A National Survey of Children and Young People's Physical Activity and Dietary Behaviours in New Zealand: 2008/09

Key Findings

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Authors

The report was written by Dr Ralph Maddison, Maria Turley, Nicola Legge and Galina Mitchelhill. Statistical analyses were conducted by Dr Yannan Jiang and Sindy Xian.

Glossary of terms and abbreviations

Accelerometer	Movement device used to measure physical activity
Body mass index (BMI)	Measure of height adjusted for weight – calculated by dividing weight in kilograms by height in metres squared (kg/m^2). Used to classify body size as underweight, normal, overweight or obese
CAPI	Computer-assisted personal interview
CATI	Computer-assisted telephone interview
Children	Defined as those aged 5 to 9 years
Confidence interval	Used to estimate the sample error for estimates
CYP	Children and young people (aged 5 to 24 years)
DHQ	Dietary habits questionnaire
Electronic media use	Collective term for the time spent watching television, playing computer or video games and computer use
Level of deprivation	Lay term used to describe the 2006 New Zealand Deprivation Index (NZDep2006). NZDep2006 is an area-based index of deprivation that measures levels (deciles or quintiles) of socioeconomic deprivation. In this report, quintiles of deprivation were used (1=least deprived 20% of areas; 5=most deprived 20% of areas)
LPA	Light-intensity physical activity, defined as less than 3 METs
MARCA	Multi-media Activity Recall for Children and Adolescents – a computerised time use instrument to collect data on all activities (including physical activity and sedentary behaviours) over the past day
MPA	Moderate-intensity physical activity, defined as 3.0-5.9 METs
MVPA	Moderate- to vigorous-intensity physical activity, defined as greater than or equal to 3 METS

Meshblock	The smallest geographic unit for which statistical data is collected and processed by Statistics New Zealand. A meshblock is a defined geographic area, varying in size from part of a city block to large areas of rural land. Each meshblock abuts against another to form a network covering all of New Zealand including coasts and inlets. Meshblocks are aggregated to define larger geographic areas, such as regions and urban and rural areas. Meshblocks were the primary sampling unit (PSU)
MET	Metabolic equivalents are multiple of resting metabolic rate. One MET is equivalent to rest. METs are used to classify the intensity of physical activity (light-intensity <3 METs; moderate-intensity 3-5.9 METs; vigorous-intensity ≥6 METs)
n	Size of sample
NZEO	New Zealand European and Other ethnic group
Prevalence	The proportion of a population with a specific condition. Calculated by dividing the number of participants in the survey with a specific condition by the total number of participants in the survey. Usually expressed as a percent
PSU	Primary sampling unit
SEM	Standard error of the mean
SEP	Standard error of the proportion
Stadiometer	Device for measuring height
VPA	Vigorous-intensity physical activity, defined as 6 or more METs
Young people	Defined as those aged 10 to 24 years

Executive Summary

This National Survey was commissioned by Sport and Recreation New Zealand, the Ministry of Health, the Ministry of Education, and the Ministry of Youth Development. The primary objective was to assess the physical activity, sedentary behaviours and dietary habits of New Zealand children and young people. Also assessed were children and young peoples' awareness of initiatives that encourage health eating and physical activity, attitudes towards healthy eating and physical activity, their knowledge of what it means to eat healthily and be physically active, and the perceived benefits of healthy eating and physical activity. Face-to-face interviews with follow-up telephone calls were conducted with a nationally representative sample of 2,503 participants aged 5 to 24 years.

Main Findings

Awareness, attitudes, and knowledge

- Approximately half (52.4%) of the young people recalled at least one advertisement or campaign encouraging them to eat healthily. The '5 Plus A Day' campaign was the campaign most frequently recalled (29.0%).
- More than half (56.2%) of young people recalled at least one advertisement or campaign encouraging physical activity, with the 'Push Play' campaign most frequently recalled (39.6%).
- Over one-third (37.6%) of young people said they cared *'very much'* about eating healthily, while just under two-thirds (62.3%) said they cared *'very much'* about staying fit and being physically active. Findings indicate that attitudes toward eating healthily may be linked to attitudes held about being fit and physically active.
- The majority of young people (80%) said that *'eating fruit and vegetables'* was part of eating healthily. The most frequently (64%) cited benefit of eating healthily was that *'you have more energy'*.
- Sport and other forms of exercise were recognised by young people as physical activity.
- Among young people aged from 10 to 18 years, just over half (53.7%) said that at least 60 minutes per day of physical activity was needed by people their age to stay healthy, with a further 7.1% agreeing that 60 minutes per day on 5 days per week was needed. (New Zealand Physical Activity Guidelines state that children and young people (aged 5 to 18 years) should, throughout each day, undertake 60 minutes or more of moderate- to vigorous-intensity physical activity).
- Seven out of ten (70.5%) young people aged 18 to 24 years said that at least 30 minutes per day of physical activity was needed by people their age to stay healthy, with a further 21.6% saying this was the case 5 days a week. (Adult New Zealand Physical Activity guidelines (for 18 year olds and over), recommend at least 30 minutes of moderate-intensity physical activity on most (5), if not on all, days of the week).
- The most frequently (53.6%) reported benefit of being physically active among young people was that *'you have more energy'*. This was also the most commonly reported benefit of eating healthily (64.0%).

Body Size

- Most children and young people (60.6%) were found to have a healthy weight for their height. The remaining children and young people were either overweight (22.5%), obese (13.0%) or underweight (3.9%).
- The prevalence of obesity did not vary significantly by gender or age group, with the exception of females aged 20 to 24 years, who were more likely to be obese than males in the same age group.
- The prevalence of obesity increased as the level of deprivation increased.

Dietary Habits

- Most children and young people (68.6%) met the guideline for fruit intake (≥2 servings per day); however fewer than half (39.7%) met the guideline for vegetable intake (≥3 servings per day) and only one-third (31.7%) met the guideline for total fruit and vegetable intake (≥5 servings per day).
- Children and young people living in rural areas were significantly more likely to meet all three guidelines for fruit and vegetable intake than those living in urban areas.
- Nearly all children and young people ate bread every day, with half (50.3%) eating brown, wholemeal or whole grain bread most often.
- Consumption of foods high in fat, sugar and/or salt tended to increase with age. For example, consumption of fast foods, meat pies or sausage rolls, and confectionery increased with age.
- Water was the mostly commonly consumed drink, with most (85.1%) children and young people drinking plain (unflavoured) water seven or more times a week.
- Nearly two-thirds (62.5%) of children and young people drank plain milk at least once a week, including 24.2% who drank plain milk seven or more times a week.
- Water and milk consumption decreased with age, whereas consumption of soft drinks increased with age.
- Overall 78.7% of children and young people usually ate breakfast on five or more days of the week, although breakfast consumption declined steadily as age increased.
- Four out of five (81.2%) children and young people ate their evening meal sitting down with other members of the household most (five or more) days of the week.
- One in three (34.2%) children and young people ate their evening meal in front of the TV on most (five or more) days of the week.
- Home was the predominant source of all meals, with over 93% of children and young people sourcing their breakfast and dinner from home and 87% sourcing their lunch from home.
- Just over one-third (36.9%) of children and young people aged 10 to 24 years were doing nothing about their weight, 33.4% were trying to lose weight, 20.1% were trying to stay the same weight, and 9.6% were trying to gain weight.

Physical Activity

- On average, children and young people participated in 105 minutes per day of moderate- to vigorous-intensity physical activity (MVPA), with more time, on average, spent in MVPA on weekdays (104 minutes) compared with weekend days (66 minutes).
- There was an age-related decline in physical activity levels, with males generally being more active than females.
- Two-thirds (67.1%) of children and young people complied with the physical activity guidelines.
- The proportion of children and young people meeting the physical activity guidelines decreased with age. Only 15% of young people aged 20 to 24 years met the guidelines, which is based on accumulating 30 minutes of MVPA per day.
- On average, children and young people spent 29 minutes per day in organised sport and 77.6 minutes per day in free play.
- On average, children and young people spent 43 minutes per day in active transport. Generally time spent in active transport increased with age.
- There was a decline in the time spent in passive transport by deprivation level, with children and young people living in the least deprived areas spending more time in passive transport than those in the most deprived areas (53 versus 41 minutes per day). The opposite pattern was seen for active transport.
- Only four in ten (39.6%) children and young people fulfilled the criteria for meeting the screen time guideline, which advises that children and young people (5 to 18 years) should spend less than two hours per day (out of school time) in front of television,

computers, and gaming consoles. Those aged 18 to 24 years were included in these guidelines for completeness.

- Three out of five (59.6%) children aged 5 to 9 years met the screen time guideline, whereas only 30-35% of young people aged 10 years or more met this guideline.
- TV watching was the most common sedentary behaviour. On average, children and young people spent 124 minutes watching TV per day, 22 minutes per day sitting at a computer (outside of school work) and 19 minutes per day playing non-active video games.

Conclusions

These findings show that many New Zealand children and young people are of normal weight for height. The combined prevalence of overweight and obesity was 36%, which is consistent with other national surveys in New Zealand. Children and young people seem to have a fair understanding of the importance of healthy nutrition and physical activity, as well as a reasonably good awareness about the existence of initiatives to improve these behaviours. They also understand the importance of eating healthily and being physically active; however few knew how much physical activity was required to stay healthy.

In terms of food habits, children and young people are generally eating sufficient quantities of fruit, but not sufficient quantities of vegetables. Most children are drinking water every day; however the consumption of milk decreases with age, while the consumption of soft drinks increases with age. Positive practices such as eating breakfast and eating an evening meal with family or other members of the household were found.

Most children are participating in sufficient levels of physical activity for health; however physical activity levels are insufficient in young people (particularly older adolescents and young adults, especially females). Most children met the screen-time guideline; however less than one-third of young people met this guideline.

1 Introduction

Children and young people in New Zealand currently live in an environment that has increasing options for sedentary leisure activities, increasing barriers to physical activity and increased availability of foods and drinks high in fat, salt, and sugar. Physical inactivity and poor nutrition are linked to a multitude of negative health outcomes that are 'chronic' in nature (ie, develop over a long period of time and are persistent). Chronic conditions are among the most difficult public health issues to address as they are characterised by a complex interaction of social and environmental risk factors and the need for multiple responses.

In March 2008, Sport and Recreation New Zealand (SPARC) issued a request for proposal (RFP) to conduct a national survey of children and young people's physical activity, nutrition, and knowledge and awareness of key healthy lifestyle messages. A consortium was established between independent investigators at the Clinical Trials Research Unit (University of Auckland), Synovate Ltd, and Consumer Link, and was awarded the study. The overall design and conduct of this study was the responsibility of the Principal Investigators, Dr Ralph Maddison and Galina Mitchelhill.

Previous surveys of children and young people [(2002 National Children's Nutrition Survey (5-14 years), Youth 2000 and Youth 2007 (12-18 years), and 2007 New Zealand Children's Food and Drinks Survey (5-16 years)] have focused mainly on diet or other health behaviours, with some self-reported measures of physical activity. In recent years, there has been significant interest in the increased use of technologies that facilitate sedentary behaviour such as computer use, video games and the internet.

The primary objective of this survey was to collect the following information from a nationally representative sample of children and young people aged 5 to 24 years:

- awareness, attitudes and knowledge of key messages about eating healthily and being physically active
- dietary habits and behaviours
- physical activity and sedentary behaviour patterns.

Data were collected from 2,503 children and young people aged 5 to 24 years from September 2008 to May 2009, using a face-to-face home visit (computer-assisted personal interview, CAPI) and a subsequent telephone interview (computer-assisted telephone interview, CATI). Accelerometers (movement devices) were used to objectively measure time spent in physical activity.

This report provides a brief overview of the survey design and methodology and outlines the key findings from the national survey. For more information on the survey design, methodology and full descriptive results, refer to the Technical Report.

2 Methodology

2.1 Sample design

Meshblocks were the primary sampling unit (PSU). A meshblock is a defined geographic area, varying in size from part of a city block to large areas of rural land. Within each meshblock, eligible households were identified and asked to participate in the survey. One child or young person was randomly chosen from each eligible household. For more information on the sample design, refer to the Technical Report.

2.2 Survey methodology

2.2.1 Data collection

Data were collected from a nationally representative sample of 2,503 children and young people aged 5 to 24 years from September 2008 to May 2009. The data were collected during a face-to-face home visit (computer-assisted personal interview, CAPI) and a subsequent telephone interview (computer-assisted telephone interview, CATI) conducted 7 to 14 days after the CAPI. Height and weight were measured during the home visit. Accelerometers (movement devices) were also administered to participants to provide an objective measure of time spent in physical activity over a seven-day period.

The CAPI collected data on the following: socio-demographic characteristics; awareness, attitudes and knowledge of physical activity, dietary behaviours and lifestyle messages; as well as self-reported dietary habits; self-reported (subjective) physical activity and sedentary behaviours. The Multi-media Activity Recall for Children and Adolescents (MARCA), a validated computerised 24-hour recall time use questionnaire was used to collect information on self-reported physical activity and sedentary behaviours. The MARCA was administered during the CAPI. The CATI collected an additional two days of data on self-reported physical activity and sedentary behaviour using the MARCA.

The interview team consisted of professional research interviewers employed by Consumer Link. This national survey was voluntary and relied on the goodwill of participants. Parental consent was obtained for participants 15 years and under, while older participants provided consent themselves. Data were collected directly from children aged 10 years and older, whereas parents provided proxy responses for children 9 years and under.

The mean duration of the CAPI was 30 minutes for young people, and 27 minutes for children. The mean duration of each CATI was 40 minutes, with no difference by age.

2.2.2 Response rate

A total of 2,503 participants completed the survey, with an overall response rate of 55%. The response rate was calculated as the total number of complete interviews divided by the total number of eligible households plus the estimated number of non-contact households that were eligible.

2.2.3 Population weights

Most national surveys have complex sample designs (ie, stratified, multistage sampling), where different groups have different probabilities of selection. To ensure that no group is

under- or over-represented in estimates from the survey, population weights were calculated for each survey participant and applied during all analyses. For more information on population weights, please refer to the Technical Report.

2.2.4 Analyses

Results for continuous data are presented as the survey-weighted mean, standard error of mean, and percentiles (25^{th}, 50^{th}, 75^{th}). Results for categorical data are presented as the survey-weighted proportion and standard error of proportion. Data were reported for both the total sample and selected sociodemographic sub-groups. The numbers of survey participants (unweighted) in each sub-group and/or category are shown in the tables (n) to show the base sample size for each set of analysis.

Graphs include error bars to indicate the 95% confidence interval to represent the sample error for estimates. A 95% confidence interval means there is a 95% chance that the true value of the estimate falls between the lower and upper confidence interval values. Confidence intervals were calculated by multiplying the SEM or SEP by 1.96, then adding and subtracting this value from the mean or proportion to give the upper and lower 95% confidence interval, respectively. Differences between estimates are said to be statistically significant when the confidence intervals do not overlap.

