

Chapter 3: Physical Activity

Key points

- Regular moderate physical activity can improve health and wellbeing.
- Overall, 61% of adults in the 1996/97 Health Survey could be described as 'physically active'; that is, they took part in 2.5 hours or more of leisure-time physical activity in the previous week. A similar proportion of men and women of all ages up to the age of 75 years fell into the physically active category.
- Fifteen percent of all adults were sedentary (had participated in no leisure-time physical activity in the previous week). Men of all ages and people aged over 75 years were more likely to be sedentary.
- Younger people were more likely to participate in vigorous physical activity than older people.
- European/Pākehā, Māori and Pacific people were almost equally likely to fall into the physically active category; however, Māori and people from the Other ethnic group were more likely to be sedentary than European/Pākehā or Pacific people.
- Participation in vigorous activity was associated with all three measures of socioeconomic status (family income, level of education and NZDep96 score); however, duration of physical activity was only significantly associated with level of education.
- Sedentary people were more likely to rate their health as fair or poor, and were more likely to be admitted to hospital.
- Choice of specific physical activity varied by age and sex. Overall, the most popular form of physical activity was walking, followed by gardening and exercising at home.

Introduction

Lack of physical activity has been shown to be as important a risk factor for heart disease as smoking, high cholesterol levels and high blood pressure (Berlin and Colditz 1990; US Department of Health and Human Services 1996). Physical activity has also been shown to decrease the chances of dying prematurely overall, having a stroke, having high blood pressure and developing diabetes or cancer of the colon. It helps to reduce weight, build and maintain strong bones, reduce the risk of falling among older people, and reduce the likelihood of depression and anxiety (US Department of Health and Human Services 1996; National Health Committee 1998). It has been estimated that up to one-third of the deaths from coronary heart disease, diabetes and cancer of the colon in New Zealand can be attributed to lack of physical activity (Walker and Bauman 1998; Galgali et al 1998).

There is now widespread agreement that regular physical activity of moderate intensity is beneficial to health (Pate et al 1995; US Department of Health and Human Services 1996; National Health Committee 1998). This is true even if such moderate activity does not necessarily produce large gains in physical fitness (Arroll and Swinburn 1994). Moderate physical activity is activity performed at an intensity equivalent to brisk walking. People of all ages and lifestyles can benefit by increasing their level of moderate physical activity to at least 30 minutes each day on all or most days of the week (Pate et al 1995; US Department of Health and Human Services 1996; National Health Committee 1998). Vigorous activity is also important to health and to cardiovascular fitness, but only a relatively small proportion of the population manage to participate in enough regular vigorous activity to benefit from it. Those who do, however, will benefit from even more health advantages (National Health Committee 1998).

In the 1996/97 Health Survey, respondents were asked whether they had participated in a given range of activities in the last seven days for exercise or enjoyment, and if so, for how long. They were also asked whether each activity had made them breathe hard or sweat: this was an indicator of whether respondents had participated in vigorous physical activity in the last seven days. The specific activities listed included walking, swimming, gardening, cycling, running or jogging, gym exercises, tennis, bowls, rugby, netball, and cricket. Respondents were also asked to name other physical activity or sport that they had undertaken in the past week which was not listed. No data were collected on activity at work or looking after a home.

In the 1992/93 Health Survey, questions on physical activity focused on vigorous physical activity only (Ministry of Health 1995). As a result, the questions developed for the 1996/97 Health Survey are not comparable as they were designed to recognise the benefits of all physical activity. The results from the 1996/97 Health Survey were, however, designed to be comparable with those from the Hillary Commission Sport and Physical Activity Survey. This was a survey of 3259 adults aged 18 years and over, carried out in 1996 on a variety of aspects of sports and physical activity (Hillary Commission 1998).

The information from the 1996/97 Health Survey was used to categorise people based on the amount of time they reported participating in leisure-time physical activity. Apart from very minor differences, the categories were the same as those used in the Hillary Commission Survey (see note under Table 9).

Inactive: adults who took part in less than 2.5 hours of leisure-time physical activity in the seven days before the interview. This includes adults who are relatively inactive and sedentary (see Table 9).

Active: adults who took part in 2.5 hours or more of leisure-time physical activity in the seven days before the interview. This includes adults who are relatively and highly active (see Table 9).

Table 9: Categories of levels of physical activity used in the 1996/97 New Zealand Health Survey

Physically inactive	Sedentary	No sports/activities in the previous seven days
	Relatively inactive	Took part in some leisure-time physical activity in the previous seven days, but less than 2.5 hours in total
Physically active	Relatively active	Took part in at least 2.5 hours, but less than five hours of leisure-time physical activity in the previous seven days
	Highly active	Took part in five hours or more of leisure-time physical activity in the previous seven days

Note: In the Hillary Commission Survey the categories were the same, except that people who had not done any physical activity in the previous seven days, but had done some in the previous four weeks, were included in the relatively inactive category. This meant that those in the sedentary category were those who had done no physical activity in the previous four weeks.

A separate category is made up of those who took part in any vigorous leisure-time physical activity in the previous seven days (defined as activity of sufficient intensity to make the person breath hard or sweat).

The physically active group comprises those people who are managing to meet Hillary Commission and Ministry of Health guidelines recommending that people participate in at least 30 minutes of moderate level physical activity nearly every day (Hillary Commission 1997; Ministry of Health 1998). Those who are sedentary are both most at risk of adverse health outcomes, and are also most likely to benefit from increasing their level of physical activity compared with any other group (US Department of Health and Human Services 1996). Those who participated in any vigorous physical activity in the last seven days allow some informal comparisons with the previous health survey. However, neither this survey nor the Hillary Commission Survey quantified energy expenditure in physical activity. Gardening, for example, covers a wide range of activities with varying levels of intensity, so the actual levels of benefit to health status may be somewhat lower than those suggested by these surveys (National Health Committee 1998).

