



Walking for transport

Household Travel Survey

v1.0 Nov 2008

The New Zealand Household Travel Survey is an ongoing survey of household travel conducted for the Ministry of Transport. Each year, people in over 2 000 **households** throughout New Zealand are invited to participate in the survey by recording all their **travel** over a two-day period. Each person in the household is then interviewed about their travel and is also asked about their alcohol consumption and other travel-related information.

This fact sheet looks at walking by New Zealanders – who walks, where to, and how the patterns have changed over time. Note that this travel survey captures walking on the road / footpath environment; off-road activities such as tramping and walking around the farm or shopping centre are not included in these estimates. This fact sheet uses data from 14 070 people in 5 723 households, collected between July 2003 and June 2007. The information will be updated as new data become available.

Words shown in **blue** are defined in the glossary at the end of this sheet. Click on the word or phrase to go directly to the glossary.

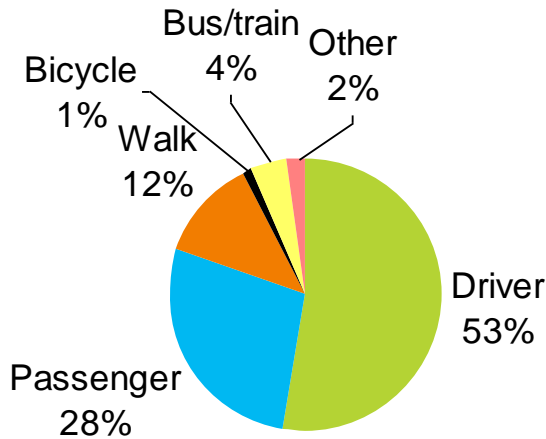
Highlights

- Walking makes up 12% of total time travelled and 16% of the number of **trip legs**.
- Children aged 5 – 14 walk and cycle less than they used to: they averaged over 2 hours per week in 1997/1998 and about one and a quarter hours per week in 2004 – 2007.
- On average women spend more time walking more than men, walking 66 minutes per person per week, compared to 54 minutes per person per week for men.
- Those aged 15 – 24 years walk the most of any age group at 1.5 hours per person per week.
- People with no car **driver licence** spend far more time walking per person per week than those with one, for all age groups.
- People in households with no car spend 157 minutes per person per week walking, compared to 65 minutes per person per week or less for those in households with one car or more.
- On an average surveyed day, 75% of people reported no walking (walking on private property (e.g. farms) or tramping is not included).
- Walking by those aged 5-14 years has decreased from 1.5 hours per person per week in 1989/90 to 1.1 hours per person per week in 2003-06.

Share of transport

Figure 1: Overall mode share

a) Share of total travel time



b) Share of trip legs

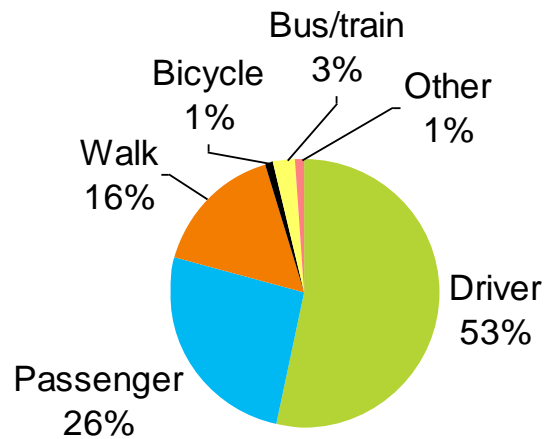


Figure 1 shows each **travel mode's** share of the total travel time and trip. It can be seen that walking makes up 12% (about one eighth) of total time travelled and 16% (one sixth) of the number of trip legs. Walking distance has been imputed from time spent walking, using a conversion factor of 4.4 km/h. This is based on work done by Carolyn O'Fallon and Charles Sullivan (O'Fallon and Sullivan, 2004) using a sample of walking trips from the 1997/98 Household Travel Survey.

Table 1: Mode share of time, distance and trip legs

Travel mode	Trip legs in sample	Million hours per year	Million km per year	Million trip legs per year
Drivers	64 248	895	33 400	3 590
Passengers	31 951	472	18 900	1 760
Walking	18 753	209	920 ¹	1 080
Bus passenger	2 366	66	1 700	150
Bicycle	1 987	21	250	86
Taxi passenger	465	7	180	24
Train	315	11	See note	19
Other modes ²	636	25	See note	43
Total	120 721	1 706	55 400	6 760

Note: Distance estimates are available for road-based modes only. Totals may not add exactly due to rounding.

Overall New Zealanders spend 209 million hours per year walking. Cycling is less common, making up 21 million hours per year, 250 million km per year and 86 million trip legs per year.