2.3 Survey measures

2.3.1 Demographic variables

The following demographic information was collected during the CAPI: date of birth, gender, ethnic group/s, household composition and living arrangements. Date of birth was used to calculate age and participants were assigned to the following age groups: 5 to 9 years; 10 to 14 years; 15 to 19 years; 20 to 24 years. The 'total response output' described by Statistics New Zealand was used to classify ethnic group. This means that participants were counted in each of the ethnic groups they identified with.

Meshblock was used to assign level of deprivation and area (urban/rural). Level of deprivation was assigned using the 2006 New Zealand Deprivation Index (NZDep2006), an area-based index of deprivation that measures the level of socioeconomic deprivation for each area (meshblock). Quintile 1 represents the least deprived 20% of areas and quintile 5 represents the most deprived 20% of areas.

2.3.2 Awareness, attitudes and knowledge of healthy eating and physical activity

Children and young people's awareness, attitudes and knowledge of key healthy lifestyle messages were collected for all participants during the CAPI. Specific questions were developed for this survey by researchers from Synovate and the SPARC/Ministry of Health and Ministry of Education project team. Children (5 to 9 years) completed an abbreviated version of the questionnaire with parental assistance.

The questionnaire assessed the following:

- awareness of initiatives that encourage health eating and physical activity
- attitudes towards healthy eating and physical activity
- knowledge of what it means to eat healthily and be physically active and the benefits of healthy eating and physical activity.

2.3.3 Dietary habits and behaviours

A dietary habits questionnaire was developed for this survey. The questionnaire was designed to collect information on consumption of foods and drinks from the Ministry of Health's four Food and Nutrition Guideline food groups (vegetables and fruit; breads and cereals; milk and milk products; and lean meat and alternatives), as well as foods and drinks high in fat, salt, and/or sugar and behaviours associated with food and nutrient intake (eg, meal patterns, help with grocery shopping and food preparation). The questionnaire was based largely on the Dietary Habits Questionnaire (DHQ) developed for the 2008/09 New Zealand Adult Nutrition Survey, with some modifications to enhance comprehension among children and young people and also to reflect the types of foods commonly consumed by children and young people. A small number of questions from other child and youth surveys (ie, the 2002 National Children's Nutrition Survey[1]; Youth'07: the Health and Wellbeing of Secondary School Students in New Zealand[2]) were also included.

Many of these questions included up to eight response options. Where possible, the responses to these questions were combined to make comparisons against specific nutrition guidelines or recommendations. However, for most foods and drinks there are no specific guidelines about levels of dietary intake and so it was not possible to combine responses in a meaningful way. Without combining categories, the number of participants in each response category was often too small to present results by the full range of socio-demographic variables used in other sections of this report. Therefore, only selected results are presented in this report. For more detailed results, refer to the Technical Report.

2.3.4 Body size

Height and weight were measured for all participants during the CAPI. Body mass index (BMI) was calculated by dividing weight in kilograms by height in metres squared (kg/m^2). International BMI cut-off points were used to classify body size as underweight, normal, overweight or obese. See section 3.3 of this report or the Technical Report for more detail.

2.3.5 Physical activity and sedentary behaviours

Physical activity is defined as "any bodily movement produced by skeletal muscles that results in energy expenditure"[3]. Physical activity in daily life can be categorized into occupational, sports, conditioning, household, transport or other activities. Physical activity is typically measured objectively using movement devices (eg, accelerometers) or subjectively using self-report questionnaires. In order to determine the overall daily activity patterns of children, it is necessary to take into account both physically active and sedentary behaviours. Sedentary behaviour is defined as "a distinct class of behaviours characterised by low energy expenditure"[4]. For the purpose of this survey we used two approaches to assess physical activity and sedentary behaviours.

Objective measure of physical activity

Children and young people wore a movement device (Actigraph accelerometer) for seven consecutive days, which provided an objective measure of the frequency, duration and intensity of physical activity. The average daily time spent in light-intensity, moderate-

intensity, vigorous-intensity, and moderate- to vigorous-intensity physical activity was calculated for each person. For the purpose of this study, any person that provided at least one day of physical activity (accelerometer) data was included in the analysis. This means that data should be interpreted as physical activity levels on *any given day*. More details are provided in the Technical Report.

Self-reported physical activities and sedentary behaviours

Self-reported physical activities and sedentary behaviour were measured in children and young people aged 5 to 24 years using the Multimedia Activity Recall for Children and Adults (MARCA)[5]; a validated computerised 24-hour recall questionnaire. Each participant recalled three days (72 hours) of activity in total—one day prior to the CAPI and two days prior to the CATI. For each day, children and young people reported everything they did in the previous 24 hour period in minimum time slices of five minutes. Because young children (5-9 years) have difficulty recalling what they have done accurately[6], parents provided information about their child's self-reported physical activities and sedentary behaviours (eg, television watching) before and after-school and for any time the adult was with the children.

Activity data collected with the MARCA included: daily time spent in organised sport and play, active and passive transport, television (TV) watching, computer use, video game, play, and other sedentary behaviours (eg, talking on phone, texting and sleeping). For more details, see the Technical Report.

Comparison with physical activity guidelines

The average amount of time children and young people spent in physical activity and screen time (TV watching, video game and computer use) was compared with existing New Zealand Physical Activity Guidelines for children and young people[7] (aged 5 to 18 years). The New Zealand Physical Activity Guidelines[7] state that children and young people should, throughout each day, do 60 minutes or more of moderate- to vigorous-intensity physical activity. The guidelines define moderate-intensity physical activity as the equivalent of a brisk walk, and vigorous-intensity physical activity as one that causes people to "huff and puff". These guidelines also state children and young people should spend less than two hours per day (out of school time) in front of television, computers, and gaming consoles[7]. Young people aged 18 years or older come under the adult guidelines, which recommend participating in at least 30 minutes of moderate-intensity physical activity[8] on most, if not on all, days of the week.

Four methods have been proposed to assess the level of observance with physical activity guidelines[9]. Having considered these approaches we utilised the following three methods in this report:

1. A child or young person aged up to 18 years meets the guidelines if he or she accumulates at least 60 minutes of MVPA on a minimum of three sampled days (All Days Method).
2. A child or young person aged up to 18 years accumulates at least 60 minutes of MVPA per day when averaged across three days (Three Day Average Method).
3. A child or young person aged up to 18 years accumulates at least 60 minutes of MVPA per day on any valid sampled day (at least one) (Any Day Average Method).

For participants aged 18 years or more, the same methods were used but the criterion of accumulating at least *60 minutes* of MVPA was changed to accumulating at least *30 minutes* of MVPA. Overall, these three methods yielded similar estimates of the proportions meeting the guidelines (see section 3.5.5).

Given the similarities between the three methods for assessing the proportions meeting the physical activity guidelines, the Three-Day Average Method was used to calculate the proportion of children and young people that complied with the screen time component of the physical activity guidelines (for more detail see the Technical Report).

Using this approach, participants aged up to 18 years were considered to have met the screen-time guideline if they accumulated less than two hours per day in front of television, computers and game consoles (screen-based activities). Screen-time guidelines do not exist in New Zealand for those aged 18 years or older; however, the accumulation of less than two hours per day criterion was used for this population for completeness.

Table 1: Summary of measurement procedures

Module	Topics	Details
Socio-demographics	Gender, age, ethnic group, household composition, living arrangements, level of deprivation and area (urban/rural).	Standard questions and classifications
Knowledge, attitudes and awareness	Awareness of initiatives that encourage health eating and physical activity. Attitudes towards healthy eating and physical activity. Knowledge of what it means to eat healthily and be physically active and the benefits of healthy eating and physical activity.	Responses grouped into coded categories or pre-coded responses.
Dietary habits and behaviours	Consumption of foods and drinks from key food groups, as well as foods and drinks high in fat, salt, and/or sugar. Frequency of behaviours associated with food and nutrient intake (eg, breakfast consumption, family meals).	Proportions meeting guidelines for fruit and vegetable intake
Body size	Height and weight measurements (to calculate BMI and classify body size as underweight, normal, overweight or obese).	Using standardised equipment and procedures
Physical activity	Accelerometer device for seven days[10 11 12] to assess time spent in light-intensity, moderate-intensity and vigorous-intensity physical activity.[12 13 14 15]	Time spent in moderate-intensity, vigorous-intensity, and moderate- to vigorous-intensity physical activity, as well as the proportions meeting guidelines
Self-reported physical activity and sedentary behaviours	MARCA[5] questionnaire to assess organised sport, free play, active and passive transport, TV watching, video game play, computer use, overall physical activity level (PAL), and other sedentary behaviours (reading, texting, talking on the telephone).	Time spent in self-reported physical activities and sedentary behaviours as well as the proportions meeting guidelines

3 Results

3.1 Participants

A total of 2,503 participants were interviewed, with 52% male and 48% female. The majority (85%) of participants lived in urban locations. The ethnic composition of the sample was similar to the New Zealand population at the 2006 Census (Māori 19%; Pacific 10%; Asian 13%; and NZEO 71%). Participants were evenly distributed across the five quintiles of deprivation. Lower numbers of participants were recruited in the older age groups compared with the younger ones. Descriptive details of the sample population are provided in Table 2.

Table 2: Summary of survey participants

Variable	Category	n	%
Gender	Female	1206	48.2
	Male	1297	51.8
Age group	5-9 years	756	30.2
	10-14 years	829	33.1
	15-19 years	574	22.9
	20-24 years	344	13.7
Ethnic group (total response)	Māori	470	18.8
	Pacific	239	9.6
	Asian	324	12.9
	NZEO	1786	71.4
Level of deprivation	1 (least deprived)	515	20.6
	2	483	19.4
	3	541	21.7
	4	432	17.3
	5 (most deprived)	524	21.0
Area	Rural	386	15.4
	Urban	2117	84.6

3.2 Awareness, attitudes and knowledge

The awareness, attitudes and knowledge of young people towards healthy eating and physical activity are reported in this section.

The related questions were asked of those aged 10 to 24 years unless noted otherwise. Children 9 years of age and under were considered too young to provide reliable responses to these questions. Responses from parents/caregivers on behalf of their children were not canvassed in this situation because we were interested in obtaining the knowledge and attitudes of the children themselves for this study. There was an exception, with children questioned to determine their perceptions of how healthy or unhealthy certain foods and drinks were.

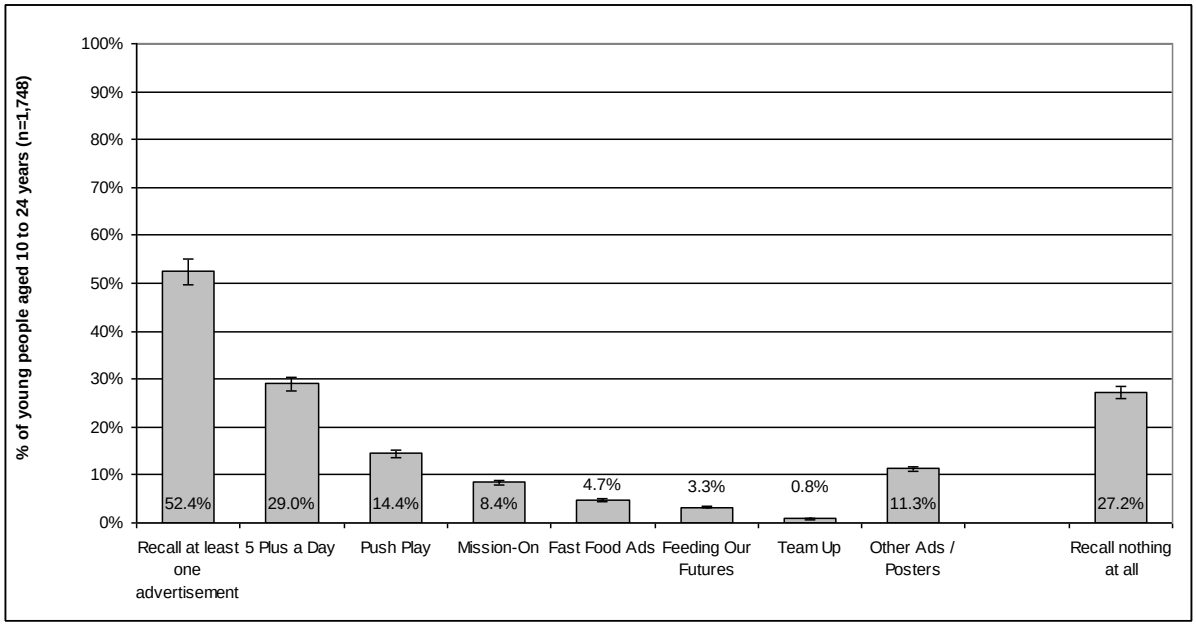
Many of the answers to questions in this section were recorded word-for-word by the interviewers and then grouped into the categories (coded) shown in the figures and tables. More than one answer (multiple responses) was allowed for these types of question (open-ended). For other questions (pre-coded), a list of possible answers was shown to the children and young people and they were asked to choose one answer or more if multiple responses were allowed.

3.2.1 Recall of healthy eating initiatives

Young people were asked to recall any messages / campaigns / advertising that encouraged them to eat healthily that they had seen or heard in the last 12 months. The responses to this question were recorded word-for word by the interviewers and then grouped into categories for analysis. Multiple responses were allowed for this question. A summary of the recall of initiatives to promote healthy eating is provided in Table 3.

Approximately half (52.4%) of the young people recalled at least one advertisement or campaign, with the '5 Plus A Day' campaign most frequently recalled (29.0%). Approximately one-quarter of young people (27.2%) said they could not recall anything (Figure 1). Other responses, not shown in Figure 1, included responses about something that was not coded as advertising and thus were not relevant to this question (for example, those who mentioned a place where they saw the advertising rather than a campaign).

Figure 1: Recall of initiatives that encourage healthy eating among young people aged 10 to 24 years



Notes: This figure shows unprompted awareness of messages / campaigns / advertising that encourage healthy eating. In addition to the figures shown, 29.4% mentioned a place where they had seen or heard something, 12.1% mentioned the message(s) they recalled, 5.6% mentioned receiving a message from other people, 21.9% said they could not recall anything and 5.3% did not know or did not provide a response.

As can be seen in Table 3, few differences existed in the awareness of initiatives that encourage healthy eating by the demographic and social characteristics of young people. However, awareness of '5 Plus A Day' increased with age; young people aged 20 to 24 years (36.4%) were significantly more likely than young people aged 10 to 14 years (24.8%) to recall '5 Plus A Day'.