Unless otherwise stated, age- and sex-standardised rates, and 95% confidence intervals in parentheses, are given in the text. Tables at the end of this section show key standardised and unstandardised results. More detailed tables related to this section are available on the Ministry of Health website (www.moh.govt.nz).

Results

Physical activity

Physical activity by age and sex

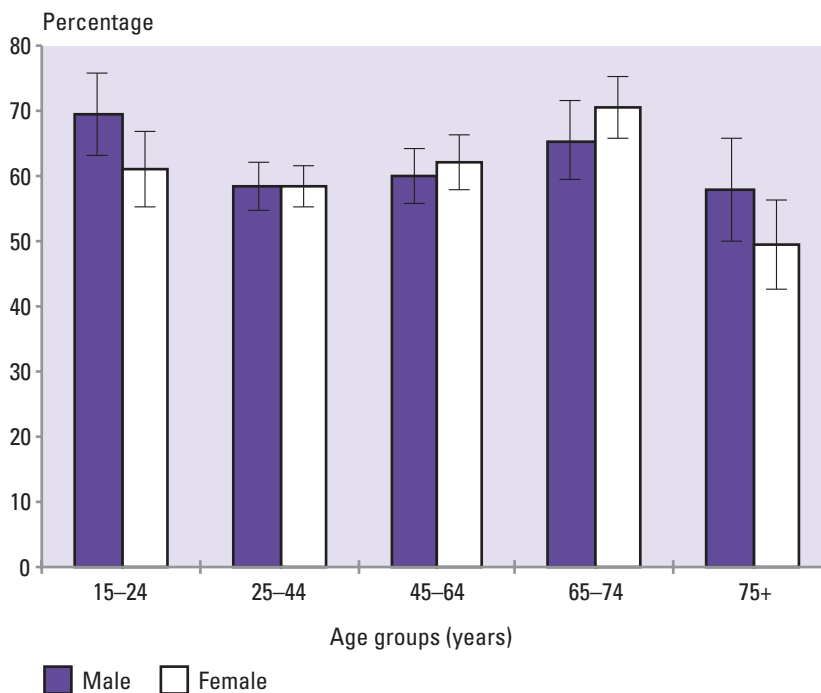
Overall, 60.9% (59.3–62.5) of the adults in the 1996/97 Health Survey fell into the physically active category, including 19.2% (18.0–20.4) in the relatively active category and 41.6% (39.8–43.4) in the highly active category. Similar proportions of men and women were physically active: 61.5% (59.1–

63.9) of men and 60.3% (58.3–62.3) of women. However, men were more likely to be in the highly active category ($p < 0.001$). Forty-five percent (44.6%; 42.1–47.1) of men were in this category, compared with 38.8% (36.6–41.0) of women.

Nearly four in ten (39.1%; 37.5–40.7) adults could be described as physically inactive. This included 15.3% (14.1–16.5) who were sedentary and 23.9% (22.5–25.3) who were relatively inactive. Overall, similar proportions of men and women reported that they were physically inactive, but men were more likely than women to be sedentary (17.1%; 15.3–18.9 and 13.5%; 11.9–15.1 respectively; $p < 0.01$).

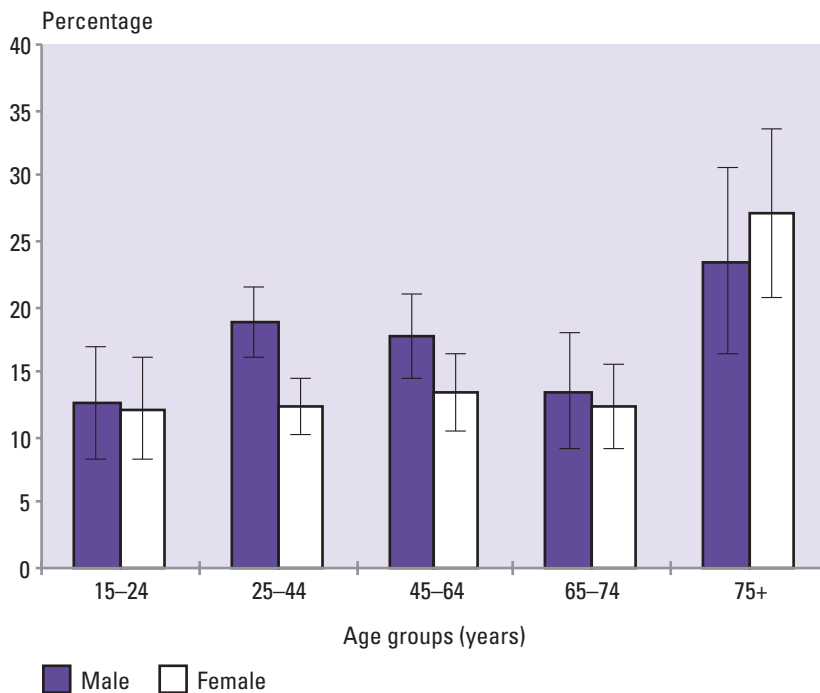
There were high levels of physical activity in all age groups. The highest levels were seen in the 15–24 and 65–74 years age groups, among whom 65.0% (60.9–69.1) and 68.0% (63.9–72.1) respectively were physically active. The lowest level was seen among those aged over 75 years, but even in this age group over half (53.0%; 47.5–58.5) managed to be physically active (see Figure 10). The proportions of people who were sedentary varied with age ($p < 0.0001$). People in the youngest age group and those aged 65–74 years were least likely to be sedentary (12.4%; 9.7–15.1 and 12.9%; 10.2–15.6 respectively). Around 15.4% (13.6–17.2) of those between the ages of 25 and 64 years were sedentary, while over a quarter (25.5%; 20.8–30.2) of those aged over 75 years were sedentary (see Figure 11).