Mode share by age group

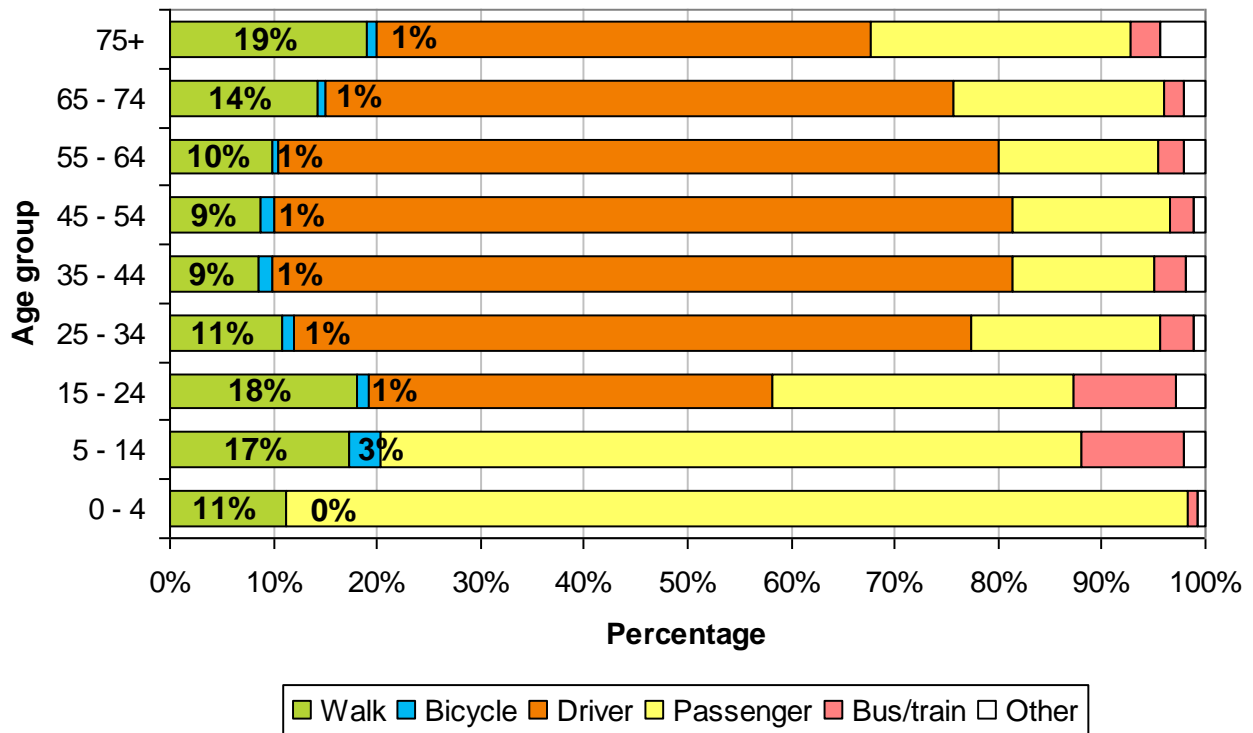
Figure 2 shows travel patterns for various age groups. School-aged children, young adults and older road users were the most likely to choose active travel modes (walking and cycling). People 5-14 years old and 15-24 years old spend about 18% of their time walking and those 75 years old and over

¹ This distance is imputed from a walking speed of 4.4km/h.

² 'Other' includes travel by air and sea as well as uncommon land modes e.g. riding horses or mobility scooters.

spend 19% of their time walking. Those 5-14 years old also spend the greatest percentage of their time cycling, at 3%. People aged 35 – 64 were the most car-dependent, with 10% or less of their total travel time spent walking or cycling.

Figure 2: Mode share (percentage of total time spent travelling by each mode of travel)



Age groups and gender

As shown in Figure 1, walking makes up 12% of New Zealanders' total travel time and 16% of total trip legs. Women spend on average 66 minutes per person per week walking, whereas men spend approximately 54 minutes per person per week walking.

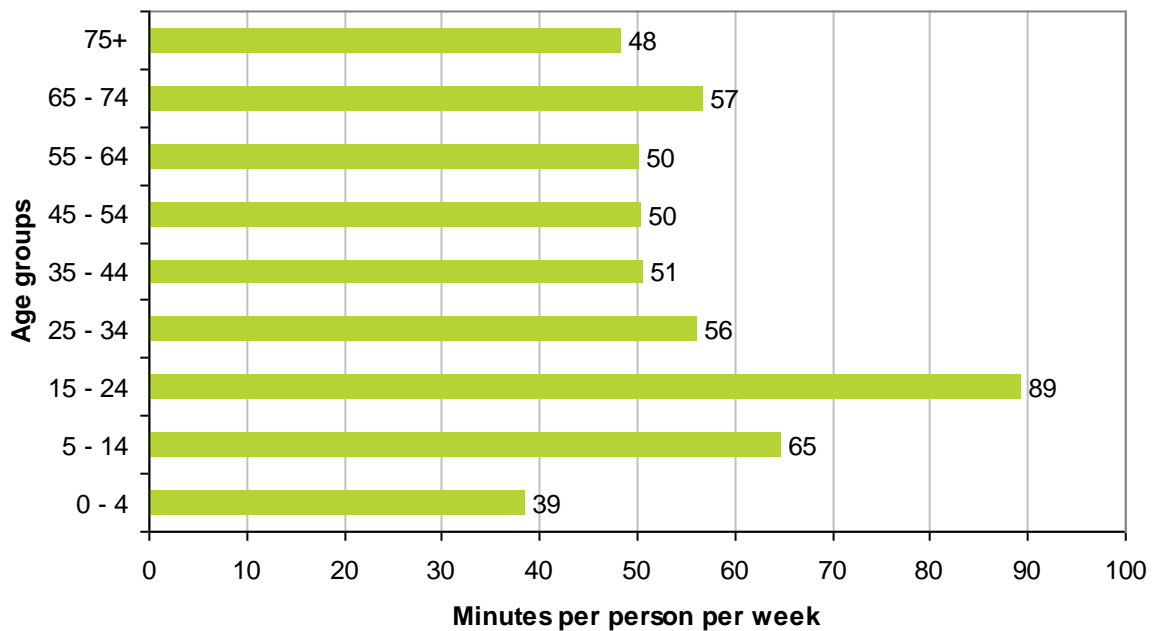
Table 2 shows the amount of time spent walking by gender and age group. Women aged 15-24 years old walk the most, at approximately one hour forty six minutes per person per week. On the whole, over the ten year age groups shown, women spend more time per person per week walking than men, unless over 65 years old or under 15 years old.