Table 3: Recall of initiatives that encourage healthy eating among young people aged 10 to 24 years

		5 Plus A Day			Push Play			Mission-On			Nothing, don't know, no response		
		n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		511	29.0	1.4	239	14.4	1.2	146	8.4	0.9	498	27.2	1.6
Gender	Female	257	29.2	2.1	127	14.7	1.7	81	9.3	1.2	215	25.0	2.3
	Male	254	28.7	1.9	112	14.1	1.7	65	7.6	1.3	283	29.1	2.0
Age group	10-14 years	212	24.8	2.0	99	12.7	1.6	92	9.9	1.2	238	29.1	2.3
	15-19 years	182	30.7	2.4	90	16.3	2.2	42	8.3	1.7	154	23.9	2.4
	20-24 years	117	36.4	3.3	50	15.5	2.6	12	4.7	3.1	106	28.0	3.0
Ethnic group (total response)	Māori	76	23.9	3.1	45	15.3	2.9	24	7.6	1.8	92	29.8	4.0
	Pacific	46	25.6	3.7	27	16.1	3.6	11	5.4	1.8	50	28.7	4.7
	Asian	63	26.9	3.5	28	9.3	1.8	18	7.4	2.3	80	31.5	4.3
	NZEO	387	31.3	1.7	177	15.1	1.4	115	9.7	1.3	327	25.8	1.8
Level of deprivation	1 (least deprived)	98	27.5	3.1	51	12.9	2.3	29	7.6	1.7	87	27.0	3.9
	2	102	29.2	3.2	48	17.5	3.1	23	7.3	1.8	103	28.7	3.2
	3	127	31.7	3.4	43	10.7	2.0	43	9.6	1.8	93	23.7	3.4
	4	92	29.8	3.1	45	15.1	3.2	19	6.3	1.8	97	28.8	4.1
	5 (most deprived)	90	27.0	3.0	52	16.0	2.8	30	10.2	2.9	117	27.9	3.7
Area	Rural	79	28.9	3.4	38	17.1	3.5	20	6.1	1.4	64	23.0	3.2
	Urban	432	29.0	1.5	201	14.1	1.3	126	8.6	1.0	434	27.7	1.7

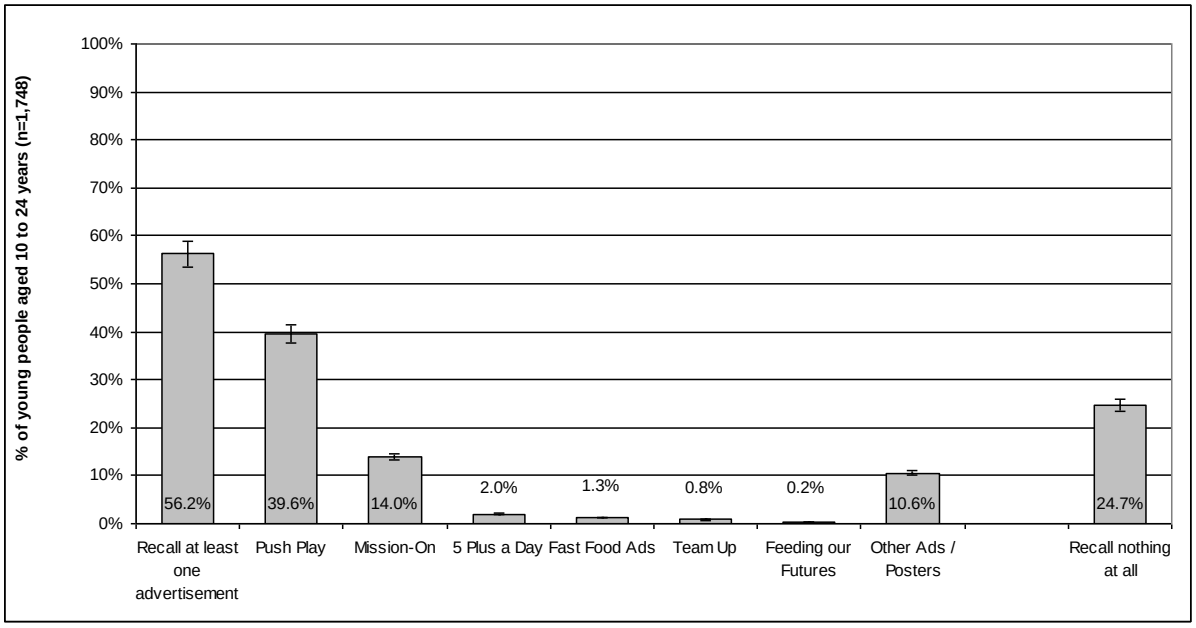
Notes: SEP = standard error of the proportion. Caution should be applied where n<30.This table excludes initiatives mentioned by fewer than 8% of participants. The last category includes: Nothing (n=394) and Don't Know / No Response (n=104).

3.2.2 Recall of physical activity initiatives

Young people were asked to recall any messages / campaigns / advertising that encourage them to be physically active that they had seen or heard in the last 12 months. The responses to this question were recorded word-for-word by the interviewers and then grouped into categories for analysis. Multiple responses were allowed for this question. A summary of the recall of physical activity initiatives is provided in Table 4.

More than half (56.2%) of young people recalled at least one advertisement or campaign, with the 'Push Play' campaign most frequently recalled (39.6%). Almost one-quarter of young people (24.7%) said they could not recall anything, did not know or did not respond (Figure 2). Other responses, not shown in Figure 2, included responses about something that was not coded as advertising and thus were not relevant to this question (for example, those who mentioned a place where they saw the advertising rather than a campaign).

Figure 2: Recall of initiatives that encourage physical activity among young people aged 10 to 24 years



Notes: This figure shows unprompted awareness of messages / campaigns / advertising that encourage physical activity. In addition to the figures shown, 22.3% mentioned a place where they had seen or heard something, 15.2% mentioned the message(s) they recalled, 5.5% mentioned receiving a message from other people, 19.5% said they could not recall anything, 5.1% did not know or gave no response and 2.4% mentioned something outside these classifications.

Differences by gender, age and ethnicity existed in the awareness of initiatives that encourage physical activity (Table 4). Females (45.0%) were significantly more likely than males (34.9%) to recall 'Push Play'. Young people aged 10 to 14 years (31.8%) were significantly less likely than those in the other two age groups (45.9% and 48.6% for 15-19-year-olds and 20-24-year-olds, respectively) to recall 'Push Play'. Those aged 10 to 14 years were significantly more likely to recall 'Mission-On' (16.7%) than those aged 20 to 24 years (7.8%), with recall declining across the age groups. Young Māori (29.4%) and young Asians (27.9%) were significantly less likely than young people overall (39.6%) to recall 'Push Play'.

Table 4: Recall of initiatives that encourage physical activity among young people aged 10 to 24 years

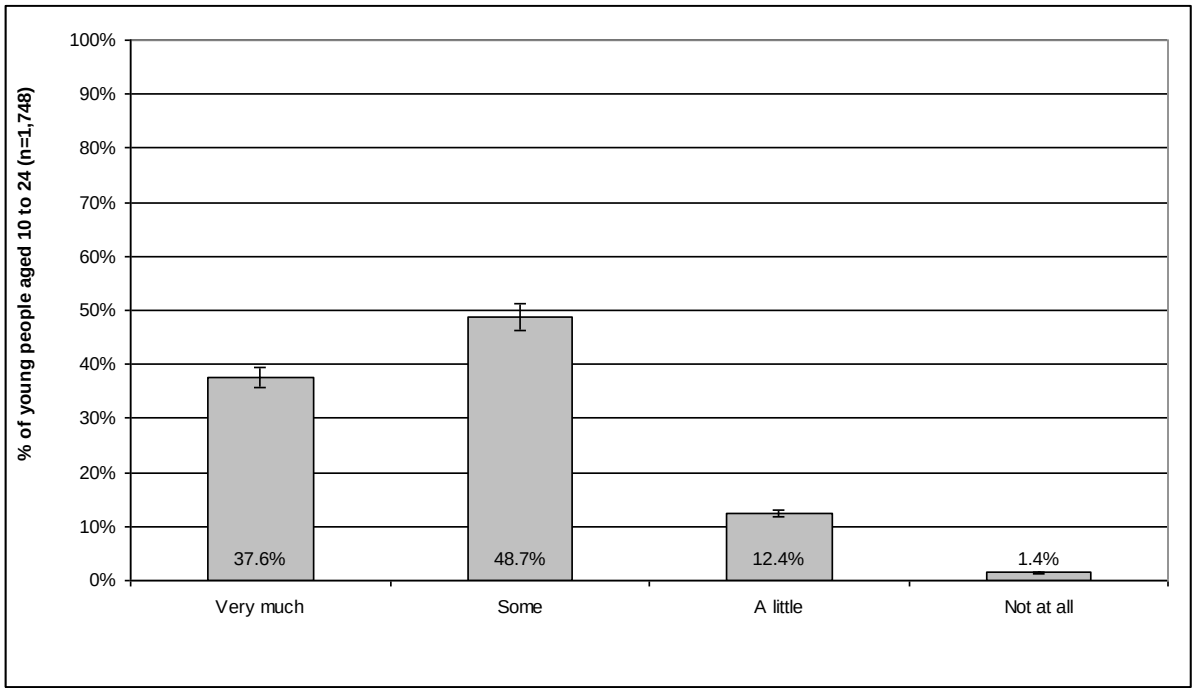
		Push Play			Mission-On			Nothing recalled, don't know or no response		
		n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		724	39.6	1.5	239	14.0	1.1	426	24.7	1.5
Gender	Female	384	45.0	2.2	112	14.0	1.6	184	21.6	2.0
	Male	340	34.9	2.0	127	14.0	1.5	242	27.3	2.0
Age group	10-14 years	290	31.8	2.0	142	16.7	1.7	201	24.9	2.0
	15-19 years	269	45.9	2.6	72	13.6	2.1	134	24.0	2.5
	20-24 years	165	48.6	3.5	25	7.8	1.9	91	25.2	3.5
Ethnic group (total response)	Māori	109	29.4	3.3	38	13.4	2.6	87	32.5	3.8
	Pacific	56	33.3	5.2	15	10.2	2.9	49	27.8	4.5
	Asian	67	27.9	3.4	33	14.6	3.0	75	31.9	3.4
	NZEO	583	46.0	1.9	187	16.1	1.4	258	19.6	1.6
Level of deprivation	1 (least deprived)	155	44.3	3.7	53	17.8	2.5	76	20.7	3.6
	2	148	41.8	3.3	49	15.8	2.8	80	24.4	3.2
	3	171	39.5	3.4	67	16.0	2.2	81	24.1	3.5
	4	116	37.8	3.5	32	9.6	2.1	94	29.1	3.7
	5 (most deprived)	131	35.9	3.9	36	11.3	2.3	95	24.8	3.2
Area	Rural	107	43.2	3.4	37	16.5	3.1	58	19.7	2.8
	Urban	617	39.2	1.7	202	13.7	1.1	368	25.2	1.6

Notes: SEP = standard error of the proportion. Caution should be applied where n<30. This table excludes initiatives mentioned by fewer than 9% of participants. No initiatives recalled (n=331); Don't Know / No Response (n=95).

3.2.3 Attitudes towards eating healthily

Young people were questioned about their attitudes towards eating healthily using a 4-point Likert scale ranging from care *'very much'* to care *'not at all'*. A summary of responses is provided in Table 5. Approximately one-third (37.6%) of young people said that they cared *'very much'* about eating healthily. A further 48.7% cared *'some'*, 12.4% cared *'a little*' and 1.4% cared *'not at all'* about eating healthily (Figure 3).

Figure 3: Attitude towards eating healthily among young people aged 10 to 24 years



Young people's attitudes to eating healthily were similar across the different socio-demographic groups, although females (42.5%) were significantly more likely than males (33.3%) to care *'very much'* about eating healthily (Table 5).

Table 5: Attitude towards eating healthily among young people aged 10 to 24 years

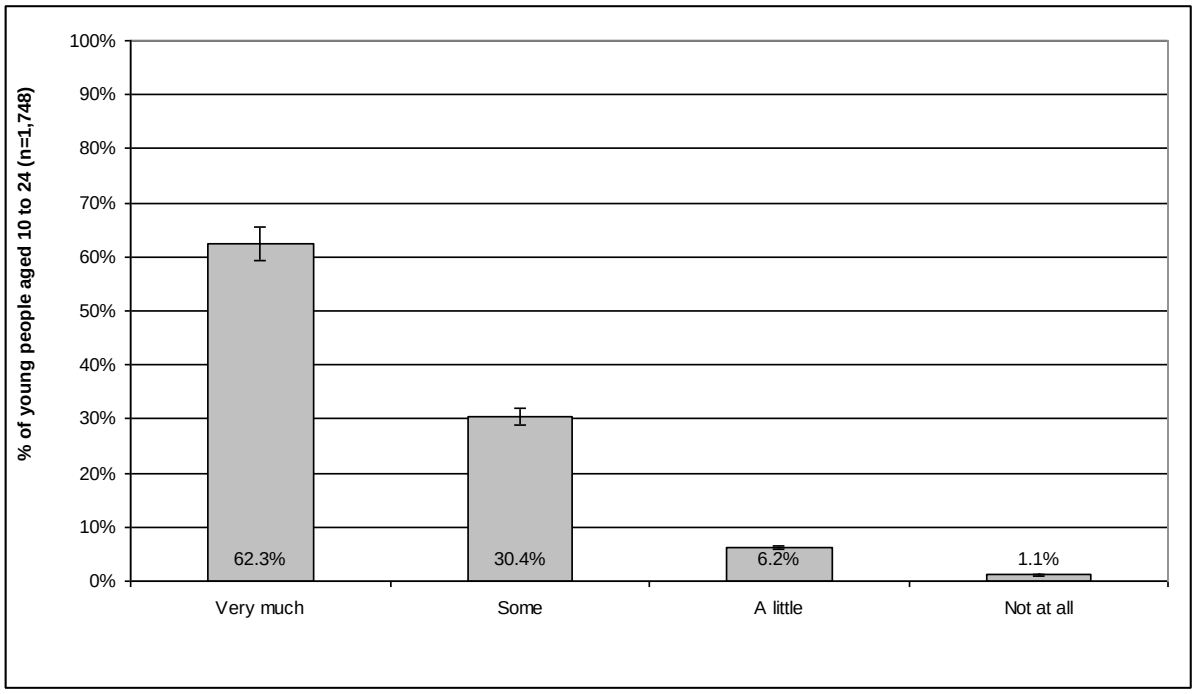
How much do you care about eating healthily?		Care Very Much			Care Some			Care A Little		
		n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		637	37.6	1.5	868	48.7	1.6	209	12.4	1.2
Gender	Female	355	42.5	2.3	396	45.5	2.5	77	11.0	1.6
	Male	282	33.3	2.1	472	51.5	2.3	132	13.6	1.6
Age group	10-14 years	324	39.3	2.2	388	47.2	2.3	105	12.5	1.8
	15-19 years	165	31.8	2.8	328	53.3	2.9	64	12.8	2.0
	20-24 years	147	42.7	3.4	152	44.8	3.3	40	11.2	2.2
Ethnic group (total response)	Māori	102	37.3	4.1	160	46.1	4.2	45	14.7	2.9
	Pacific	68	41.4	4.9	73	44.7	5.3	16	11.6	4.0
	Asian	95	40.4	3.6	124	53.4	3.9	16	4.8	1.3
	NZEO	437	35.6	1.7	620	50.0	1.9	158	13.0	1.3
Level of deprivation	1 (least deprived)	111	31.4	2.8	178	55.4	3.4	41	12.3	2.5
	2	119	35.0	3.1	175	54.1	3.2	33	9.7	1.8
	3	134	39.1	3.1	194	48.0	3.1	49	11.8	2.1
	4	125	40.2	4.2	143	41.5	4.6	40	16.8	4.1
	5 (most deprived)	147	41.0	3.3	173	45.8	3.5	45	11.2	2.2
Area	Rural	79	30.1	3.3	131	50.9	4.2	36	17.2	3.7
	Urban	558	38.4	1.6	737	48.5	1.8	173	11.8	1.3

Notes: SEP = standard error of the proportion. Caution should be applied where n<30. This table excludes 1.4% of participants who cared ‘not at all’ about eating healthily.