Figure 10: Proportion of people who are physically active, by age and sex



Note: Error bars indicate 95% confidence intervals. For further explanation of graphs, see Appendix 2: Notes to Figures and Tables.

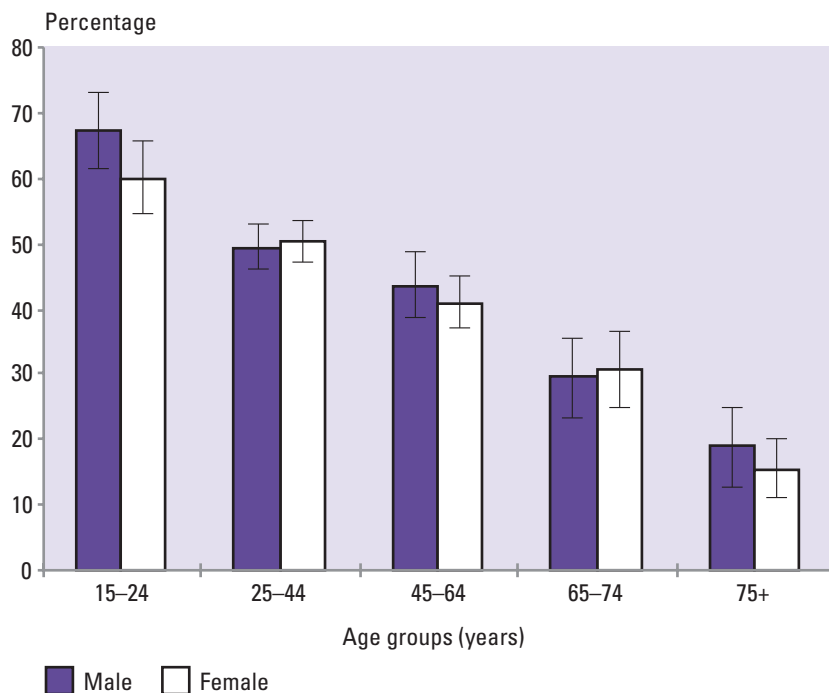
Figure 11: Proportion of adults who are sedentary, by age and sex



Note: Error bars indicate 95% confidence intervals. For further explanation of graphs, see Appendix 2: Notes to Figures and Tables.

Overall, nearly half (46.8%; 45.0–48.6) of all adults reported participating in some vigorous physical activity in the last week. This was similar for men and women (47.8%; 45.3–50.3 and 45.8%; 43.6–48.0 respectively). The proportion of people doing vigorous activity declined with age for both men and women ($p < 0.0001$). For example, while over two-thirds (67.2%; 61.3–73.1) of males aged between 15 and 24 years reported participating in vigorous activity, less than half (49.4%; 45.9–52.9) of those aged between 25 and 44 years reported doing so. This proportion dropped to less than one in five of those 75 years and over (19.0%; 12.9–25.1). The comparable numbers for women were 60.0% (54.3–65.7) in the youngest age group, 50.2% (47.1–53.3) at age 25–44 years and 15.7% (11.3–19.9) for those 75 years and over (see Figure 12).

Figure 12: Proportion of people participating in vigorous physical activity in the last week, by age and sex



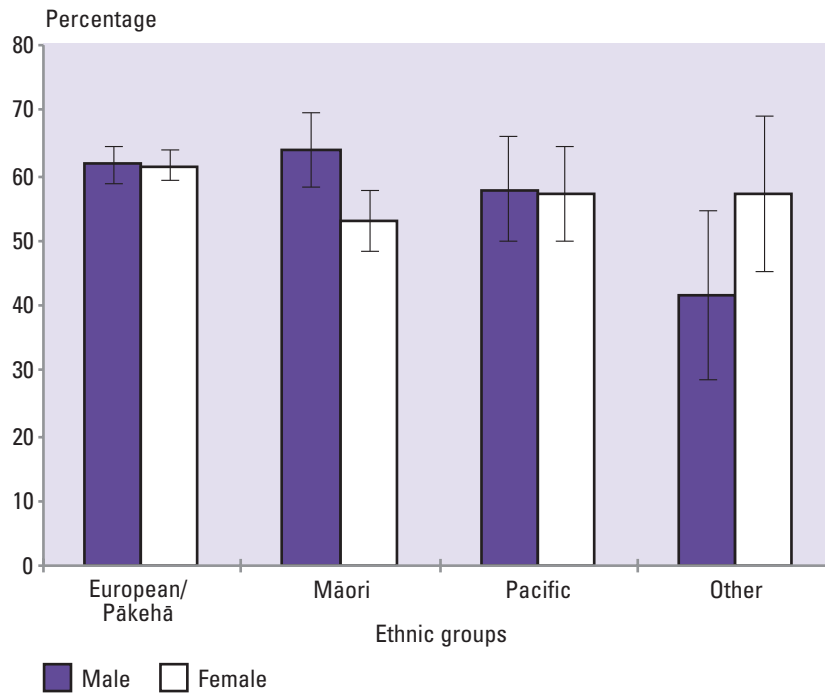
Note: Error bars indicate 95% confidence intervals. For further explanation of graphs, see Appendix 2: Notes to Figures and Tables.