Table 2: Walking trips by age group and sex

Age group	Females			Males		
	Million trip legs per year	Million hours per year	Hours per person per week	Million trip legs per year	Million hours per year	Hours per person per week
0-4	21	4	0.6	25	5	0.7
5-14	89	17	1.1	84	17	1.1
15-24	123	27	1.8	98	19	1.2
25-34	83	15	1.0	67	12	0.9
35-44	88	17	1.0	64	11	0.7
45-54	81	15	1.1	50	9	0.6
55-64	55	10	0.9	44	8	0.8
65-74	34	6	0.8	31	7	1.1
75+	24	5	0.7	19	4	1.0
Total	599	116	1.1	483	93	0.9

Looking at the overall profile, people in the 15 - 24 year age group spend the most time walking (1 hour 29 minutes per week, Figure 3). This is followed by the 5-14 year olds at 1 hour and 5 minutes per person per week and the 65-74 year olds at 57 minutes per person per week.

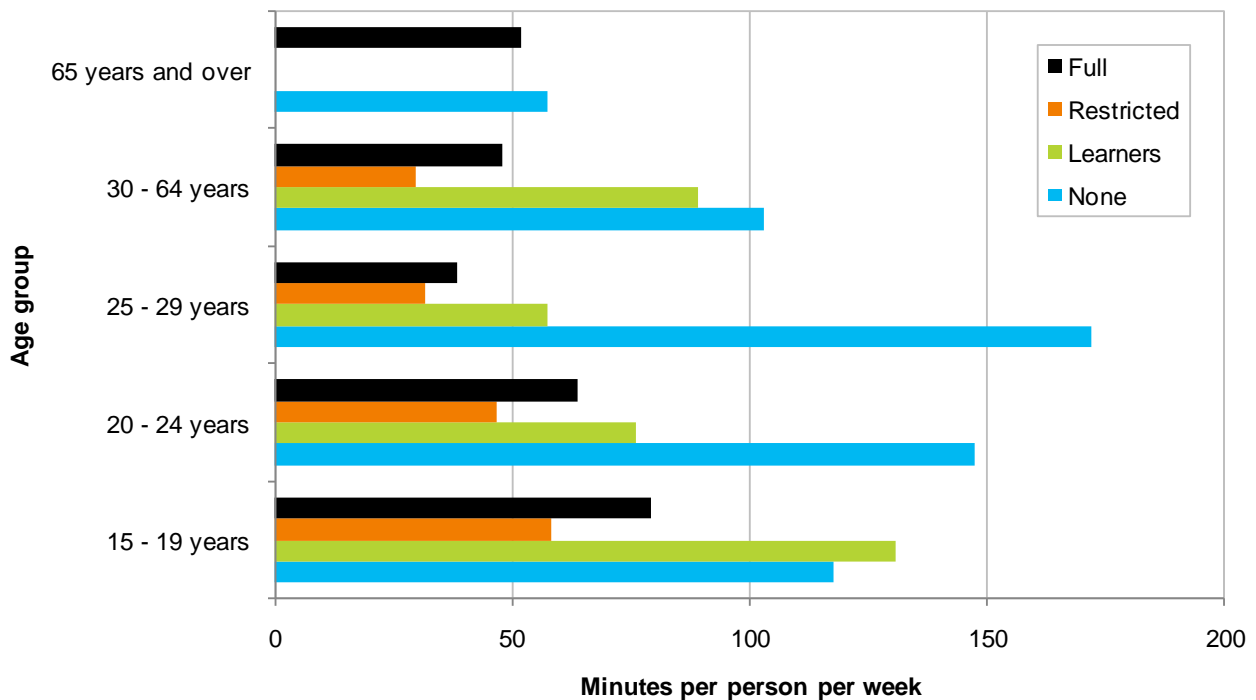
Figure 3: Time spent walking each week per person by age group



Availability of vehicles

People without a **driver licence** or with only a learner licence spend substantially more time walking than those who can drive more freely. Figure 4 compares holders of different classes of car drivers licence with non-holders for various age groups.