3.2.4 Attitudes towards being physically active

Young people were questioned regarding their attitudes towards physical activity using a 4-point Likert scale ranging from care *'very much'* to care *'not at all'*. A summary of responses is provided in Table 6. Just under two-thirds of young people (62.3%) said they cared *'very much'* about staying fit and being physically active. A further 30.4% cared *'some*', 6.2% cared *'a little'* and 1.1% cared *'not at all'* about staying fit and being physically active (Figure 4).

Figure 4: Attitude towards staying fit and being physically active among young people aged 10 to 24 years



Young people's attitudes to staying fit and being physically active were similar across the different socio-demographic groups (Table 6), although young people aged 10 to 14 years (68.6%) were significantly more likely than those in the other two age groups (57.9% and 54.1%) to say they cared *'very much'* about staying fit and being physically active.

Table 6: Attitude towards staying fit and being physically active among young people aged 10 to 24 years

How much do you care about staying fit and being physically active?		Care Very Much			Care Some		
		n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		1072	62.3	1.6	536	30.4	1.6
Gender	Female	479	58.3	2.3	289	34.0	2.2
	Male	593	65.9	2.3	247	27.2	2.1
Age group	10-14 years	565	68.6	2.2	216	25.8	2.0
	15-19 years	321	57.9	2.9	195	33.1	2.8
	20-24 years	185	54.1	4.3	125	37.4	4.4
Ethnic group (total response)	Māori	195	63.6	3.6	88	27.8	3.3
	Pacific	104	65.2	4.9	46	27.4	4.5
	Asian	131	53.7	4.6	86	37.9	4.4
	NZEO	765	63.0	1.9	382	30.5	1.9
Level of deprivation	1 (least deprived)	213	61.8	3.7	92	29.2	3.7
	2	211	66.1	3.7	105	28.1	3.7
	3	229	65.5	3.1	132	31.0	3.0
	4	184	61.1	3.8	100	30.7	3.3
	5 (most deprived)	229	58.0	3.8	107	32.6	3.7
Area	Rural	168	68.6	3.8	68	24.9	3.7
	Urban	904	61.6	1.8	468	31.0	1.7

Notes: SEP = standard error of the proportion. Caution should be applied where n<30. This table excludes 6.2% of participants who cared ‘a little’ and 1.1% who cared ‘not at all’ about staying fit and being physically active.

3.2.5 Attitudes towards eating healthily and being physically active

Findings indicate that attitudes toward eating healthily may be linked to attitudes held about being fit and physically active (Table 7). In particular, young people who cared *'very much'* about being fit and physically active also were more likely to care *'very much'* and care '*some*' about eating healthily. Young people who cared *'a little'* about being fit and physically active were still likely to care *'some*' about eating healthily. Those who do not care *'at all'* about being fit and physically active (albeit a very small group) were also most likely not to care about eating healthily (saying they only cared '*a little', or 'not at all',* Table 7).

Based on their attitudes towards eating healthily and staying fit and physically active, young people were grouped into one of four mutually exclusive groups, which were:

1. care very much/some about eating healthily (but not about staying fit and physically active), 4.3%;
2. care very much/some about staying fit and physically active (but not about eating healthily), 10.8%;
3. care very much/some about eating healthily *and* staying fit and physically active, 82.0%; or
4. don't care very much about eating healthily *or* staying fit and physically active, 3.0%.

Table 7: Link between attitudes towards eating healthily and being fit and physically active among young people aged 10 to 24 years

Attitudes towards eating healthily				Attitudes towards being fit and physically active											
				Care very much			Care some			Care a little			Care not at all		
	n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years)	1748	100.0	0.0	1072	62.3	1.6	536	30.4	1.6	118	6.2	0.7	22	1.1	0.3
Care very much	637	37.5	1.5	518	31.1	1.4	105	5.9	0.7	14	0.5	0.2	0	0.0	0.0
Care some	868	48.7	1.6	463	25.4	1.4	342	19.5	1.3	56	3.3	0.6	7	0.4	0.2
Care a little	209	12.4	1.2	79	5.2	0.8	80	4.6	0.7	39	2.0	0.5	11	0.5	0.2
Care not at all	34	1.4	0.3	12	0.5	0.2	9	0.4	0.1	9	0.4	0.1	4	0.1	0.1

Notes: SEP = standard error of the proportion. Caution should be applied where n<30.

3.2.6 Knowledge about healthy and unhealthy foods

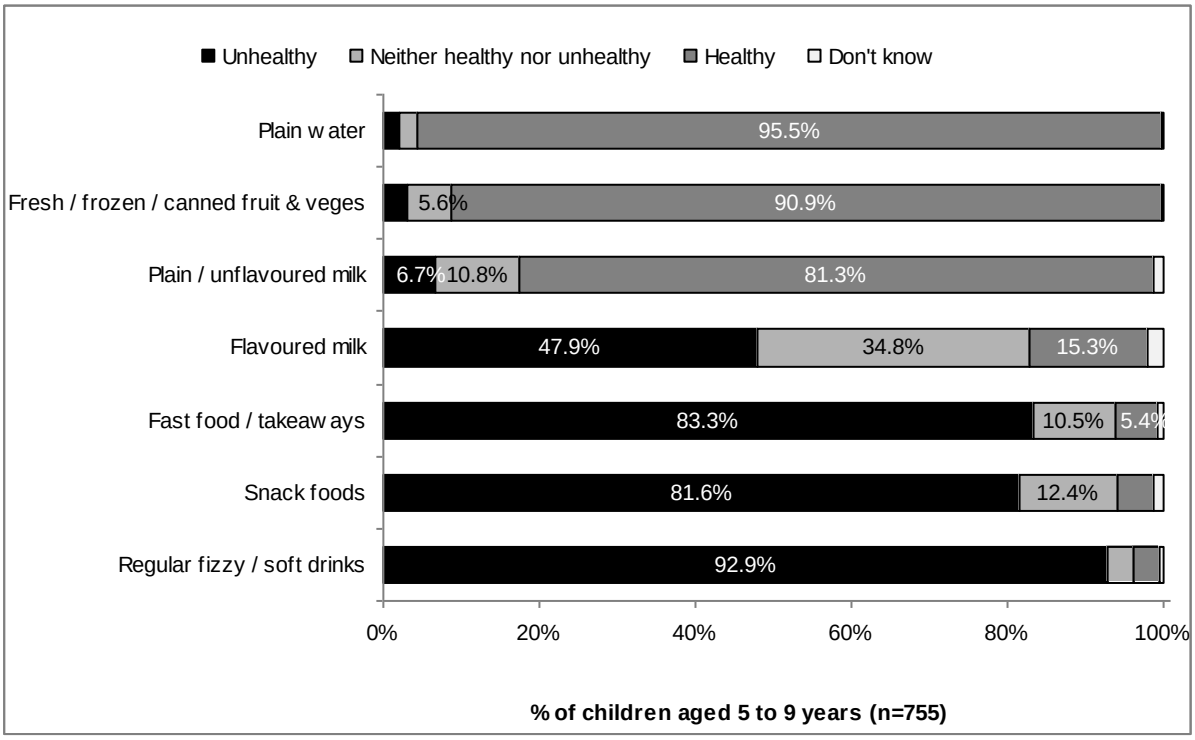
The questions in this section were asked to explore children's understanding of what healthy eating involves. Children were asked to indicate how healthy they thought several different food items were from a list of options they were shown. Single responses only were allowed.

A variety of healthy and unhealthy food options were provided. The healthy foods were: plain water, plain milk and fresh / frozen / canned fruit and vegetables. Unhealthy foods were: fast food / takeaways, snack foods and regular fizzy / soft drinks. Flavoured milk was included as a 'sometimes' food (based on the Ministry of Health's Food and beverage classification system, see: http://www.moh.govt.nz/moh.nsf/indexmh/heha-foodclassification#resources for more details).

Of the different foods and drinks (Figure 5):

- Plain water was most likely to be rated *'healthy'* (95.5%).
- Regular fizzy / soft drinks were most likely to be rated as *'unhealthy'* (92.9%).
- Flavoured milk caused the most ambivalence, with 47.9% rating it *'unhealthy'*, 15.3% rating it *'healthy'* and 34.8% rating it *'neither'*.

Figure 5: Knowledge of healthy foods among children aged 5 to 9 years



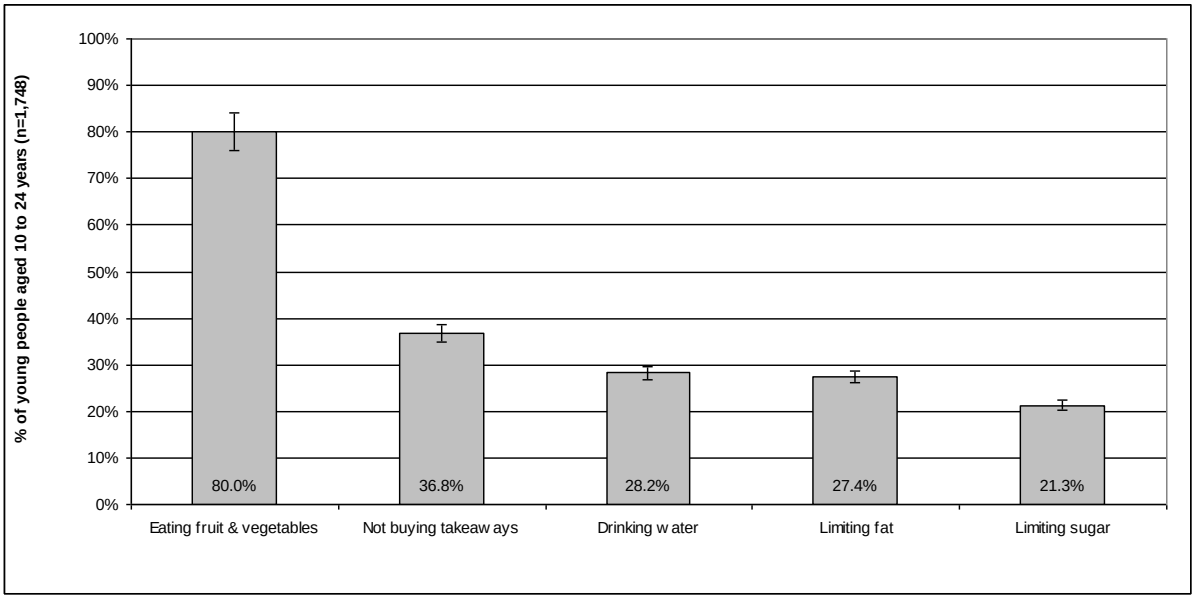
Notes: Figures for children who did not know how healthy each food/drink were: Plain water 0.2%, Fruit and vegetables 0.4%; Plain milk 1.1%; Flavoured milk 2.0%; Fast food 0.8%; Snack foods 1.2%; Regular fizzy drinks 0.5%. The full set of responses to this question is in the Technical Report. 'Very healthy' and 'very unhealthy' categories were not used, as it was believed they would make the scale too complex for this age group to manage accurately.

3.2.7 Views about what eating healthily means

Young people were asked to think about eating healthily and to name things they thought people like them could do if they wanted to eat healthily. The purpose of this question was to assess what young people understood about the meaning of eating healthily. The responses to this question (several different options for eating and drinking healthily) were listed but not shown to young people, so interviewers matched responses to the list. Young people were also free to add responses that were not listed. These were recorded and grouped into existing or new categories later. Multiple responses were allowed. A summary of responses is provided in Table 8.

Most (80.0%) young people responded that *'eating fruit and vegetables'* was part of eating healthily. Less than one-half of young people mentioned each of the other options (Figure 6). Reducing the amount of salt in one's diet, a key healthy eating message, was mentioned by less than one in 10 (8.1%) young people.

Figure 6: Actions for eating healthily mentioned by young people aged 10 to 24 years



Notes: Includes only listed (but unprompted) responses selected by 20% or more of participants. 1.9% did not answer this question.

Looking at the responses mentioned by more than 20% of young people by gender and age shows that there were some gender and age-related differences (Table 8):

- Young women were significantly more likely than young men to say eating healthily meant *'reducing sugar'* (25.3% vs 17.9% for males).
- The proportion of young people mentioning *'not buying takeaways'* increased with age, with those aged 10 to 14 years (30.0%) being significantly less likely to mention this than young people aged 15 to 19 years (41.7%). The proportion of young people mentioning *'limiting fat'* also increased with age, with those aged 15 to 19 years (32.0%) significantly more likely than those aged 10 to 14 years (22.0%) to mention this.