There were only minor differences between these findings and those of the Hillary Commission Survey (Hillary Commission 1998) which found that overall 66% of women and 63% of men were physically active compared with 61.5% of men and 60.3% of women in the 1996/97 Health Survey. Men, women and people of different ages were found to be active to a similar extent, although the oldest age group in that report was 'over 50 years'. In terms of vigorous activity, the pattern of results of the 1996/97 Health Survey was consistent with those of the 1992/93 Health Survey despite methodological differences (Ministry of Health 1995).

Physical activity by ethnicity

Overall, 61.6% (59.8–63.4) of European/Pākehā, 58.2% (54.3–62.1) of Māori, 57.5% (51.6–63.4) of Pacific people, and 49.6% (40.4–58.8) of people from 'Other' ethnic groups were physically active (see Figure 13). Māori and European/Pākehā people were equally likely to be highly active (41.6%; 37.9–45.3 and 42.0%; 40.0–44.0 respectively), with the proportions for Pacific people and people from the Other ethnic group being 36.4% (31.5–41.3) and 30.1% (21.9–38.3) respectively.

Figure 13: Proportion of people who are physically active, by ethnicity and sex (age-standardised)

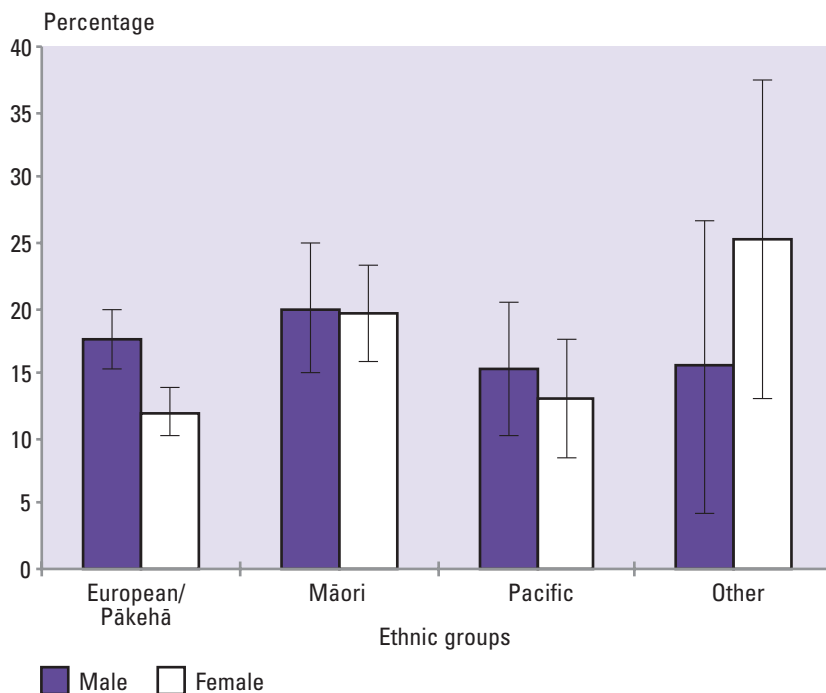


Note: Error bars indicate 95% confidence intervals. For further explanation of graphs, see Appendix 2: Notes to Figures and Tables.

Thirty-eight percent (38.4%; 36.6–40.2) of European/Pākehā, 41.8% (37.9–45.7) of Māori, 42.5% (36.6–48.4) of Pacific people and 50.4% (41.2–59.6) of those from the Other ethnic group were physically inactive. Māori (19.8%; 16.7–22.9) and people from Other ethnic backgrounds (20.5%; 12.1–28.9) were more likely to be sedentary; with 14.7% (13.3–16.1) of European/Pākehā and 14.1% (10.6–17.6) of Pacific people reporting that they were sedentary (see Figure 14). Women from the Other ethnic group were particularly likely to be sedentary, with one in four women in this group reporting that they did no leisure-time physical activity in the last seven days. In all other ethnic groups, women were less likely to be sedentary than men. There were no significant differences in rates of participation in vigorous physical activity across ethnic groups.

Again, these findings are similar to those of the Hillary Commission (Hillary Commission 1998), although that survey did not separately analyse the responses from Pacific people and people from the Other ethnic group.

Figure 14: Proportion of people who are sedentary, by ethnicity and sex (age-standardised)



Note: Error bars indicate 95% confidence intervals. For further explanation of graphs, see Appendix 2: Notes to Figures and Tables.

*Physical activity by income, education and NZDep96 score**

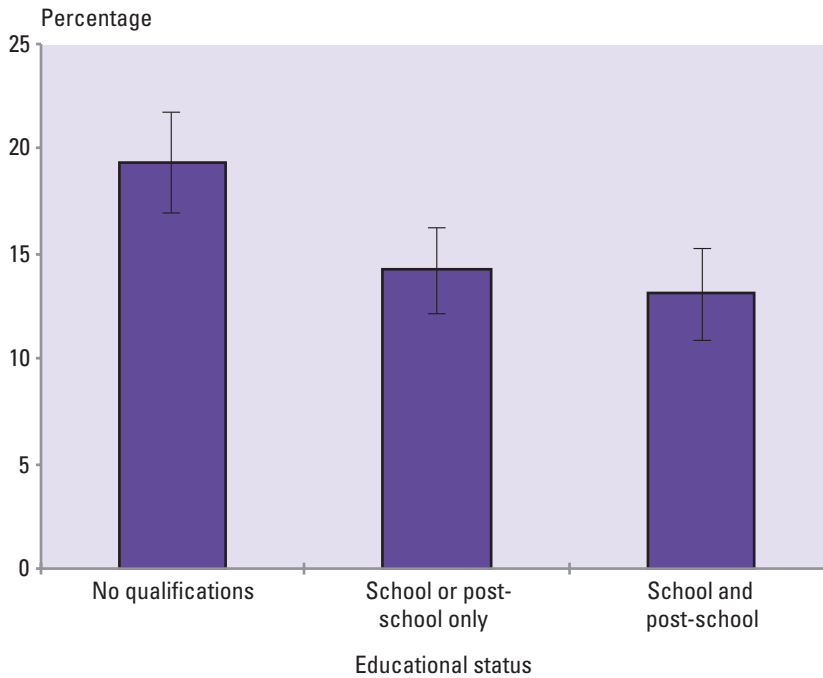
Duration of physical activity was not significantly associated with either level of family income or with the NZDep96 score; however, there was a relationship with level of education. Those with a lower level of education tended to participate in less physical activity ($p = 0.0001$). For example, those with no qualifications were significantly more likely to be sedentary than those with school and post-school qualifications (19.4%; 17.0–21.8 and 13.1%; 10.9–15.3 respectively; see Figure 15).