Figure 4: Time spent walking by age (over 15 years only) and car driver licence held. ³

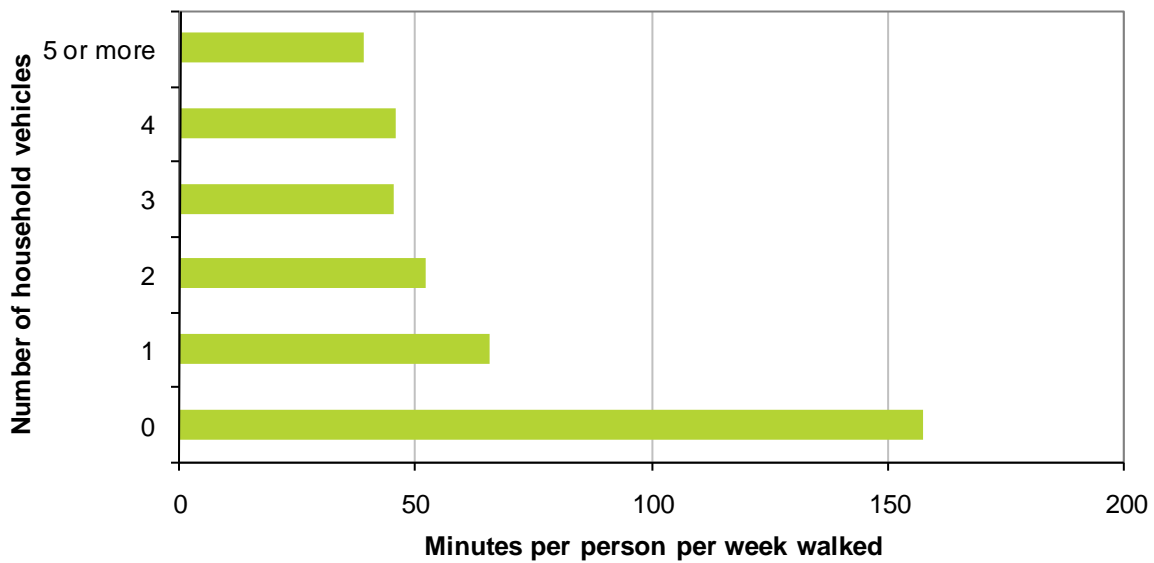


Generally people over 25 years old and with a licence walk for less than an hour a week, whereas those without a licence walk more than an hour a week. Those who walk most are those with no licence and are aged between 20 and 29 years old (over 2 hours 20 per person per week). Those who walk least are restricted or full licence holders aged between 25 and 64 years old (about 30 minutes per person per week).

Walking patterns can also be examined in term of vehicles per household. As seen from Figure 5, those in a household with no vehicles spend nearly 3 hours per person per week walking. This rate decreases rapidly for households with vehicles, as this rate has more than halved to a little over an hour per person per week for households with one vehicle and is a little over 40 minutes per person per week for households with more than 2 vehicles.

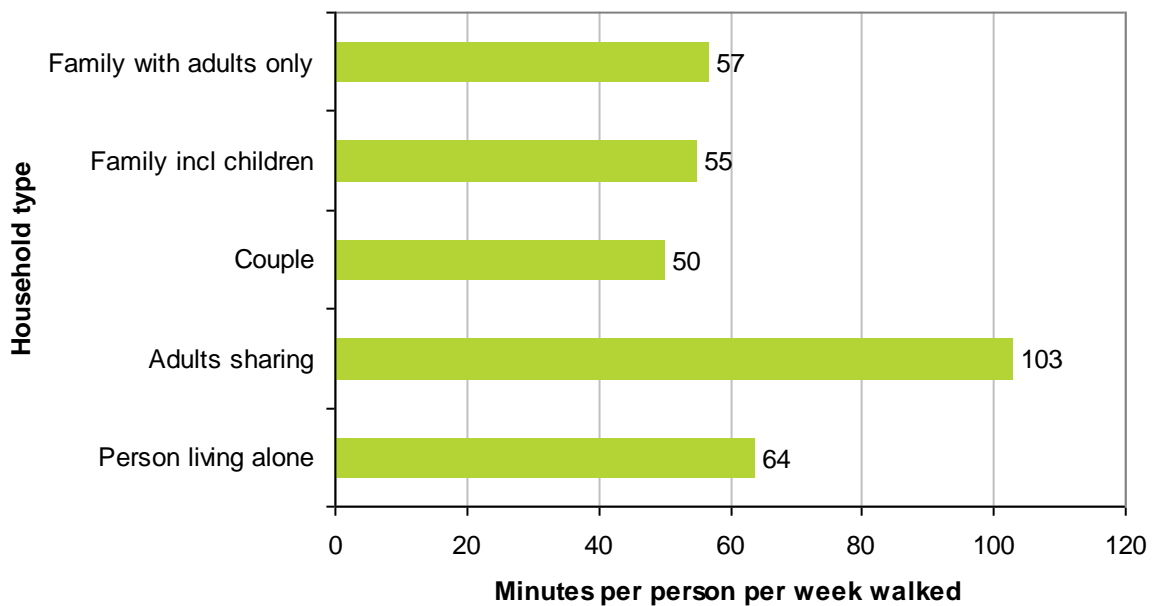
³ Learner and restricted driver data has not been displayed where the number of drivers surveyed in that age group was too small to study (less than 60 people).

Figure 5: Time spent walking by the number of household vehicles.



Family/household structure

Figure 6: Time spent walking by household type



Adults in shared accommodation spend the most time walking (1 hour 43 minutes per person per week, Figure 6), followed by people living alone (1 hour 4 minutes per person per week). Families living together (including families with adult children), and couples walk least (around 50 minutes per person per week).

Urban/rural resident differences

Table 3: Time spent walking by age and area of residence.