Table 8: Actions for eating healthily mentioned by young people aged 10 to 24 years

		Eating Fruit/Vegetables			Not Buying Takeaways			Drinking Water			Limiting Fat			Limiting Sugar		
		n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 yrs, n=1748)		1354	80.0	1.2	615	36.8	1.6	486	28.2	1.6	469	27.4	1.5	369	21.3	1.4
Gender	Female	655	79.7	1.8	299	36.9	2.3	239	28.3	2.1	233	28.0	2.1	210	25.3	2.1
	Male	699	80.2	1.6	316	36.7	2.3	247	28.1	2.1	236	26.9	2.1	159	17.9	1.6
Age group	10-14 yrs	664	82.5	1.7	234	30.0	2.1	242	28.4	2.1	179	22.0	2.0	185	23.0	1.9
	15-19 yrs	426	77.3	2.2	239	41.7	3.0	149	28.2	2.6	180	32.0	2.6	119	20.6	2.2
	20-24 yrs	264	78.3	3.0	141	45.4	3.5	95	27.8	3.4	110	33.3	3.9	65	18.6	2.9
Ethnic group (total response)	Māori	242	78.6	3.1	109	35.7	3.7	93	29.6	3.5	83	25.8	3.3	73	24.2	3.4
	Pacific	134	85.5	3.4	53	31.5	4.6	67	42.6	5.1	37	24.5	4.1	23	19.3	4.1
	Asian	198	84.0	3.1	90	35.7	3.9	81	31.3	4.8	75	36.8	3.8	47	18.5	3.2
	NZEO	953	79.6	1.5	443	39.8	1.8	322	268	1.7	343	27.9	1.8	286	23.4	1.8
Level of deprivation	1 (least deprived)	250	78.9	2.9	124	38.7	3.7	84	24.1	3.4	93	26.2	3.4	77	23.6	3.2
	2	253	76.3	3.2	119	36.3	4.0	90	29.3	3.9	73	23.1	3.2	66	20.1	3.0
	3	306	81.6	2.2	134	38.2	3.6	86	22.9	3.3	105	29.2	3.4	89	24.9	3.3
	4	244	84.1	2.6	100	33.4	3.6	98	32.6	4.1	94	29.4	4.0	70	23.0	3.6
	5 (most deprived)	296	78.8	3.1	133	37.0	3.5	126	31.3	3.8	103	28.5	3.2	64	16.0	2.5
Area	Rural	189	76.1	3.3	80	31.1	3.6	59	25.6	3.5	65	25.0	3.8	70	29.5	4.5
	Urban	1165	80.4	1.3	535	37.4	1.7	427	28.5	1.7	404	27.7	1.6	299	20.4	1.4

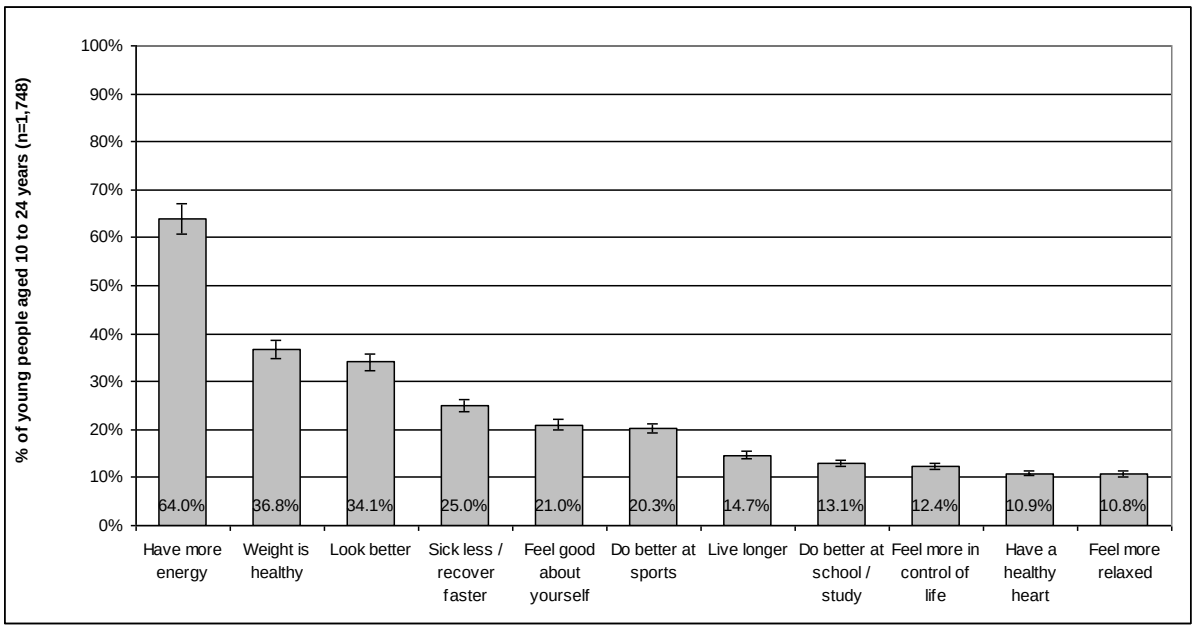
Notes: SEP = standard error of the proportion. Caution should be applied where n<30. This table excludes actions mentioned by fewer than 20% of participants. n=38 participants could not name any actions.

3.2.8 Views about the benefits of eating healthily

Young people were asked to think about eating healthily and to name what they thought were some of the benefits of eating healthily. The responses to this question (a range of different benefits) were listed but not shown to young people, so interviewers matched responses to the list. Young people were also free to add responses that were not listed. These were recorded and grouped into existing or new categories later. Multiple responses were allowed.

The benefit mentioned most frequently, by almost two-thirds (64.0%) of young people, was that *'you have more energy'*. Less than one-half of young people mentioned each of the other benefits (Figure 7).

Figure 7: Benefits of eating healthily mentioned by young people aged 10 to 24 years



Notes: Includes only listed (but unprompted) responses mentioned by 10% or more of participants. 1.9% did not answer this question.

Looking at the responses mentioned by more than 20% of young people by gender and age shows that there were some age-related differences (Table 9). The proportion of young people mentioning *'reduced sickness/improved recovery'* increased with age. Those aged 20 to 24 years (33.7%) were significantly more likely than those aged 10 to 14 years (21.2%) to mention this benefit. The proportion mentioning *'improved sports performance' re*duced with age. Those aged 20 to 24 years (8.8%) were significantly less likely than those aged 10 to 14 years (25.9%) to mention this benefit.

Table 9: Benefits of eating healthily mentioned by young people aged 10 to 24 years

		More Energy			Healthy Weight			Look Better		
		n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		1078	64.0	1.7	662	36.8	1.6	575	34.1	1.9
Gender	Female	521	63.0	2.1	342	38.6	2.2	309	38.5	2.4
	Male	557	65.0	2.2	320	35.4	2.2	266	30.2	2.2
Age group	10-14 years	484	61.3	2.2	309	36.9	2.3	258	31.8	2.4
	15-19 years	362	66.1	2.4	220	36.5	2.6	197	34.1	2.8
	20-24 years	231	67.2	3.6	132	37.3	3.4	120	40.0	3.9

		Sick Less Often / Recover Faster			Feel Good About Self			Better At Sports		
		n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		441	25.0	1.4	369	21.0	1.4	359	20.3	1.4
Gender	Female	211	26.0	2.0	206	24.3	2.0	161	19.8	2.0
	Male	230	24.1	1.9	163	18.1	1.8	198	20.8	1.8
Age group	10-14 years	193	21.2	1.8	150	17.2	1.8	213	25.9	2.1
	15-19 years	149	25.4	2.5	133	24.4	2.4	109	19.1	2.4
	20-24 years	99	33.7	3.5	86	24.6	3.4	37	8.8	1.8

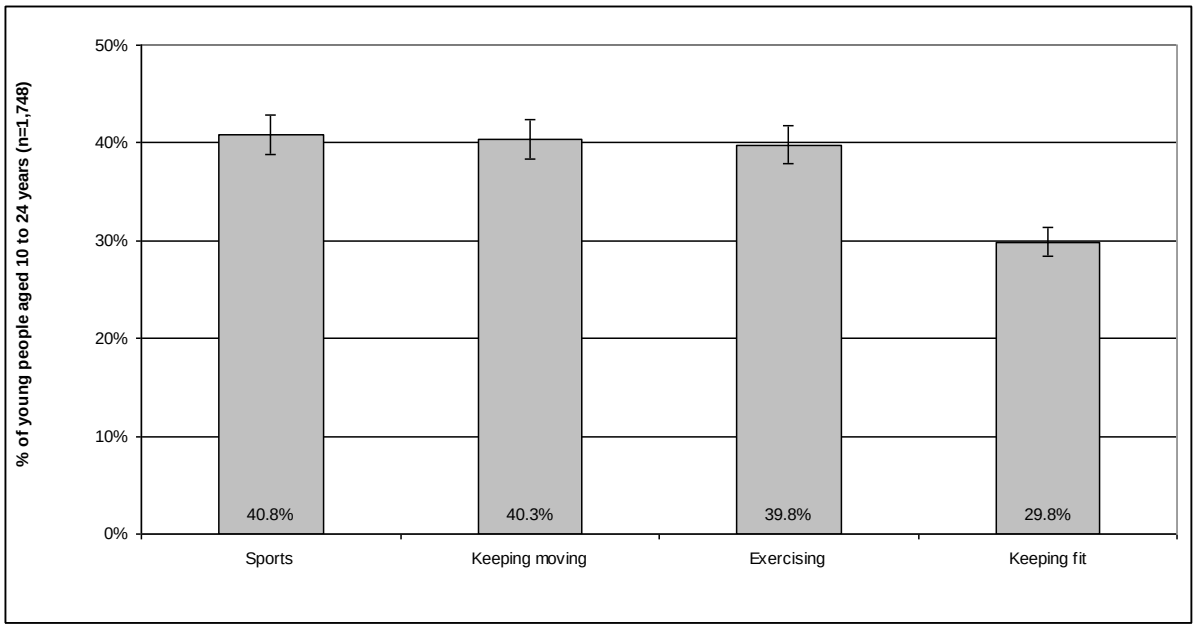
Notes: SEP = standard error of the proportion. Caution should be applied where n<30. Benefits mentioned by fewer than 20% of participants are excluded from the table. n=32 participants did not name any benefit.

3.2.9 Knowledge about what being physically active means

The questions in this section were asked to explore young people's knowledge about what being physically active involves. Young people were asked, *"What do you think being physically active means?"* The responses to this question were recorded word-for-word by the interviewers and then grouped into categories for analysis. Multiple responses were allowed for this question. A summary of the responses is provided in Table 10.

Sport and other forms of exercise were recognised by young people as physical activity (Figure 8).

Figure 8: Meaning of being physically active among young people aged 10 to 24 years



Notes: SEP = standard error of the proportion. Responses mentioned by fewer than 20% of young people are not shown. 1.8% of young people mentioned something other than that shown and 1.3% did not answer this question.

Looking at the responses mentioned by more than 20% of young people by age and gender, shows there were some gender and age-related differences (Table 10).

- Females (46.7%) were significantly more likely than males (33.8%) to say *'exercising'* meant being physically active.
- People in the younger age groups were more likely to say being involved in sports meant being physically active, while those in the older age groups were more likely to mention exercising. Specifically, those aged 20 to 24 years (26.9%) were significantly less likely than those aged 10 to 14 years (48.8%) to mention '*sports'*. Young people aged 15 to 19 years (37.2%) were significantly less likely than those aged 10 to 14 years to say this. Both those aged 20 to 24 years (52.8%) and those aged 15 to 19 years (45.1%) were significantly more likely than those aged 10 to 14 years (31.0%) to mention '*exercising*'.

Table 10: Meaning of being physically active mentioned by young people aged 10 to 24 years

		Being Involved In Sports			Keep Moving			Exercising			Keeping Fit		
		n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 years, n=1748)		685	40.8	1.8	715	40.3	1.6	689	39.8	1.6	523	29.9	1.6
Gender	Female	302	37.1	2.5	342	40.1	2.2	380	46.7	2.3	259	30.3	2.2
	Male	383	44.0	2.3	373	40.5	2.2	309	33.8	2.1	264	29.5	2.1
Age group	10-14 years	384	48.8	2.3	326	38.5	2.3	246	31.0	2.0	283	31.8	2.1
	15-19 years	208	37.2	2.8	230	40.0	2.8	266	45.1	2.8	154	29.3	2.6
	20-24 years	92	26.9	3.6	159	45.3	3.5	176	52.8	4.4	86	25.9	3.2

Notes: SEP = standard error of the proportion. Caution should be applied where n<30. This table excludes initiatives mentioned by fewer than 20% of young people. n=19 participants could not answer this question or refused to do so.

3.2.10 Knowledge about how much physical activity is needed to stay healthy

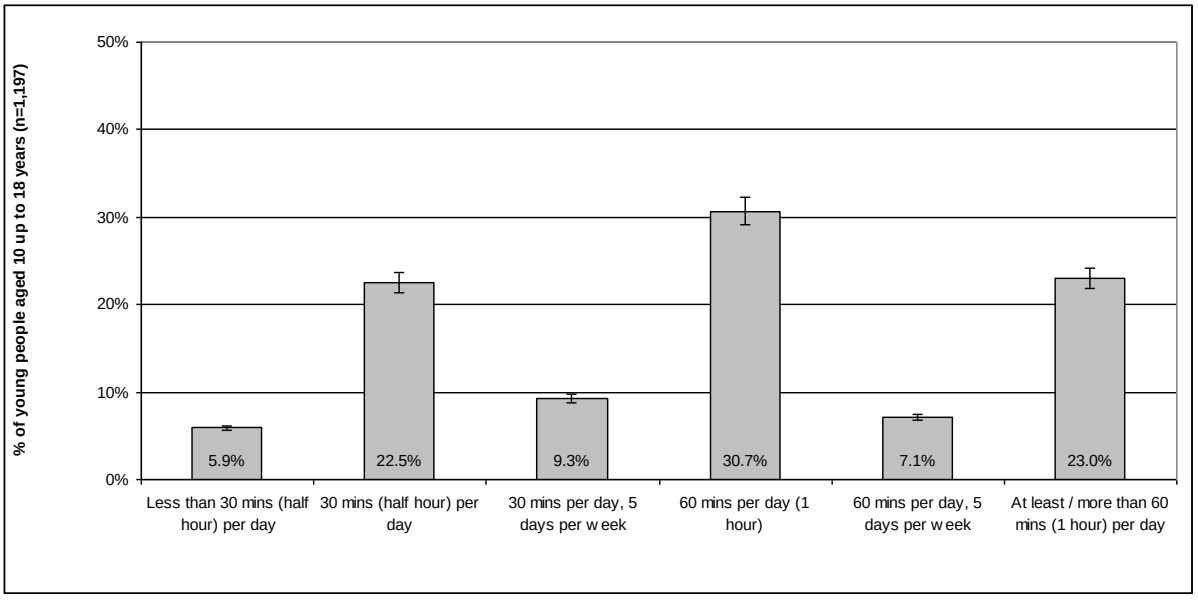
Young people were asked *"In general, how many minutes of physical activity do you think people your age need to do each day to stay healthy?"* The purpose of this question was to assess young people's understanding of the amount of time young people should spend being physically active.

New Zealand Physical Activity Guidelines state that children and young people (aged up to 18 years) should, throughout each day, do 60 minutes or more of moderate- to vigorous-intensity physical activity. The guidelines define moderate-intensity physical activity as the equivalent of a brisk walk and vigorous-intensity physical activity as one that causes people to "huff and puff". Young people aged 18 years or older come under the adult guidelines, which recommend participating in at least 30 minutes of moderate-intensity physical activity on most (5), if not on all, days of the week.

The responses to this question were listed but not shown to young people, so interviewers matched responses to the options. Young people were also free to add responses that were not listed. These were recorded and grouped into existing or new categories later. Because the guidelines are different for young people aged up to 18 years and those aged 18 years and over, the responses to this question are shown separately for the two age groups.