On the other hand, participation in vigorous physical activity was significantly associated with household income ($p < 0.05$), levels of education ($p < 0.0001$) and NZDep96 scores, although this last relationship was evident for women only ($p < 0.05$). Those with higher levels of income and education, and those living in less-deprived areas, tended to participate in more vigorous physical activity.

The 1992/93 Health Survey also found an inverse relationship between participation in vigorous activity and both income and educational status.

* The NZDep96 score measures the level of deprivation in the area in which a person lives, according to a number of census variables, such as the proportion of people in that area who earn low incomes or who receive income support benefits, are unemployed, do not own their own home, have no access to a car, are single-parent families, or have no qualifications. The scores are divided into quartiles from 1 (least deprived) to 4 (most deprived). For more details, see Chapter 1: The Survey.

Figure 15: Proportion of people who are sedentary, by education (age- and sex-standardised)



Physical activity by self-rated health

Level of physical activity was strongly associated with a person’s self-rated health status ($p < 0.0001$). For example, those who were sedentary were twice as likely to rate their health as fair or poor compared with those who were highly active (see Table 10). There are two possible explanations for these findings. The first is that people who are unwell are less likely to participate in physical activity. The second is that people who are physically active feel better as a result. Because this is a cross-sectional survey, it is not possible to ascertain which of these explanations is correct; however, it is likely that both play a role.

Table 10: Self-rated health status, by level of physical activity: percent (95% confidence intervals)

	Excellent/very good % (95% CI)		Good % (95% CI)		Fair/poor % (95% CI)	
	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*
Sedentary	49.9 (45.6–54.2)	50.0 (45.7–54.3)	29.5 (25.4–33.6)	29.5 (25.4–33.6)	20.6 (17.1–24.1)	20.6 (16.9–24.3)
Relatively inactive	55.2 (52.3–58.1)	54.6 (51.5–57.7)	32.8 (30.1–35.5)	33.1 (30.2–36.0)	12.0 (10.2–13.8)	12.4 (10.6–14.2)
Relatively active	62.1 (58.8–65.4)	61.2 (57.9–64.5)	28.1 (25.0–31.2)	28.1 (25.0–31.2)	9.8 (8.0–11.6)	10.7 (8.7–12.7)
Highly active	61.4 (59.0–63.8)	61.9 (59.4–64.4)	28.2 (25.8–30.6)	28.0 (25.6–30.4)	10.4 (8.8–12.0)	10.1 (8.7–11.5)

* Adjusted rates are adjusted for age and sex.

Note: For further explanation of Tables, see Appendix 2: Notes to Figures and Tables.

Physical activity by health service utilisation

After adjustment for differences in age and sex, levels of physical activity were not associated with number of visits to the GP in the last year. People who were sedentary, however, were more likely to have been admitted to hospital in the last year compared with their more active counterparts ($p < 0.01$). Around one in five sedentary people were admitted to hospital in the last year (19.2%; 15.9–22.5), compared with around one in seven people who were not sedentary (14.0%; 12.2–15.8).

Most popular activities

Walking was by far the most popular form of physical activity, with more than 6 out of 10 people (61.4%; 59.8–63.0) reporting that they had been walking for either enjoyment or exercise in the last seven days. Gardening was the next most popular activity, with 36.2% (34.6–37.8) of people reporting that they had been gardening in the last week. Other popular activities were exercising at home (13.6%; 12.4–14.8), running or jogging (10.5%; 9.5–11.5), gym exercise (9.6%; 8.6–10.6), cycling and swimming (both 9.1%; 8.1–10.1).

There were differences in people's choice of activity by age and sex. For example, men were more likely to go running, cycling, to the gym or to play rugby than women, who were more likely to go walking, do gardening, go to aerobics and play netball. Younger people were more likely than older people to participate in more vigorous physical activities such as running or jogging, cycling and gym exercise. The most popular forms of physical activity for those over 65 years were walking (60.0%; 56.7–63.3), gardening (54.2%; 50.7–57.7), doing exercise at home (9.8%; 7.8–11.8) and playing bowls (9.7%; 7.7–11.7).