Age group (years)	Minutes walked per person per week	
	Cities	Towns & rural areas
0-4	34	52
5-12	57	48
13-17	114	77
18+	63	39

There is also a significant difference in the amount of walking done per person per week depending on whether the person is based in a city or in a town or rural area (Table 3). Once over 5 years old, those in cities of over 30 000 people or more walk a great deal more than those outside. Primary school aged city children walk for nearly an hour each per week, whereas the town and country children reported walking for approximately three quarters of an hour per week. A similar time separation exists between high school aged children in cities and those in towns and rural areas. This difference is less marked once over 18 years old.

It should be noted that this survey is confined to walking on roads, footpaths and public walkways, and does not include walking on farms or private property. Hence it should be taken as indicative of the lower limit of rural walking as a form of travel.

Trip purpose / destination

For each unit of travel recorded, the respondent is asked about his or her destination or the purpose of the trip leg. These responses are coded into the categories shown in Table 4. 'Home' is used for the return leg of all travel; the categories shown include only travel to the stated destination types.

Table 4: Walking trips by purpose/destination and age.

Age group	Purpose/destination	Trip legs in sample	Trip legs in year (million)	Time spent walking per year (million hrs)	(mean) Time spent walking per trip leg (minutes)	% time walking excluding trips home
0-17 years	Return home	1 651	98.3	23.4	10	
	Work	74	Sample too small	Sample too small	Sample too small	3%
	Education	790	50.7	10.5	10	28%
	Shopping/Personal business	418	26.5	4.4	13	12%
	Social visits	560	33.4	6.6	10	18%
	Recreational	445	22.6	5.3	10	14%
	Change mode of travel	544	32.1	4.1	5	11%
	Accompany or transport someone	599	30.2	4.9	5	13%
	Age group total	5 081	298.2	60.3	52	100%
18-64 years	Return home	2 473	151.7	33.9	10	
	Work	1 642	98.9	15.0	5	17%
	Education	255	23.7	6.5	10	7%
	Shopping	1 611	94.7	15.1	5	17%
	Personal business	660	38.0	6.1	5	7%
	Social visits	1 163	70.4	12.3	5	14%
	Recreational	1 231	66.3	20.3	15	22%
	Change mode of travel	1 641	101.5	12.1	5	13%
	Accompany or transport someone	339	21.0	3.4	7	4%
Age group total	11 015	666.2	124.8	67	100%	
65+ years	Return home	772	36.4	9.3	10	
	Shopping	497	21.2	3.3	5	26%
	Personal business	246	10.4	1.2	5	10%
	Social visits	208	9.1	1.7	7	13%
	Recreational	424	18.4	5.3	15	41%
	Change mode of travel	270	10.9	1.3	5	10%
	Accompany or transport someone	33	Sample too small	Sample too small	Sample too small	2%
	Age group total	2 450	107.9	22.3	52	100%

In the above table walking may not have been the only travel mode used in achieving the final destination (as shown by the high percentage of trips related to 'change mode of travel'), however only the time and distance spent walking has been included in the table. It should also be noted that (as stated above) the purpose of a trip leg is dictated by what was done at the end of that leg. This means that a walk home from work in which there is a stop to buy a paper will be coded as 2 trip legs, the first of which has a purpose of *shopping* and the second as *return home*. (Work is in progress to link trip legs into chains).

The category of **change mode** relates to those trip legs which are for the purpose of getting to another form of transport. This covers trips such as travel to catch public transport e.g. walking to the bus stop or driving to a station to catch a train. It can also include walking back to the car after doing errands.

From Table 4, the three broad age groups show quite different priorities in terms of walking trip purpose. In the 0-17 year old age group, the primary purpose of walking trips is education i.e. walking to school (28%). In the 18-64 year old age group, the priority has shifted and is spread amongst recreation (22%), work (17%) and shopping (17%). In the 65 years and over age group, recreation is the dominant reason for walking (41%), followed by shopping (26%).

Examining the time per trip leg for each of the trip purposes, the patterns are similar for each of the age groups. The longest trip legs are for recreational purposes, including “going for a walk”: 10 min for 0-17 year olds, 15 min for 18-64 year olds and 15 minutes for those 65 years and older. The shortest trips are those for changing mode of transport (5 minutes for all age groups).

Percentage of time spent walking by trip purpose is examined in more detail in Table 5. Overall, both shopping and recreation make up increasing percentages of walking time as the walkers increase in age. Work and education show distinct peaks: education at 5-14 years and work at 25-34 years, but tailing off more gradually. Walking for the purposes of social visits or changing travel mode are more constant and show no particular trends.

Table 5: Percentage of time spent walking by trip purpose and age (excluding the final trip for the purpose of going home).