For young people aged from 10 up to 18 years (Figure 9), three out of 10 (30.7%) said that 60 minutes per day (1 hour) of physical activity was needed by people their age to stay healthy. Other responses were divided between those who said it was 30 minutes or less per day or on 5 days per week (37.7%) and those who said it was 60 minutes on 5 days or more than 60 minutes (30.1%).

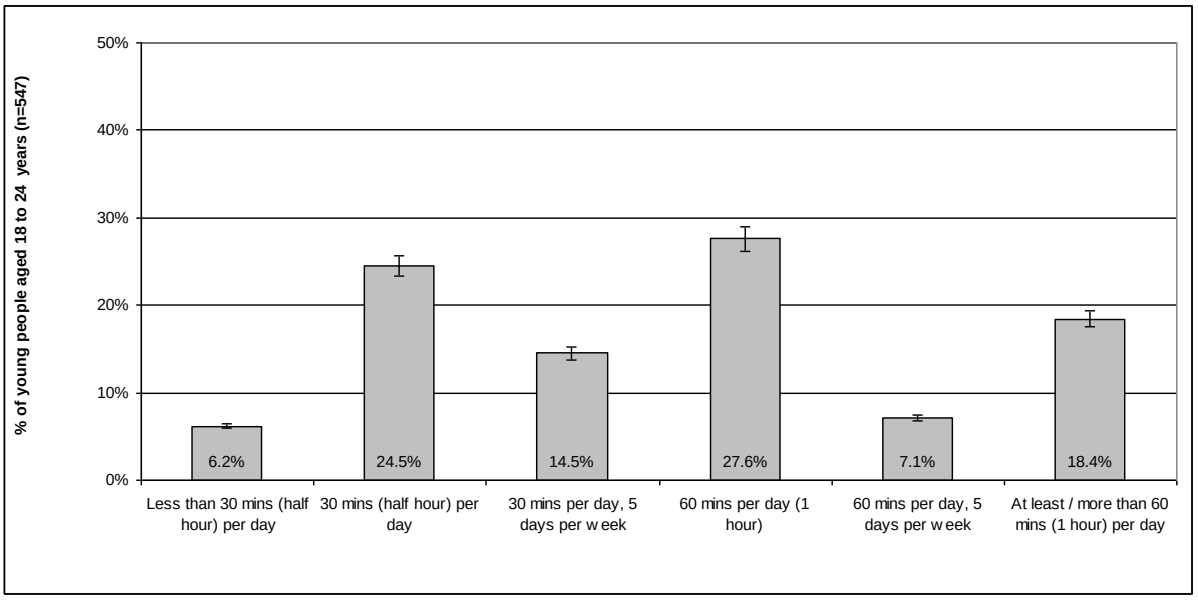
Figure 9: Knowledge of the length of time young people need to be physically active to be healthy (10 up to 18 years)



Notes: 0.2% of children mentioned a time other than those shown. 1.1% did not know and 0.2% did not answer this question.

For young people aged 18 to 24 years (Figure 10), the pattern of responses was very similar to that for the younger age group (10 up to 18 years).

Figure 10: Knowledge of the length of time young people need to be physically active to be healthy (18 to 24 years)



Notes: 0.8% of young people mentioned a time other than those shown and 0.9% did not know. Three young people were excluded from this analysis due to a processing change affecting the pilot study.

In relation to the recommended level for this age group, two out of five (39.0%) young people aged 18 to 24 years said that 30 minutes per day of physical activity was needed by people their age to stay healthy, with most (24.5%) young people saying this was '*per day'*.

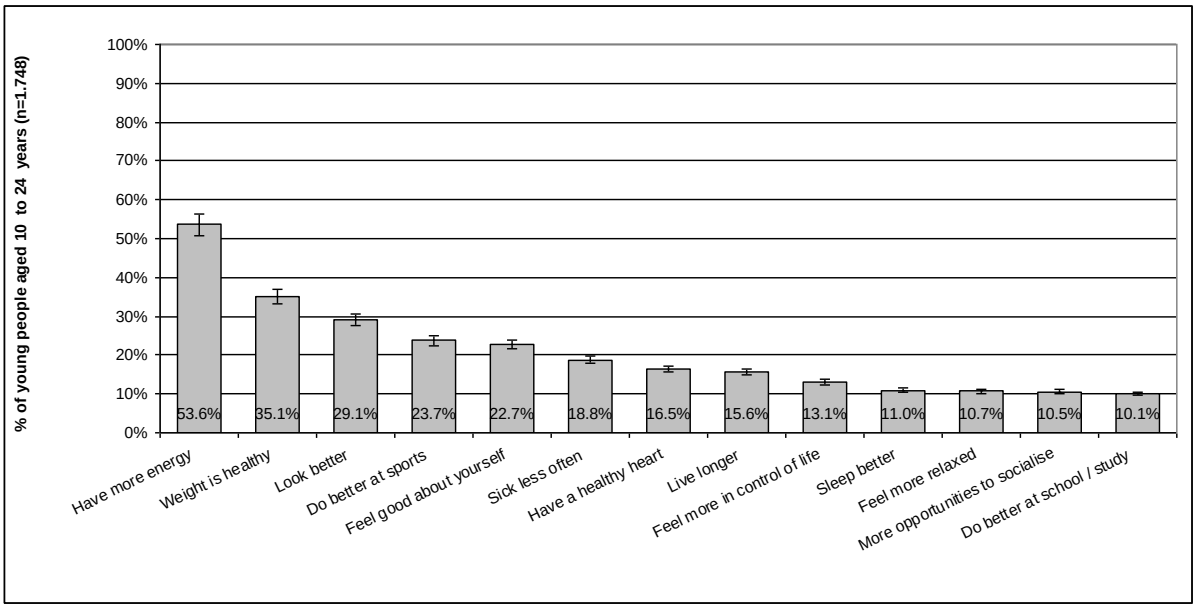
3.2.11 Views about the benefits of being physically active

Young people were asked, "Still thinking about being physically active, what do you think are some of the benefits of being active?" The responses to this question (a range of different benefits) were listed but not shown to young people, so interviewers matched responses to the list. Young people were also free to add responses that were not listed. These responses were recorded and grouped into existing or new categories later. Multiple responses were allowed. A summary of responses is provided in Table 11.

The benefit mentioned most frequently, by just over one-half (53.6%) of young people, was that 'you have more energy' (Figure 11). Young people thought other key benefits were:

- *'your weight is healthy'* – mentioned by more than one-third (35.1%) of young people
- *'you look better'* – mentioned by 29.1%
- *'you do better at sports'* – mentioned by almost one-quarter (23.7%).

Figure 11: Benefits of physical activity among young people aged 10 to 24 years



Notes: includes only listed (but unprompted) responses selected by 10% or more of participants. 2.6% did not answer this question.

Looking at the benefits of being active mentioned by at least 20% of young people by age and gender, there were some gender and age-related differences (Table 11).

- With respect to gender-related differences, females (40.1%) were significantly more likely than males (30.7%) to mention 'healthy weight' as a benefit of physical activity. Females were significantly more (28.2%) likely than males (18.0%) to mention 'feeling good about yourself' as a benefit of being active.
- With respect to age-related differences, the proportions of those mentioning 'looking better' as a benefit of being active increased by age group. Those aged 10 to 14 years (22.7%) were significantly less likely than those aged 15 to 19 years (34.5%) or those aged 20 to 24 years (36.1%) to say this.
- 'Doing better at sports' was more likely to be mentioned by those in the younger age groups. Young people aged 10 to 14 years (33.1%) were significantly more likely than young people aged 15 to 19 years (18.8%) or those aged 20 to 24 years (8.3%) to mention 'doing better at sports' as a benefit of being active. Note that the value for those aged 15 to 19 years is also significantly higher than for those aged 20 to 24 years.
- 'Feeling good about yourself' was more likely to be mentioned by young adults. Those aged 20 to 24 years (31.1%) were significantly more likely than children aged 10 to 14 years (16.5%) to say this. Young people, aged 15 to 19 years (26.9%) also were significantly more likely than 10-14-year-olds to say a benefit of being active was feeling good about yourself.

Table 11: Benefits of physical activity among young people aged 10 to 24 years

		More Energy			Healthy Weight			Look Better			Do Better At Sports			Feel Good About Self		
		n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (10-24 yrs, n=1748)		905	53.6	1.8	621	35.1	1.6	515	29.1	1.7	427	23.7	1.4	419	22.7	1.4
Gender	Female	456	56.4	2.5	332	40.1	2.3	260	30.8	2.2	191	22.3	1.9	238	28.2	2.5
	Male	449	51.1	2.3	289	30.7	2.0	255	27.6	2.2	236	24.9	1.9	181	18.0	1.6
Age group	10-14 yrs	410	51.3	2.4	268	32.0	2.2	202	22.7	2.2	279	33.1	2.1	146	16.5	1.7
	15-19 yrs	295	53.2	3.0	223	36.3	2.7	197	34.5	2.7	113	18.8	2.3	162	26.9	2.3
	20-24 yrs	199	59.8	3.8	130	40.9	3.5	116	36.1	4.0	35	8.3	1.7	111	31.1	3.4

Notes: SEP = standard error of the proportion. Caution should be applied where n<30. Benefits mentioned by fewer than 20% of young people are excluded from the table. n=48 participants were unable to name any benefit.

3.3 Body size

The most common measures of body size are height, weight, and body mass index (BMI). BMI is a measure of weight adjusted for height, and is calculated by dividing weight in kilograms by height in metres squared (kg/m^2). BMI is often used as an indirect measure of body fatness because it is relatively simple to measure and is correlated with total body fat in populations and most individuals. Valid BMI data were available for 2,491 (99.5%) children and young people.

In this report, international BMI cut-off points have been used to classify body size. For children and young people aged from five to 18 years, the BMI cut-off points developed by the International Obesity Task Force (IOTF) were used to define underweight, normal, overweight and obesity.[16 17] For young people aged 18 to 24 years, the World Health Organization (WHO) BMI cut-off points for adults were used to define underweight, normal, overweight and obesity (BMI <18.5, 18.5-24.9, 25.0-29.9, $\geq$30kg/m^2, respectively). The IOTF BMI cut-off points are gender and age-specific and have been designed to coincide with the WHO cut-off points for adults at age 18 years For more information on BMI cut-off points refer to the Body Size section in *A Portrait of Health: Key results of the 2006/07 New Zealand Health Survey*[18] and the *Body Size Technical Report*: *Measurements and classifications in the 2006/07 New Zealand Health Survey*.[19]

Obesity in children and young people is associated with many serious health problems, including poor self-esteem, depression, cardiovascular risk factors, type 2 diabetes and musculoskeletal problems. Children and young people who are obese are also likely to be obese as adults. Being underweight is associated with increased risk of infection and can cause growth and developmental delays.

Most (60.6%) children and young people were in the normal range for BMI; 22.5% were overweight, 13.0% were obese and 3.9% were underweight (Table 12). The prevalence of obesity varied by ethnic group (total response): Pacific (35.7%), Māori (20.6%), New Zealand European/Other (9.0%) and Asian (7.1%).

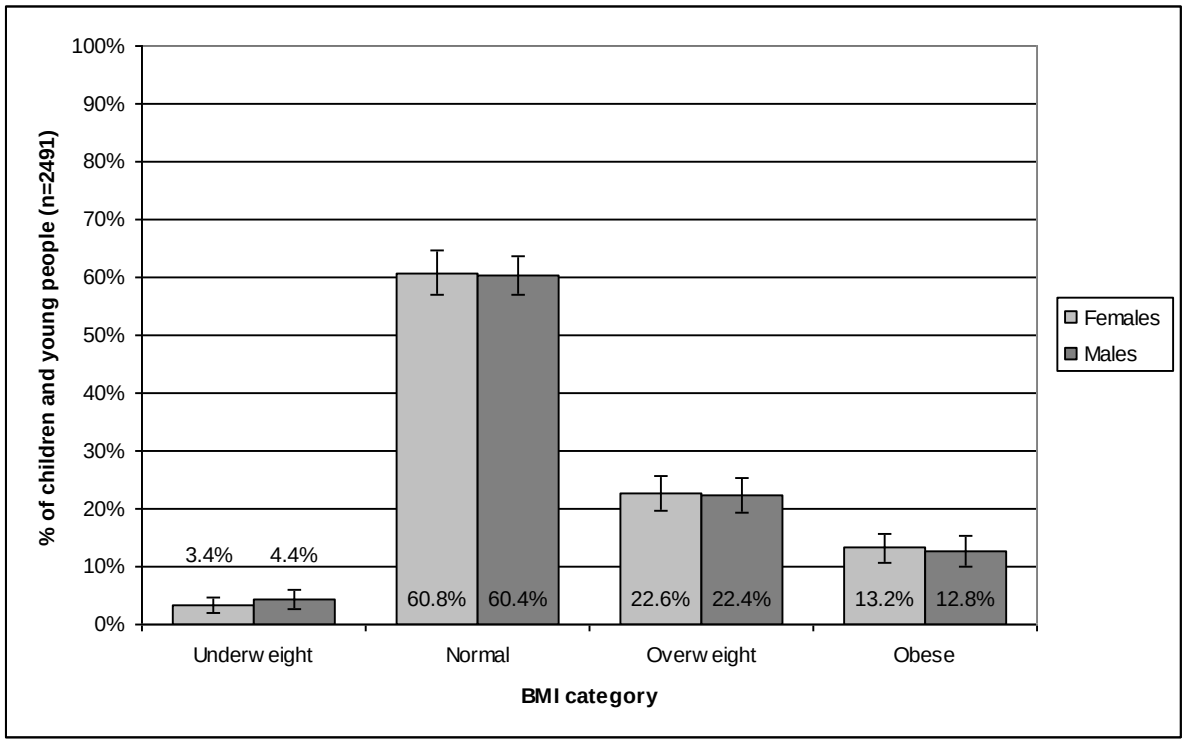
There was no difference in the proportion of children and young people in each BMI category by gender (Figure 12).

