUSTRALIA, 1989-90
(Per cent)

	Type of exercise(h)		
	Vigorous	Moderate	Walking
Number of times			
One or two	42.0	35.7	21.3
Three to six	36.4	36.3	30.9
More than six	21.6	27.9	47.7
Total amount of time			
Less than one hour	10.2	9.2	7.7
One hour to less than two hours	16.2	14.9	14.0
Two hours to less than five hours	36.2	38.1	32.2
Five hours or more	37.4	37.8	46.0

(a) In the two weeks prior to interview. (b) Persons have been separately counted in each type of exercise they reported.

In general, higher levels of exercise in total were associated with more vigorous exercise and, in particular, a greater likelihood of different types of exercise in combination. The following table shows the relationship between type of exercise and exercise level for persons who exercised.

TABLE 8. PERSONS WHO EXERCISED: TYPE OF EXERCISE BY EXERCISE LEVEL, AUSTRALIA, 1989-90

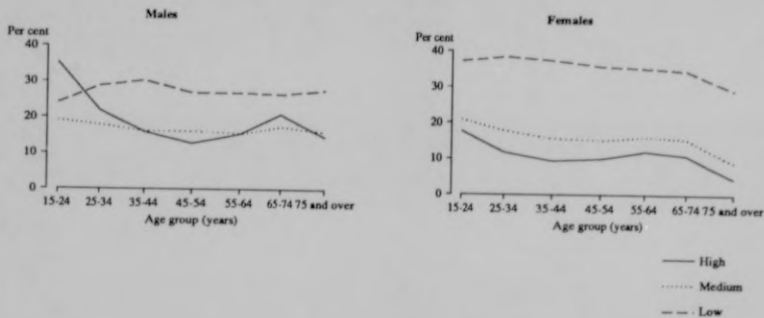
Type of exercise	Exercise level(a)								Total
	Low		Medium		High				
	('000)	Per cent	('000)	Per cent	('000)	Per cent	('000)	Per cent	
Vigorous exercise only	178.6	4.2	197.4	8.8	238.7	10.9	614.8	7.1	
Moderate exercise only	874.7	20.7	321.4	14.3	260.9	11.5	1,457.0	16.8	
Walking exercise only	2,384.3	56.3	640.9	28.5	287.0	13.1	3,312.2	38.2	
Vigorous and moderate only	99.2	2.3	223.4	9.9	351.2	16.0	673.8	7.8	
Moderate and walking only	539.4	12.7	526.4	23.4	456.9	20.9	1,522.6	17.6	
Vigorous and walking only	92.1	2.2	137.6	6.1	185.6	8.5	415.3	4.8	
Vigorous, moderate and walking	65.9	1.6	201.3	9.0	408.4	18.7	675.7	7.8	
Total	4,234.2	100.0	2,248.5	100.0	2,188.7	100.0	8,671.4	100.0	

(a) See paragraph 5 of the Explanatory Notes.

Age and sex

A higher proportion of males than females engaged in high levels of exercise (21.3% compared with 11.8%), with females more likely to engage in low levels of exercise (36.3% compared with 27.4%). Exercise level also varied according to age. Persons aged 15 to 24 years were more likely to engage in high levels of exercise (26.7%) than other age groups, with persons aged 75 years and over least likely (8.4%). Persons aged 15 to 24 years were also the most likely to engage in medium levels of exercise (20.0%). The chart below shows exercise level for males and females in selected age groups.

CHART 3. EXERCISE LEVEL BY AGE BY SEX, AUSTRALIA 1989-90



EXPLANATORY NOTES

The 1989-90 National Health Survey was conducted during the twelve months October 1989 to September 1990 and covered approximately 22,200 private and special dwellings (eg. hotels, motels, boarding houses) selected throughout Australia. Hospitals and nursing homes were excluded from the sample. Where possible, each adult member of selected households was interviewed by a trained ABS interviewer; an adult member of each household, usually a parent or guardian, was asked to provide information about children in the household.

2. The National Health Survey was conducted over a full year, with an approximately equal number of households selected for interview in each fortnight. As the estimates are based on information obtained from the occupants of a sample of dwellings, they may differ from figures that would have been obtained if all dwellings had been included.

3. Information collected in the survey included medical conditions experienced, actions people had taken in relation to their health such as doctor consultations, use of medications and episodes in hospital, and aspects of lifestyle and other factors which may influence health such as smoking, alcohol consumption, exercise and height and weight. A range of demographic and socio-economic information was also collected. Women aged 18 to 64 years were invited to complete a small additional questionnaire on specific women's health issues.

4. Respondents aged 15 years and over were asked if, in the two weeks prior to interview, they had walked or undertaken moderate and/or vigorous exercise for recreation, sport or health/fitness reasons. While walking was not specifically excluded from the other categories, through the ordering of the questions it was unlikely that walking was reported as either moderate or vigorous exercise. Apart from walking, no information was collected in the survey about the type(s) of activities undertaken as exercise.

5. Exercise level was based on a score, derived from:

No of times	Average time
activity undertaken X	per session X
	Intensity

where Intensity is a measure of the energy expenditure required to carry out each type of exercise, expressed as a multiple of the resting metabolic rate. A score was derived for each of the three categories of exercise and then summed to provide a total for the respondent for the two week period. Respondents were then grouped into one of the three levels (low, medium, high) in a manner consistent with that used in published output from a series of six surveys on the physical activity patterns of Australians commissioned by the then Department of Sport, Recreation and Tourism in 1984. The methodology used is explained in greater detail in the publication *1989-90 National Health Survey: Users' Guide* (Cat No 4363.0).

6. Body mass index (BMI) scores were derived from self-reported height and weight using the formula of weight (kg) divided by the square of height (m²). Persons were classified to BMI groups, defined according to recommendations of the National Health and Medical Research Council, as applied in the analysis of data from the National Heart Foundation's Risk Factor Prevalence Study 1989.

7. Details of the survey, its scope and coverage, methods and notes concerning the interpretation of results (including comparability with previous ABS health surveys) are contained in the publication *1989-90 National Health Survey: Users' Guide* (Cat No 4363.0). Information about the range of publications to be released from this survey, and the availability of unpublished results is contained in the information brochure *1989-90 National Health Survey: Products and Services* which is available free of charge from any office of the ABS.

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