Trip purpose / destination	Age group (years)									Total
	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75+	
number of people sampled in age group	930	3 034	3 135	2 467	2 548	2 280	1 875	1 532	950	18 751
Work	0%	2%	9%	21%	19%	17%	13%	3%	0%	12%
Education	3%	38%	25%	4%	1%	1%	2%	0%	0%	12%
Shopping	7%	7%	17%	16%	14%	16%	20%	22%	30%	16%
Personal business	1%	2%	6%	7%	7%	8%	5%	7%	13%	6%
Social visits	16%	18%	18%	14%	12%	14%	10%	14%	11%	15%
Recreational	22%	13%	8%	19%	26%	31%	37%	42%	37%	22%
Change mode of travel	4%	12%	15%	13%	15%	11%	12%	10%	9%	12%
Accompany or transport someone	48%	9%	1%	6%	7%	2%	1%	2%	0%	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

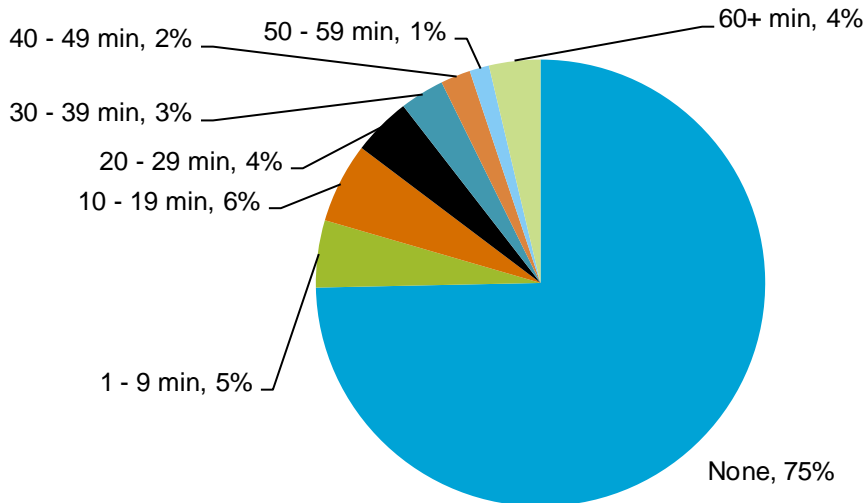
Note: Due to rounding, some columns may not add to precisely 100%.

- For children under 5 years old, the main travel purpose is dominated by accompanying someone else (48%).
- For children 5 – 14 years old, the main purpose is for education (38%) followed by social visits (18%) and recreation (13%).
- For people aged 15 – 24, the main purpose is for education (25%).
- For people aged 25 – 34, work is highest priority (21%) followed by recreation (19%), shopping (16%), and social (14%).

- For those aged 35 – 54, recreation becomes highest and increases from 26% to 31%. Work decreases from 19% – 17%.
- For those aged 55 – 74, recreation stays highest and climbs from 37% to 42%.
- For those aged over 75 years, the dominant trip purposes are shopping (30%) and recreation (37%).

Daily time spent walking

Figure 7: Percentage of people who spent the given time walking on any given day.



If the full set of people surveyed is examined, 75% of people reported not walking on a given day. This is followed by 10-19 minutes in a day (6%), 1-9 minutes in a day (5%), 20-29 minutes in a day (4%) and over 60 minutes in a day (3%).

Examining the non-walkers in more detail, we find that 63% of people reported no walking in the 2 days surveyed. Males were more likely to not have walked at all in the two days (66%) than females (59%). There were also differences based on age as only 56% of children (under 18 years old) reported no walking in the two days. Adults were least likely to walk. 69% of male adults and 61% of female adults reported no walking.

There is also variation depending on whether people are based in a **major urban centre**, **secondary urban centre** or **rural area**. People based in major urban areas such as cities are more likely to walk (only 60% didn't walk at all in the 2 days), secondary urban areas (smaller towns) are intermediate (66% didn't walk), and those in rural areas are least likely to have walked (69%). As stated in the introduction though, this survey covers travel on the road / footpath environment, so walking on private property (e.g. farms) or tramping are not included.

Table 6: Percentage distribution of time spent walking per person per day of those who walked.

Time spent walking	Age (years)						All ages
	0-14	15-29	30-44	45-59	60-74	75+	
1-9 min	21%	17%	20%	22%	15%	13%	19%
10 - 19 min	26%	20%	23%	22%	22%	26%	23%
20 - 29 min	19%	17%	15%	15%	16%	17%	17%
30 - 39 min	12%	13%	12%	13%	13%	18%	13%
40 - 49 min	8%	8%	8%	9%	11%	8%	9%
50 - 59 min	4%	6%	6%	6%	6%	6%	6%
60+ min	10%	18%	17%	14%	17%	11%	15%

From Table 6, the most common amount of time spent walking a day is 10-19 minutes for all age groups. The next most common is 1-9 minutes (ages 0 – 14, 15 – 19, 30 – 44 years and 45 – 59 years), 20-29 minutes (ages 15-29 years and 60-74 years) or 30-39 minutes for those over 75 years.