Table 12: Body size in children and young people aged 5 to 24 years

BMI category												
		Underweight			Normal			Overweight			Obese		
		n	%	SEP	n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (5-24 years)		103	3.9	0.5	1525	60.6	1.4	567	22.5	1.1	296	13.0	0.9
Gender	Female	47	3.4	0.7	724	60.8	1.9	275	22.6	1.6	154	13.2	1.3
	Male	56	4.4	0.9	801	60.4	1.7	292	22.4	1.5	142	12.8	1.4
Age group	5-9 years	25	3.3	0.8	515	68.8	2.1	140	16.9	1.8	76	11.0	1.5
	10-14 years	37	5.3	1.3	493	57.9	2.3	193	22.8	1.8	100	14.0	1.7
	15-19 years	27	3.7	0.8	346	61.4	2.7	137	24.6	2.4	60	10.3	1.6
	20-24 years	14	2.1	0.7	171	50.7	3.9	97	28.6	3.3	60	18.6	2.9
Ethnic group (total response)	Māori	7	1.6	0.9	237	50.1	2.9	132	27.7	2.7	91	20.6	2.5
	Pacific	4	1.0	0.5	82	34.0	3.8	70	29.3	3.4	82	35.7	3.7
	Asian	27	7.7	1.6	207	66.3	3.4	64	19.0	2.6	25	7.1	1.6
	NZEO	70	4.0	0.7	1170	66.5	1.6	382	20.5	1.2	156	9.0	0.9
Level of deprivation	1 (least deprived)	26	5.3	1.9	369	73.4	2.5	91	16.8	1.6	27	4.5	0.9
	2	24	5.5	1.3	307	62.7	2.9	114	23.8	2.7	36	8.0	1.5
	3	20	3.3	0.9	337	61.6	3.0	117	22.2	2.3	63	12.9	1.9
	4	21	3.3	0.8	241	57.0	3.2	107	25.1	2.8	59	14.6	2.2
	5 (most deprived)	12	2.6	0.9	264	49.9	2.9	137	24.7	2.6	111	22.8	2.5
Area	Rural	16	3.4	0.9	246	62.9	2.8	86	24.0	2.4	37	9.7	1.7
	Urban	87	4.0	0.6	1279	60.3	1.5	481	22.3	1.2	259	13.4	1.0

Notes: SEP = standard error of the proportion. Caution should be applied where n<30. Table excludes 12 participants who did not have a valid BMI measurement.

Figure 12: BMI category for children and young people aged 5 to 24 years



Notes: Excludes 12 participants who did not have valid BMI measurements.

Overall, the prevalence of obesity was highest in young people aged 20-24 years (Table 12). However, there was no clear pattern of obesity increasing with age in either females or males (Figure 13). Females aged 20-24 years were significantly more likely to be obese than males of the same age.

The prevalence of obesity increased as the level of deprivation increased (Table 12). For both females and males, the prevalence of obesity was significantly higher in children and young people living in the most deprived areas (quintile 5) compared with those living in the least deprived areas (quintile 1) (Figure 14).

Figure 13: Prevalence of obesity among children and young people aged 5 to 24 years, by age group and gender

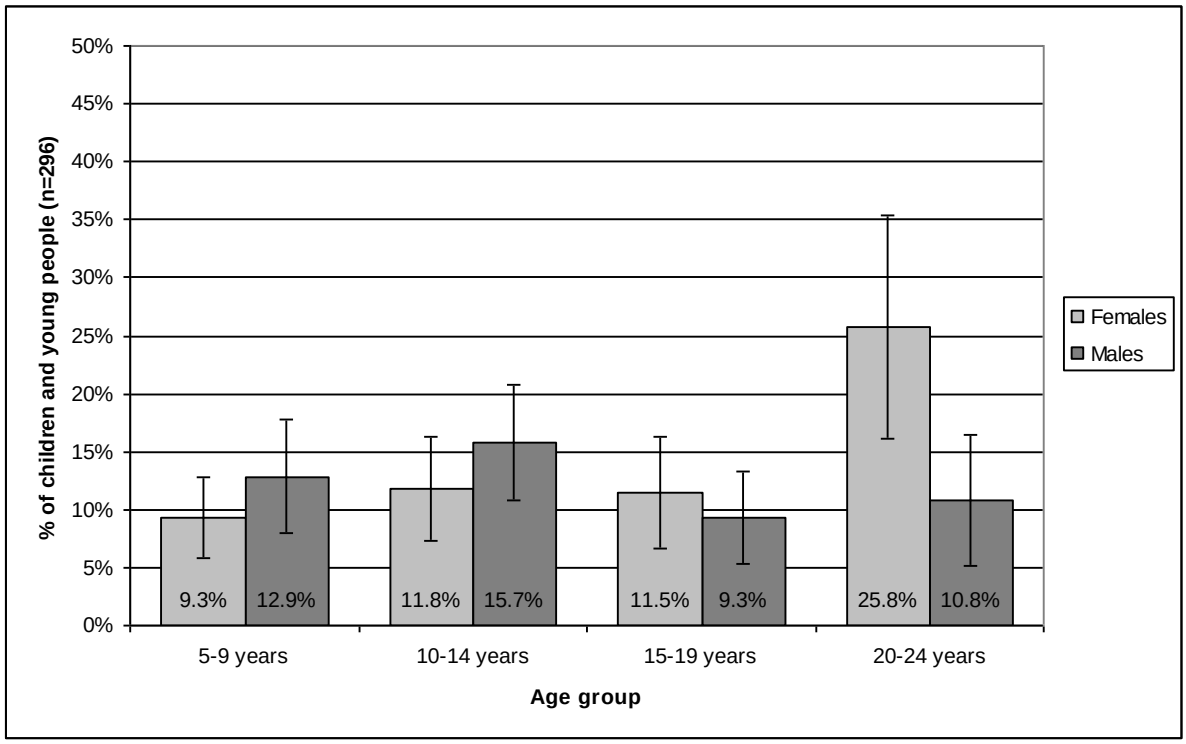
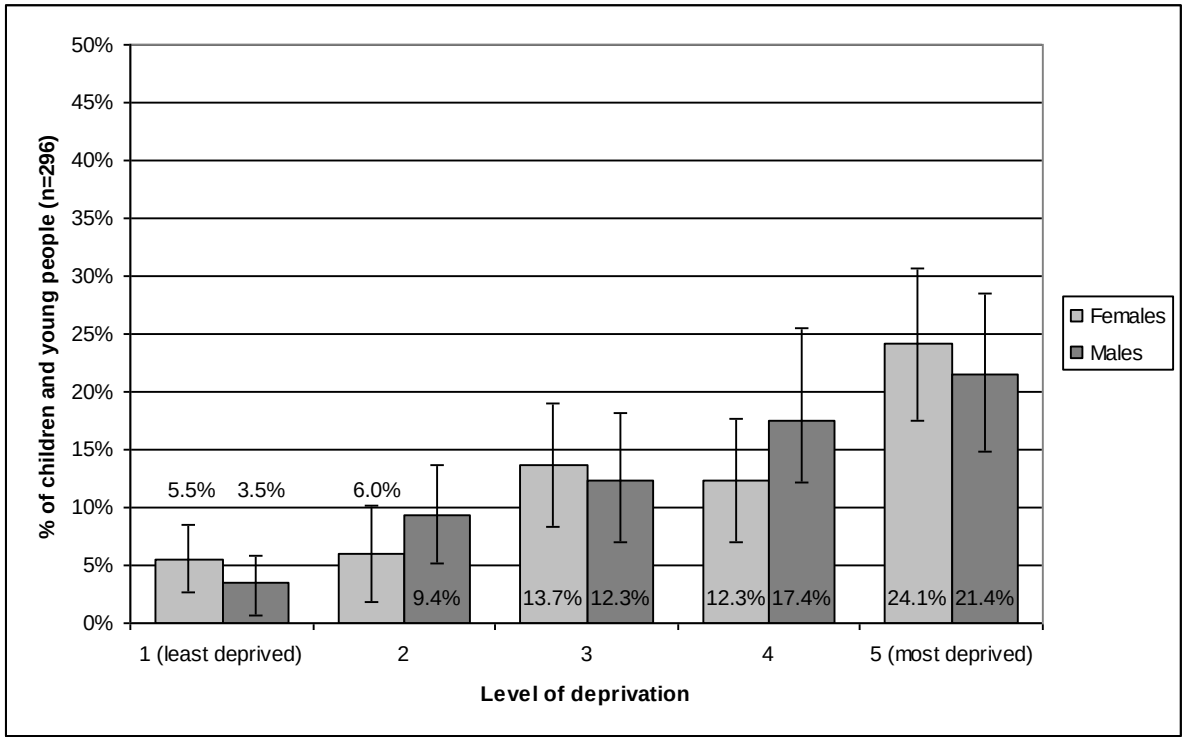


Figure 14: Prevalence of obesity among children and young people aged 5 to 24 years, by level of deprivation and gender



3.4 Dietary Habits

All participants completed a Dietary Habits Questionnaire (DHQ) focused on food, drinks and dietary habits associated positively or negatively with health. The DHQ included questions on foods from the Ministry of Health's four Food and Nutrition Guideline food groups (vegetables and fruit; breads and cereals; milk and milk products; and lean meat and alternatives), as well as foods and drinks high in sugar, fat and/or salt and behaviours associated with food and nutrient intake.

For many questions in the DHQ, there were up to eight response options, from never/none to seven. When there were no specific recommendations regarding the amount or frequency of consumption of a particular food or drink, it was not possible to aggregate responses in a meaningful way. Without aggregating categories, the number of responses for each response category was often too small to present results by the full range of socio-demographic variables used in other sections of this report. Therefore, only results that were based on a sufficiently large number of responses for socio-demographic subgroups are presented in this section. For further information refer to the Technical Report.

3.4.1 Fruit and vegetables

It is recommended that children and young people eat five or more servings of vegetables and fruit each day, comprising of three or more servings of vegetables and two or more servings of fruit.[20 21] Children and young people were asked how many servings of vegetables and fruit – fresh, frozen or canned – they consumed per day in an average week. Response options ranged from none to four or more times per week. Responses were grouped into those meeting each guideline or not meeting each guideline.

The proportion of children and young people meeting guidelines for vegetable and fruit intake is shown in Table 13. Overall, two-thirds (68.6%) of children and young people met the guideline for fruit intake (≥2 servings per day), 39.7% met the guideline for vegetable intake (≥3 servings per day), and 31.7% met the guideline for both vegetable and fruit intake (≥5 servings per day).

Females were more likely than males to meet guidelines for fruit and vegetable intake, but differences were not significant (Table 13). The proportion of children and young people meeting guidelines for fruit intake decreased with age (Figure 15). There was no clear age-related pattern for vegetable intake or combined vegetable and fruit intake, although children aged 10-14 years were slightly more likely to meet the guidelines than other age groups (Figure 15).

There was no difference in the proportion of children and young people meeting the guideline for fruit intake by level of deprivation, but for vegetable intake and combined vegetable and fruit intake, children and young people living in the most deprived areas (quintile 5) were less likely to meet the guideline than those living in other areas (quintiles 1-4) (Table 13).

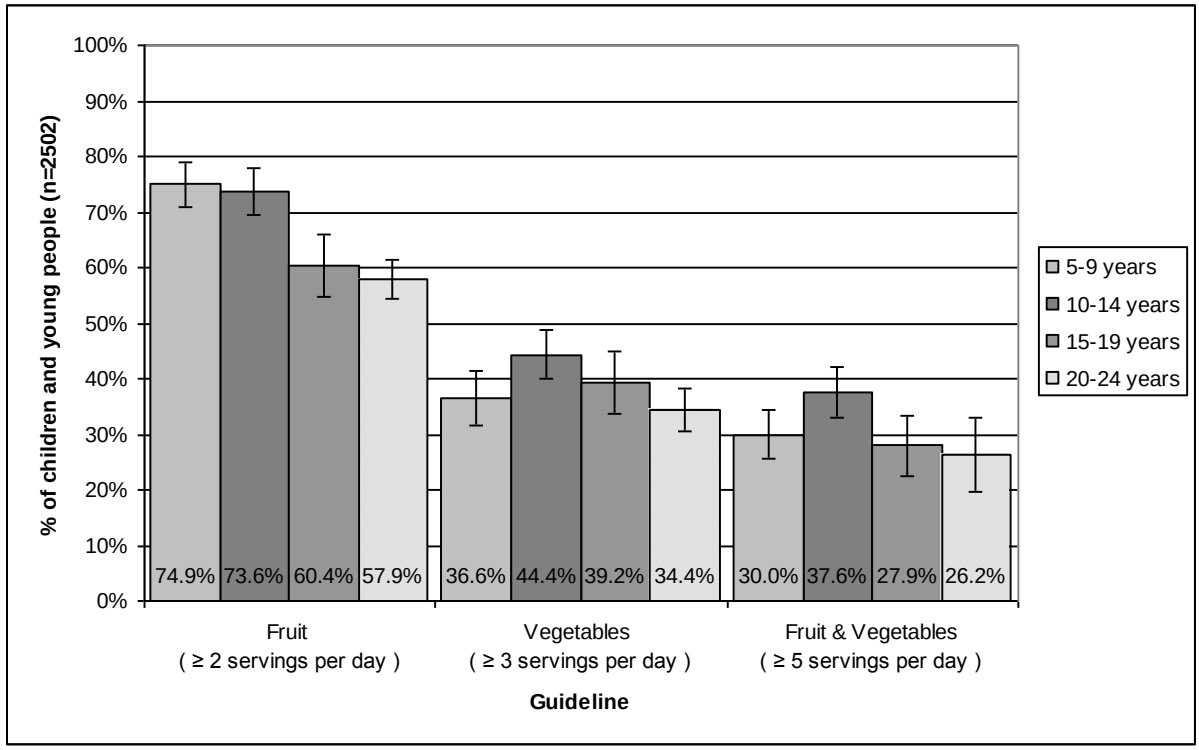
Children and young people living in rural areas were significantly more likely to meet all three guidelines for vegetable and fruit intake than those living in urban areas (Figure 16).