Table 11: Reported levels of physical activity, by sociodemographic variables: percent (95% confidence intervals)

	Sedentary			Relatively inactive			Relatively active			Highly active		
	% (95% CI)		Pop est	% (95% CI)		Pop est	% (95% CI)		Pop est	% (95% CI)		Pop est
	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*
Total	15.3 (14.1-16.5)		431,211	23.9 (22.5-25.3)		674,197	19.2 (18.0-20.4)		543,757	41.6 (39.8-43.4)		1,175,621
Sex												
Male	17.1 (15.3-18.9)	17.1 (15.3-18.9)	234,349	21.4 (19.2-23.6)	21.4 (19.4-23.4)	294,704	17.0 (15.2-18.8)	16.9 (15.3-18.5)	233,258	44.5 (42.0-47.0)	44.6 (42.1-47.1)	611,693
Female	13.6 (12.0-15.2)	13.5 (11.9-15.1)	196,862	26.2 (24.4-28.0)	26.2 (24.4-28.0)	379,494	21.4 (19.6-23.2)	21.5 (19.7-23.3)	310,499	38.9 (36.7-41.1)	38.8 (36.6-41.0)	563,929
Age												
15-24 years	12.4 (9.7-15.1)	12.4 (9.7-15.1)	65,584	22.4 (18.7-26.1)	22.5 (18.8-26.2)	118,190	18.2 (15.3-21.1)	18.2 (15.3-21.1)	96,007	47.0 (42.7-51.3)	46.8 (42.5-51.1)	248,184
25-44 years	15.4 (13.6-17.2)	15.4 (13.6-17.2)	176,175	26.2 (24.2-28.2)	26.2 (24.2-28.2)	299,023	20.6 (18.6-22.6)	20.6 (18.6-22.6)	235,201	37.8 (35.4-40.2)	37.8 (35.4-40.2)	431,200
45-64 years	15.6 (13.4-17.8)	15.5 (13.3-17.7)	116,819	23.4 (20.7-26.1)	23.5 (20.8-26.2)	175,922	20.4 (17.9-22.9)	20.4 (17.9-22.9)	152,907	40.6 (37.5-43.7)	40.6 (37.5-43.7)	304,620
65-74 years	12.9 (10.2-15.6)	12.9 (10.2-15.6)	31,525	18.9 (15.8-22.0)	19.1 (16.0-22.2)	46,256	14.4 (11.3-17.5)	14.4 (11.1-17.3)	35,255	53.8 (49.3-58.3)	53.8 (49.3-58.3)	131,514
75+ years	25.6 (20.9-30.3)	25.5 (20.8-30.2)	41,107	21.7 (17.8-25.6)	21.5 (17.6-25.4)	34,807	15.2 (11.5-18.9)	15.3 (11.4-19.2)	24,386	37.5 (32.4-42.6)	37.8 (32.5-43.1)	60,104
Ethnicity												
European/Pākehā	14.9 (13.5-16.3)	14.7 (13.3-16.1)	337,550	23.5 (21.9-25.1)	23.7 (22.1-25.3)	532,944	19.5 (17.9-21.1)	19.6 (18.0-21.2)	441,562	42.1 (40.1-44.1)	42.0 (40.0-44.0)	955,341
Māori	17.3 (14.6-20.0)	19.8 (16.7-22.9)	48,239	21.6 (18.7-24.5)	21.9 (19.0-24.8)	60,426	16.6 (14.1-19.1)	16.6 (14.1-19.1)	46,237	44.5 (40.8-48.2)	41.6 (37.9-45.3)	124,272
Pacific	14.7 (11.2-18.2)	14.1 (10.6-17.6)	19,443	25.9 (21.6-30.2)	28.4 (23.3-33.5)	34,238	21.9 (17.0-26.8)	21.1 (16.4-25.8)	28,965	37.6 (32.7-42.5)	36.4 (31.5-41.3)	49,714
Other	17.8 (10.9-24.7)	20.5 (12.1-28.9)	25,978	31.9 (22.3-41.5)	29.9 (20.9-38.9)	46,590	18.5 (13.0-24.0)	19.6 (13.1-26.1)	26,992	31.7 (23.9-39.5)	30.1 (21.9-38.3)	46,294
Family income												
0-\$20,000	18.2 (15.8-20.6)	17.0 (14.1-19.9)	91,639	24.5 (22.0-27.0)	25.8 (22.5-29.1)	123,583	17.1 (14.9-19.3)	18.4 (15.7-21.1)	86,258	40.2 (37.5-42.9)	38.9 (35.6-42.2)	202,508
\$20,001-\$30,000	14.2 (11.5-16.9)	15.3 (12.0-18.6)	53,932	22.5 (19.4-25.6)	24.0 (20.3-27.7)	85,426	18.7 (15.8-21.6)	19.5 (16.4-22.6)	70,874	44.5 (40.6-48.4)	41.2 (37.1-45.3)	168,801
\$30,001-\$50,000	15.6 (13.1-18.1)	14.0 (11.6-16.4)	83,359	23.7 (21.0-26.4)	22.8 (19.9-25.7)	127,049	20.2 (17.7-22.7)	20.1 (17.6-22.6)	108,264	40.4 (37.3-43.5)	43.1 (39.8-46.4)	216,271
\$50,001+	13.0 (10.6-15.4)	14.6 (10.7-18.5)	114,015	24.4 (21.5-27.3)	23.1 (19.8-26.4)	213,100	20.8 (18.3-23.3)	20.0 (17.3-22.7)	181,491	41.8 (38.1-45.5)	42.2 (37.9-46.5)	365,742

* Adjusted rates are adjusted for age and sex, except when they are age-specific, in which case they are adjusted only for sex; or when they are sex-specific, in which case they are adjusted only for age.
 Note: For further explanation of Tables, see Appendix 2: Notes to Figures and Tables.