Figure 8: Time spent walking by personal income

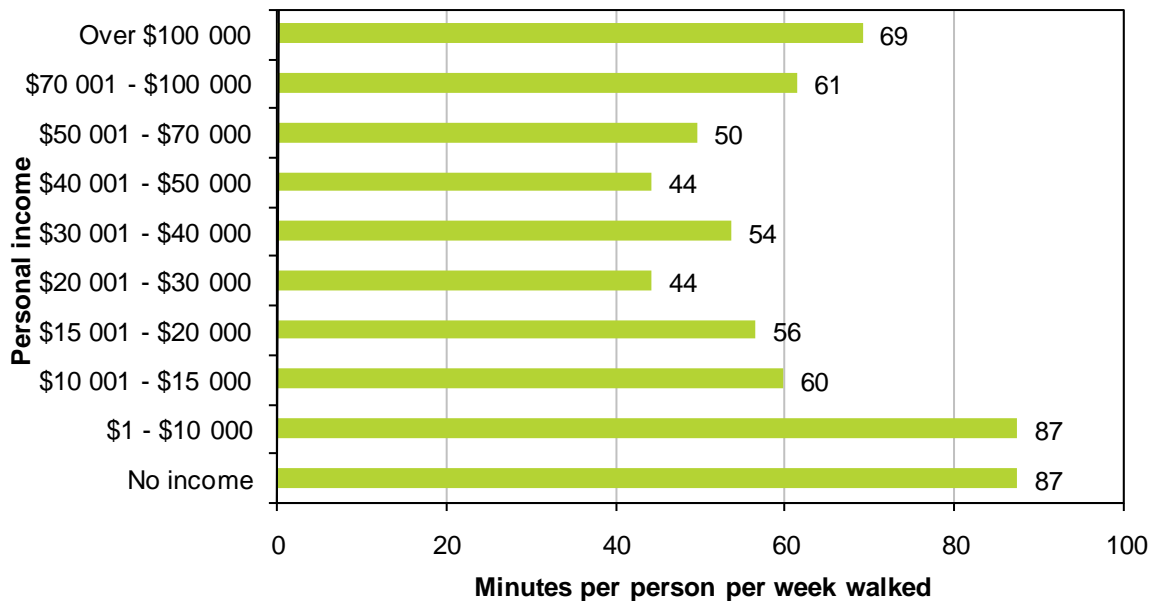


Figure 8 shows time spent walking by personal income, for people aged 16 years and over. From the graph, the majority of walking is done by those with under \$10 000 per year income (87 minutes per person per week respectively). The group to do the next most walking is those with income over \$100 000 per year (69 minutes per person per week). Those who spend the least time walking are those in the \$20 000 - \$30 000 (44 minutes per person per week), \$40 000 - \$50 000 (44 minutes per person per week) and \$50 000 - \$70 000 (50 minutes per person per week) income groups.

Trends in walking

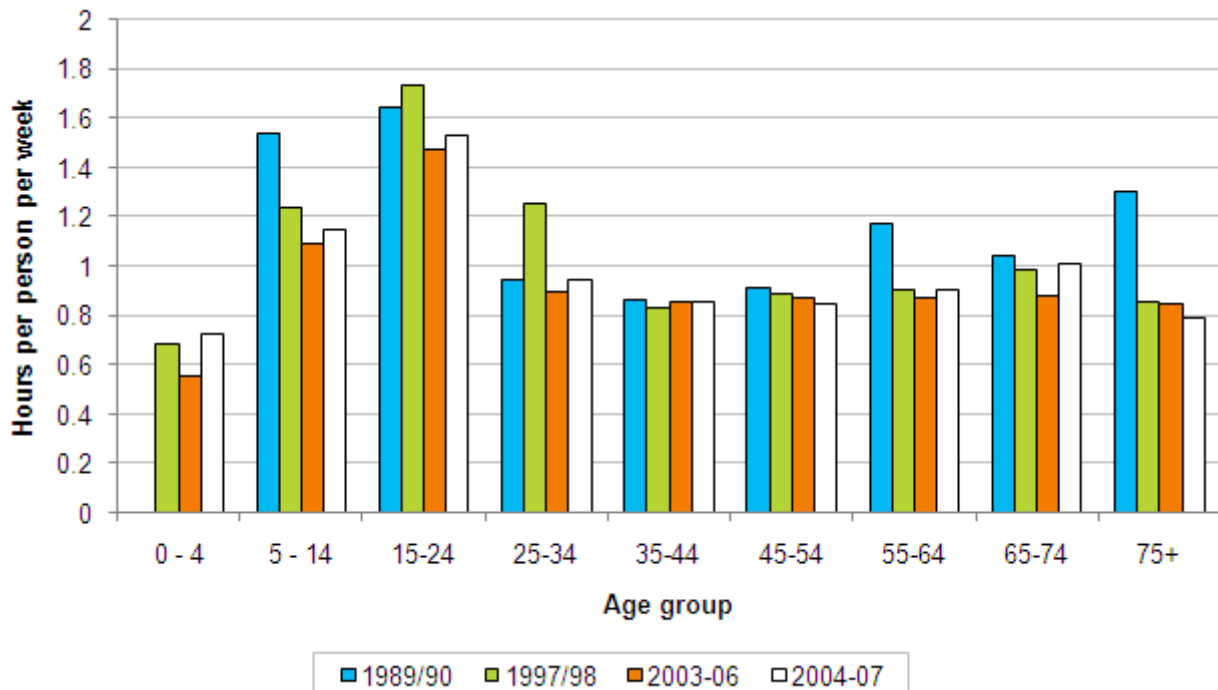
Table 7: Trends in hours spent walking each week per person by age group

	1989/90	1997/98	2003-06	2004-07
Age group	Estimated hours walking per week	Estimated hours walking per week	Estimated hours walking per week	Estimated hours walking per week
0-4 [#]	#	0.7	0.6	0.7
5-14	1.5	1.2	1.1	1.1
15-24	1.6	1.7	1.5	1.5
25-34	0.9	1.3	0.9	0.9
35-44	0.9	0.8	0.9	0.9
45-54	0.9	0.9	0.9	0.8
55-64	1.2	0.9	0.9	0.9
65-74	1.0	1.0	0.9	1.0
75+	1.3	0.8	0.8	0.8
Total	#	1.1	1.0	1.0
Total 5 or over	1.2	1.1	1.0	1.0

[#]Children aged 0-4 were not surveyed in 1989/90.

The only statistically significant change in the time per person spent walking has occurred in the 5-14 age group, where it has decreased from about 1.5 hours per week on average to about 1.1 hours per person per week. No consistent trend in the amount of time spent walking is visible across the other age groups (Table 7 and Figure 9).

Figure 9: Historical time series of time spent walking per person per week.



References:

O'Fallon & Sullivan (2004). Trip chaining: understanding how New Zealanders link their travel. Transfund Research Report, September 2004.

Additional information:

Transport Monitoring Indicator Framework

<http://www.transport.govt.nz/transport-monitoring-indicator-framework/>

Pedestrian fact sheet (pedestrians involved in motor vehicle crashes)

<http://www.transport.govt.nz/pedestrians-1/>

Comparing Modes Fact Sheet for information about travel to school and travel to work. Regional results. (in preparation)

<http://www.transport.govt.nz/latest-results-1/>

For more information about the background to the survey see the Ministry of Transport website at www.transport.govt.nz/ongoing-travel-survey-index/

Glossary

Driver: in this fact sheet includes all vehicle drivers including motorcyclists and taxi drivers.

Driver licences: New Zealand operates a graduated licence system. Holders of a learner licence must be accompanied by a qualified person at all times while driving. Restricted licence holders may drive unaccompanied but not at night or with passengers unless accompanied by a qualified person. For further information see <http://www.landtransport.govt.nz/factsheets/index.html>.

Household: group of people living at the same address, sharing facilities but not necessarily financially interdependent. May be an individual, couple, family, flatmates or a combination of these (e.g. family plus boarder).

Household types:

Family includes any configuration: multi-generational, cousins, step parents, de facto partners with own, step or foster children, same sex partners with children etc. This is further divided into *Family with adults only* and *Family including children*.

Couple includes same sex couples.

Adults sharing includes couples living with boarders or flatmates.

Person living alone

Journey: a series of one or more trip legs where the only intermediate stops are to change to another mode.

Major urban centre: a very large urban area centred on a city or major urban centre. This uses the Statistics New Zealand criteria of an urban centre with a population of 30 000 or more and includes satellite areas eg Kapiti, Cambridge.

Passenger: passenger in a private vehicle (car, van, ute, SUV, truck, or motorcycle). Passengers in buses, trains and taxis are coded under those categories. Aircraft and boat passengers are included in the 'Other' category.

Rural area: areas with a population of less than 9999 people. (Statistics NZ definition).

Secondary urban centre: An urban centre with a population of 10 000 – 29 999 (Statistics NZ definition).

Towns and rural: this uses the Statistics New Zealand criteria of an urban centre between 10 000 – 29 999 or a rural area with a population of less than 10 000, including satellite areas.

Travel: includes all on-road travel by any mode; any walk which involves crossing a road or walking for 100 metres or more along a public footpath or road; cycling on a public road or footpath; some air and sea travel. Excludes off-road activities such as tramping, mountain biking, walking around the mall or around the farm.

Travel mode: the method of travel. Includes vehicle driver, vehicle passenger, pedestrian, cyclist, motorcycle rider or passenger, bus or train passenger, ferry or aeroplane passenger and so forth.

Trip distance: For road-based trips, distances are calculated by measuring the distance from the start address along the roads to the finish address. If an unusual route was used, the interviewer records an intermediate point to indicate the route; otherwise, the journey is assumed to follow the quickest available route.

Trip leg: a single leg of a journey, with no stops or changes in travel mode. For example, driving from home to work with a stop at a shop, is two trip legs; one ending at the shop and one ending at work. This does not include trips where people walk less than 100m without crossing a road, trips on private property that start and end at the same place without crossing a road, and off-road round trips.

Trip purposes / destinations:

Return home includes any trip to the home address or any trip returning to the place they are going to spend the night.

Work includes travel to main place of work, travel to any other jobs and travel done for work purposes.

Education is for travel by students only and includes institutions such as primary and secondary schools, universities etc. It does not include preschool education such as kindergarten, Play centre, crèche, kōhanga reo etc which are included under *social visit / entertainment*.

Shopping is entering any premises that sells goods or hires them for money. A purchase need not be made.

Social visit / entertainment includes entertainment in a public or private place e.g. eating out at a restaurant or food court, picnics etc.

Recreational includes active or passive participation in sporting activities and travel for which the main goal is exercise.

Personal business includes stops made to transact personal business where no goods were involved. This includes stops made for medical or dental needs and for dealing with government agencies involved with social welfare.

Accompany or transport someone covers when the reason of the travel is to go somewhere for someone else's purpose.

Change mode of travel covers when the purpose of the stop was only to change to another mode of transport.

Walk: Includes walkers, joggers, users of mobility scooters and children on tricycles.

Work: Employer's business: includes work-related travel other than to and from work (e.g. travelling to meetings or clients).

Prepared by the Transport Monitoring team of the Ministry of Transport, November 2008.