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Table 11 (cont)

	Sedentary			Relatively inactive			Relatively active			Highly active		
	% (95% CI)			% (95% CI)			% (95% CI)			% (95% CI)		
	Unadj	Adj*	Pop est	Unadj	Adj*	Pop est	Unadj	Adj*	Pop est	Unadj	Adj*	Pop est
NZDep96 score												
1 (least deprived)	12.5 (10.0-15.0)	12.5 (10.0-15.0)	100,882	24.7 (21.4-28.0)	24.5 (21.2-27.8)	199,666	20.1 (17.2-23.0)	19.6 (16.9-22.3)	162,810	42.8 (38.7-46.9)	43.3 (39.4-47.2)	346,030
2	17.4 (14.7-20.1)	17.7 (14.8-20.6)	122,139	21.5 (19.0-24.0)	21.2 (18.5-23.9)	150,924	18.4 (15.9-20.9)	18.4 (15.7-21.1)	128,819	42.6 (39.1-46.1)	42.7 (39.0-46.4)	298,820
3	15.4 (13.2-17.6)	15.5 (13.3-17.7)	98,146	24.6 (22.1-27.1)	25.0 (22.5-27.5)	156,182	20.0 (17.6-22.4)	20.1 (17.7-22.5)	127,105	40.0 (37.1-42.9)	39.4 (36.5-42.3)	253,879
4 (most deprived)	16.2 (14.2-18.2)	16.7 (14.5-18.9)	110,043	24.6 (22.4-26.8)	24.6 (22.4-26.8)	167,425	18.4 (16.6-20.2)	18.3 (16.5-20.1)	125,022	40.8 (38.4-43.2)	40.4 (38.0-42.8)	276,892
Education												
No qualification	19.5 (17.3-21.7)	19.4 (17.0-21.8)	157,565	23.6 (21.2-26.0)	23.8 (21.3-26.3)	190,939	18.0 (15.8-20.2)	18.7 (16.3-21.1)	145,289	38.8 (36.3-41.3)	38.1 (35.4-40.8)	313,623
School or post-school only	14.1 (12.1-16.1)	14.2 (12.2-16.2)	142,493	22.1 (19.9-24.3)	21.8 (19.6-24.0)	223,901	18.5 (16.5-20.5)	18.1 (15.9-20.3)	187,259	45.3 (42.4-48.2)	45.9 (43.0-48.8)	458,558
School and post-school	13.0 (11.0-15.0)	13.1 (10.9-15.3)	129,105	25.8 (23.3-28.3)	24.8 (22.1-27.5)	256,301	21.0 (18.8-23.2)	20.3 (17.9-22.7)	208,438	40.2 (37.5-42.9)	41.8 (38.9-44.7)	399,077

* Adjusted rates are adjusted for age and sex, except when they are age-specific, in which case they are adjusted only for sex; or when they are sex-specific, in which case they are adjusted only for age.
Note: For further explanation of Tables, see Appendix 2: Notes to Figures and Tables.

Table 12: Reported levels of physical activity, by age and ethnicity, for males: percent (95% confidence intervals)

Males	Sedentary			Relatively inactive			Relatively active			Highly active		
	% (95% CI)		Pop est	% (95% CI)		Pop est	% (95% CI)		Pop est	% (95% CI)		Pop est
	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*
Total	17.1 (15.3–18.9)	17.1 (15.3–18.9)	234,349	21.4 (19.2–23.6)	21.4 (19.4–23.4)	294,704	17.0 (15.2–18.8)	16.9 (15.3–18.5)	233,258	44.5 (42.0–47.0)	44.6 (42.1–47.1)	611,693
Age												
15–24 years	12.7 (8.4–17.0)		33,827	17.8 (12.5–23.1)		47,420	16.4 (12.3–20.5)		43,691	53.0 (46.5–59.5)		141,070
25–44 years	18.8 (16.1–21.5)		104,168	22.9 (19.8–26.0)		127,446	17.3 (14.6–20.0)		95,986	41.0 (37.3–44.7)		227,748
45–64 years	17.7 (14.4–21.0)		65,996	22.4 (18.7–26.1)		83,643	18.8 (15.3–22.3)		70,070	41.2 (36.5–45.9)		153,735
65–74 years	13.5 (9.0–18.0)		15,717	21.0 (15.9–26.1)		24,494	11.5 (7.6–15.4)		13,439	54.0 (47.5–60.5)		62,985
75+ years	23.4 (16.3–30.5)		14,640	18.7 (12.4–25.0)		11,700	16.1 (9.4–22.8)		10,072	41.8 (33.6–50.0)		26,154
Ethnicity												
European/Pākehā	17.6 (15.4–19.8)	17.6 (15.4–19.8)	194,137	20.8 (18.6–23.0)	20.7 (18.5–22.9)	229,652	16.9 (14.9–18.9)	16.9 (14.9–18.9)	187,251	44.7 (42.0–47.4)	44.8 (42.1–47.5)	493,850
Māori	16.5 (12.2–20.8)	20.0 (14.9–25.1)	21,756	15.0 (11.1–18.9)	16.1 (11.8–20.4)	19,730	16.6 (12.7–20.5)	16.5 (12.4–20.6)	21,917	51.9 (46.2–57.6)	47.4 (41.7–53.1)	68,422
Pacific	15.9 (10.4–21.4)	15.3 (10.2–20.4)	10,461	22.0 (16.3–27.7)	26.8 (19.5–34.1)	14,455	23.2 (15.4–31.0)	22.2 (14.4–30.0)	15,239	38.9 (30.9–46.9)	35.7 (28.4–43.0)	25,516
Other	11.2 (3.9–18.5)	15.5 (4.3–26.7)	7,994	43.1 (27.8–58.4)	43.0 (28.7–57.3)	30,867	12.4 (5.0–19.8)	13.8 (4.8–22.8)	8,851	33.4 (21.2–45.6)	27.7 (16.9–38.5)	23,905

* Adjusted rates are adjusted for age.

Note: For further explanation of Tables, see Appendix 2: Notes to Figures and Tables.



Table 13: Reported levels of physical activity, by age and ethnicity, for females: percent (95% confidence intervals)

Females	Sedentary			Relatively inactive			Relatively active			Highly active		
	% (95% CI)		Pop est	% (95% CI)		Pop est	% (95% CI)		Pop est	% (95% CI)		Pop est
	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*	Unadj	Adj*
Total	13.6 (12.0–15.2)	13.5 (11.9–15.1)	196,862	26.2 (24.4–28.0)	26.2 (24.4–28.0)	379,494	21.4 (19.6–23.2)	21.5 (19.7–23.3)	310,499	38.9 (36.7–41.1)	38.8 (36.6–41.0)	563,929
Age												
15–24 years	12.1 (8.2–16.0)		31,756	27.0 (21.9–32.1)		70,770	20.0 (15.7–24.3)		52,316	40.9 (35.2–46.6)		107,114
25–44 years	12.3 (10.1–14.5)		72,007	29.3 (26.6–32.0)		171,576	23.7 (21.2–26.2)		139,215	34.7 (32.0–37.4)		203,451
45–64 years	13.5 (10.6–16.4)		50,823	24.5 (21.0–28.0)		92,279	22.0 (18.7–25.3)		82,837	40.0 (36.1–43.9)		150,885
65–74 years	12.4 (9.1–15.7)		15,808	17.0 (13.3–20.7)		21,762	17.1 (12.6–21.6)		21,817	53.6 (47.7–59.5)		68,529
75+ years	27.1 (20.6–33.6)		26,468	23.6 (18.5–28.7)		23,107	14.6 (10.1–19.1)		14,314	34.7 (28.6–40.8)		33,950
Ethnicity												
European/Pākehā	12.3 (10.7–13.9)	12.0 (10.2–13.8)	143,413	26.1 (23.9–28.3)	26.5 (24.3–28.7)	303,292	21.9 (19.9–23.9)	22.2 (20.0–24.4)	254,311	39.7 (37.3–42.1)	39.3 (36.8–41.8)	461,491
Māori	18.0 (14.7–21.3)	19.6 (15.9–23.3)	26,483	27.6 (23.9–31.3)	27.5 (23.6–31.4)	40,696	16.5 (13.4–19.6)	16.8 (13.5–20.1)	24,320	37.9 (33.6–42.2)	36.1 (31.8–40.4)	55,850
Pacific	13.5 (9.4–17.6)	13.1 (8.6–17.6)	8,982	29.7 (24.0–35.4)	29.8 (23.5–36.1)	19,784	20.6 (15.3–25.9)	20.0 (14.9–25.1)	13,726	36.3 (30.0–42.6)	37.1 (30.0–44.2)	24,198
Other	24.2 (13.0–35.4)	25.2 (13.0–37.4)	17,984	21.2 (13.6–28.8)	17.6 (10.5–24.7)	15,723	24.4 (16.8–32.0)	25.0 (16.0–34.0)	18,142	30.2 (19.6–40.8)	32.3 (20.0–44.6)	22,390

* Adjusted rates are adjusted for age.

Note: For further explanation of Tables, see Appendix 2: Notes to Figures and Tables.

Table 14: Participation in vigorous activity in the last week, by sociodemographic variables: percent (95% confidence intervals)

	Vigorous activity		
	%		Pop est
	(95% CI)		
	Unadj	Adj*	
Total	46.8 (45.0–48.6)		1,322,997
Sex			
Male	48.2 (45.7–50.7)	47.8 (45.3–50.3)	662,590
Female	45.5 (43.3–47.7)	45.8 (43.6–48.0)	660,407
Age			
15–24 years	63.6 (59.5–67.7)	63.5 (59.4–67.6)	336,012
25–44 years	49.8 (47.4–52.2)	49.8 (47.4–52.2)	568,552
45–64 years	42.3 (39.0–45.6)	42.3 (39.0–45.6)	317,563
65–74 years	30.1 (25.8–34.4)	30.1 (25.8–34.4)	73,708
75+ years	16.9 (13.2–20.6)	17.1 (13.4–20.8)	27,162
Ethnicity			
European/Pākehā	45.6 (43.6–47.6)	46.7 (44.7–48.7)	1,033,860
Māori	52.3 (48.2–56.4)	46.8 (42.7–50.9)	145,971
Pacific	59.0 (53.9–64.1)	52.3 (46.8–57.8)	78,054
Other	44.6 (36.0–53.2)	42.7 (33.3–52.1)	65,112
Family income			
0–\$20,000	37.0 (34.1–39.9)	44.9 (40.8–49.0)	186,578
\$20,001–\$30,000	41.8 (38.1–45.5)	44.2 (40.1–48.3)	158,592
\$30,001–\$50,000	44.7 (41.4–48.0)	43.6 (40.1–47.1)	238,988
\$50,001+	54.9 (51.4–58.4)	51.6 (47.5–55.7)	479,898
NZDep96 score			
1 (least deprived)	51.0 (46.9–55.1)	50.7 (46.8–54.6)	412,909
2	43.7 (40.2–47.2)	44.7 (41.2–48.2)	305,920
3	44.3 (41.2–47.4)	44.0 (40.9–47.1)	281,547
4 (most deprived)	47.5 (45.0–50.0)	46.3 (43.8–48.8)	322,622
Education			
No qualification	38.2 (35.7–40.7)	40.6 (37.9–43.3)	308,599
School or post-school only	47.8 (45.1–50.5)	46.5 (43.8–49.2)	484,179
School and post-school	52.8 (49.9–55.7)	52.1 (49.2–55.0)	524,665

* Adjusted rates are adjusted for age and sex, except when they are age-specific, in which case they are adjusted only for sex, or when they are sex-specific, in which case they are adjusted only for age.

Note: For further explanation of Tables, see Appendix 2: Notes to Figures and Tables.

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