Table 13: Proportion of children and young people meeting guidelines for fruit and vegetable intake

		Guideline								
		Fruit ≥ 2 servings per day			Vegetables ≥ 3 servings per day[1]			Fruit and vegetables ≥ 5 servings per day[1]		
		n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (5-24 years)		1725	68.6	1.3	1014	39.7	1.6	808	31.7	1.4
Gender	Female	872	71.2	1.8	518	42.3	2.1	422	34.6	2.0
	Male	853	66.1	1.8	496	37.2	1.8	386	29.0	1.7
Age group	5-9 years	567	74.9	2.1	283	36.6	2.5	240	30.0	2.3
	10-14 years	609	73.6	2.1	366	44.4	2.3	305	37.6	2.3
	15-19 years	351	60.4	2.8	238	39.2	2.9	168	27.9	2.7
	20-24 years	198	57.9	3.6	127	34.4	3.7	95	26.2	3.4
Ethnic group (total response)	Māori	340	72.0	2.7	174	40.0	3.4	138	32.7	3.3
	Pacific	167	66.4	4.2	64	30.5	4.6	56	22.8	3.7
	Asian	191	61.0	3.6	80	23.2	2.9	59	17.3	2.5
	NZEO	1257	70.0	1.4	821	44.2	1.8	658	35.7	1.7
Level of deprivation	1 (least deprived)	369	67.8	3.3	229	40.9	3.5	189	33.0	3.3
	2	340	70.9	2.7	210	40.3	3.4	171	33.2	3.3
	3	368	69.9	2.4	225	44.4	3.2	173	35.5	3.0
	4	294	66.5	3.4	182	43.9	4.0	142	33.0	3.7
	5 (most deprived)	350	68.2	2.8	163	30.4	3.6	129	24.8	3.2
Area	Rural	294	79.0	2.4	209	51.6	4.3	171	42.0	3.8
	Urban	1431	67.3	1.4	805	38.2	1.7	637	30.4	1.5

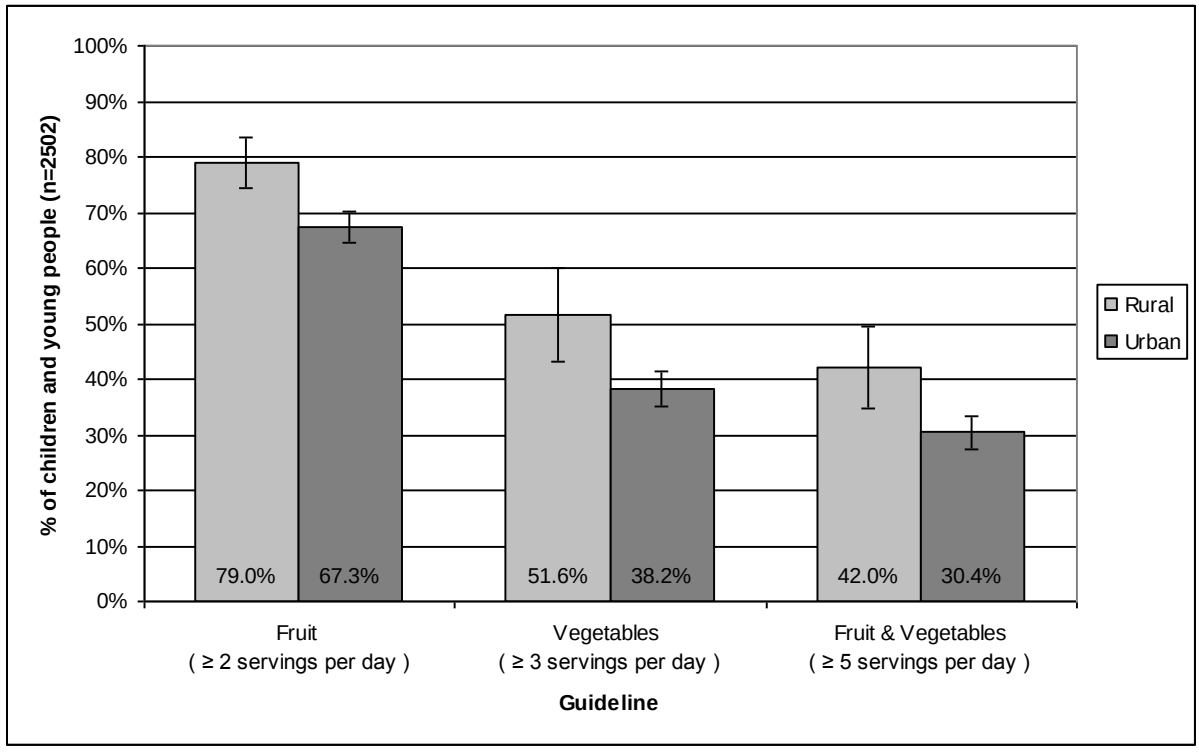
Notes: SEP = standard error of the proportion. Caution should be applied where n<30. [1]Excludes 1 participant who answered 'don't know' to the question on vegetable intake.

Figure 15: Proportion of children and young people meeting guidelines for fruit and vegetable intake, by age group



Note: Excludes 1 participant who answered 'don't know' to the question on vegetable intake.

Figure 16: Proportion of children and young people meeting guidelines for fruit and vegetable intake, by area (urban/rural)



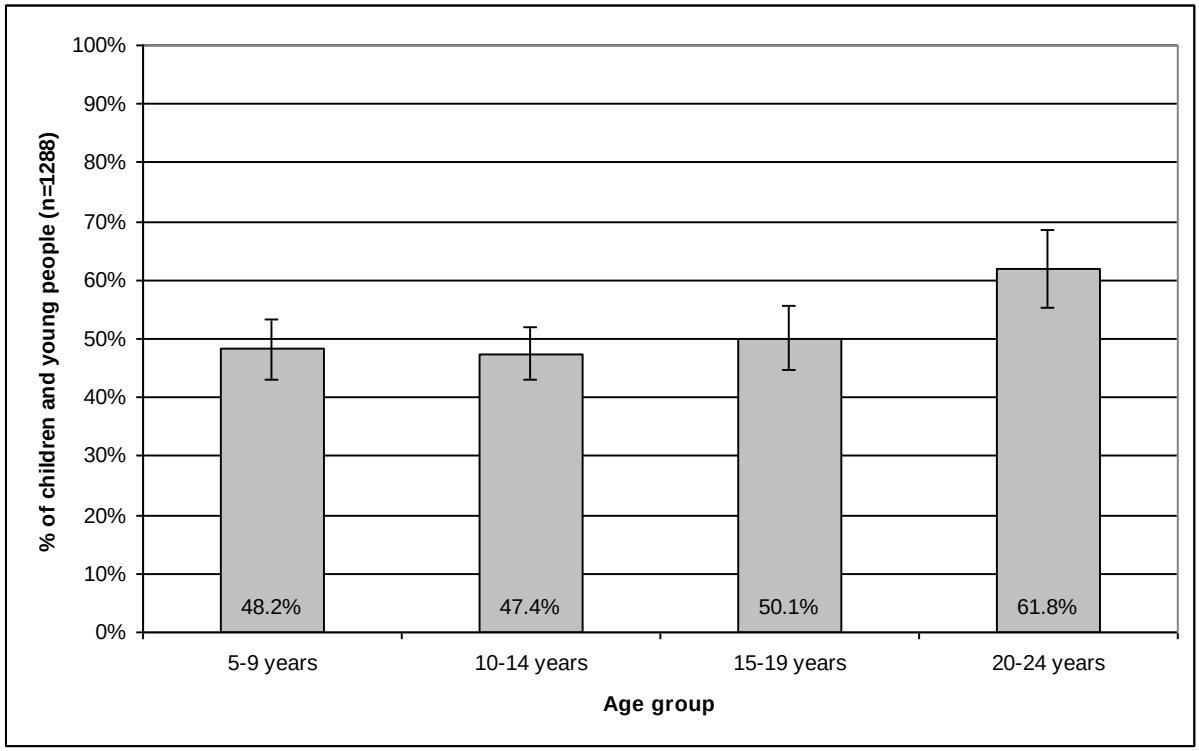
Note: Excludes 1 participant who answered 'don't know' to the question on vegetable intake.

3.4.2 Breads and cereals

It is recommended that children and young people consume at least five servings of breads and cereals each day.[20 21] Whole grain breads and cereals are the best choices because they provide more dietary fibre and micronutrients than refined breads and cereals. The DHQ was not designed to assess intake of breads and cereals against recommended levels, but did ask children and young people how many slices of bread they eat per day (response options ranged from none to seven or more slices) and the type of bread they eat most often.

Nearly all children and young people ate bread every day, with half (50.3%) eating brown, wholemeal or whole grain bread most often, and the remainder eating white bread (41.3%), high-fibre white (7.0%) or other bread (1.4%). Consumption of brown, wholemeal or whole grain bread was the same for females (50.4%) and males (50.3%). Young people aged 20 to 24 years were significantly more likely to eat brown, wholemeal or whole grain bread than all other age groups (Figure 17).

Figure 17: Proportion of children and young people eating brown, wholemeal or whole grain bread, by age group



Note: Excludes 3 participants who refused to answer (n=1) or answered 'don't know' (n=2) to the question on type of bread.

Children and young people were asked how often they ate sandwiches in an average week. Response options ranged from never to seven or more times per week. Most children and young people ate sandwiches or filled rolls 5-6 times a week (36.1%) or seven or more times a week (22.5%). Consumption of sandwiches or filled rolls seven or more times a week was slightly lower for females than males (20.7% vs 24.2%) and decreased as age increased: 36.2%, 21.0%, 15.6% and 12.5% for children and young people aged 5 to 9 years, 10 to 14 years, 15 to 19 years, and 20 to 24 years, respectively.

3.4.3 Milk and milk products

It is recommended that children and young people consume at least two to three servings of milk and milk products (eg, cheese, yoghurt) each day.[20 21] Milk and milk products are a good source of many key nutrients, such as protein, calcium and riboflavin. The DHQ was not designed to assess intake of milk and milk products against recommended levels, but did ask how often milk was consumed – results are presented in section 3.4.6.

3.4.4 Meat, poultry and fish

It is recommended that children and young people consume at least one serving of meat, poultry, fish or alternatives (eggs, dried peas, beans and lentils) each day.[20 21] The DHQ was not designed to assess intake of meat, poultry, fish or alternatives against recommended levels, but children and young people were asked how often they consumed various types of meat, poultry and fish. Response options ranged from never to seven or more times per week. The most common consumption patterns were: red meat 3-4 times a week (45.7%); chicken 1-2 times a week (56.2%); processed meat 1-2 times a week (45.5%); and fresh, canned or frozen fish or shellfish less than once a week (34.7%).

3.4.5 Foods high in fat, sugar and/or salt

Many snack foods, fast foods and takeaways are high in fat, sugar and/or salt so intake of these foods should be limited. Children and young people were asked how often they consumed a range of foods high in fat, sugar and/or salt in an average week. Response options ranged from never to seven or more times per week.

Most children and young people ate potato chips, burger rings, twisties or corn chips either 1-2 times a week (31.0%) or less than once a week (24.6%). One in 15 (6.6%) children and young people ate potato chips, burger rings, twisties or corn chips seven or more times a week, with no difference by gender (female 7.5%; male 5.8%). Consumption of these snack foods seven or more times a week decreased with age, from 8.9% in children aged 5 to 9 years to 2.2% in young people aged 20 to 24 years.

Nearly all children and young people ate hot chips, French fries, wedges or kumara chips either 1-2 times a week (41.7%) or less than once a week (40.1%). Less than one percent (0.6%) of children and young people ate hot chips, French fries, wedges or kumara chips seven or more times a week, with no difference by gender or age (<1.0% for all groups).

Most children and young people ate meat pies or sausage rolls either less than once a week (41.1%) or 1-2 times a week (21.1%). Few (2.3%) children and young people ate meat pies or sausage rolls five or more times a week, with some differences by gender (female 1.0%, male 3.6%) and age group (5 to 9 years 1.6%; 10 to 14 years 1.3%; 15 to 19 years 4.3%; and 20 to 24 years 2.9%).

Nearly all children and young people ate fast food or takeaways either less than once a week (50.0%) or 1-2 times a week (36.3%). Few (2.1%) children and young people ate fast food or takeaways five or more times a week, with no real difference by gender (female 1.9%; male 2.3%). Consumption of these foods seven or more times a week increased with age, from 1.1% in children aged 5 to 9 years to 6.8% in young people aged 20 to 24 years.

Most children and young people ate chocolate, sweets or lollies either 1-2 times a week (39.6%) or less than once a week (21.7%). One in 14 (6.9%) children and young people ate confectionery five or more times a week, with small differences by gender (female 8.0%; male 5.9%) and age group (5 to 9 years 6.2%; 10 to 14 years 5.2%; 15 to 19 years 9.7%; and 20 to 24 years 7.9%).

3.4.6 Drinks

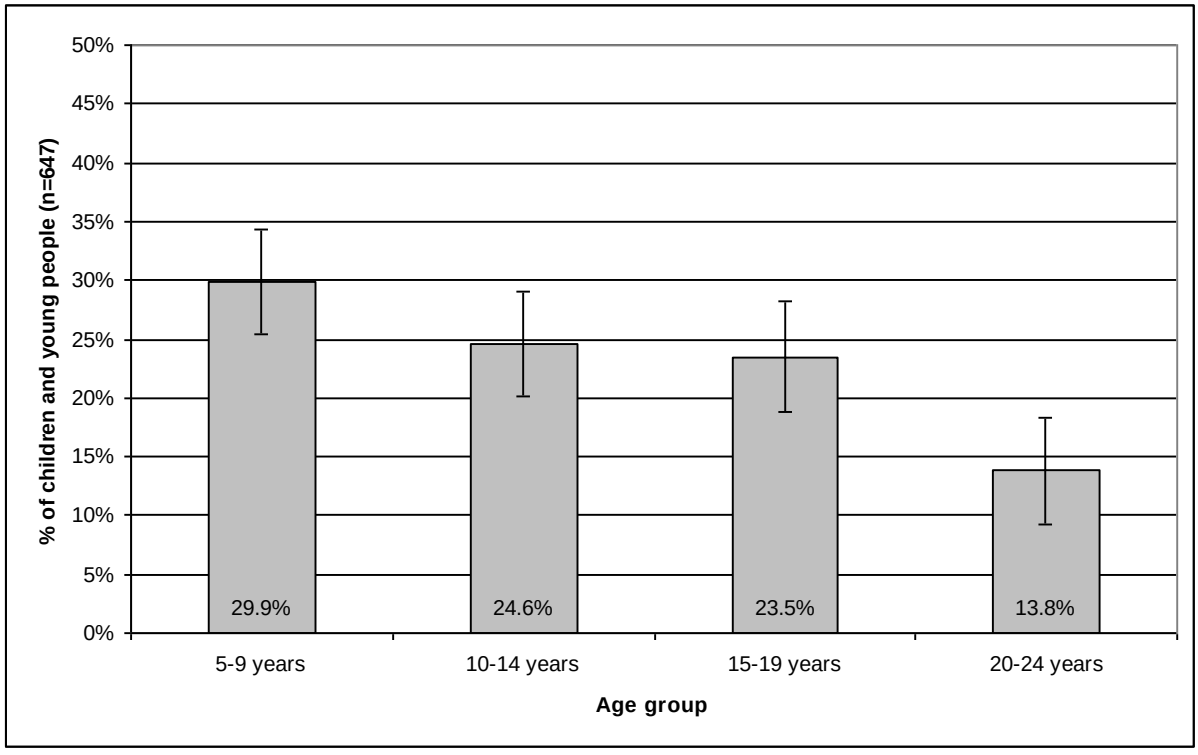
Children and young people were asked how often they drank a range of drinks in an average week. Response options ranged from never to seven or more times per week.

Plain water is the best source of fluid for children and young people. Water is good for quenching thirst, it has no energy (kilojoules), and it contains no sugars than can damage teeth. Water was the mostly commonly consumed drink, with most (85.1%) children and young people drinking plain water seven or more times a week. There was no difference in the proportion of children and young people drinking water seven or more times a week by gender or ethnic group (total response), but younger children aged 5-9 years were slightly more likely to drink water seven or more times a week than older children and young people (92% vs 81-84%).

Plain (ie, unflavoured) milk is also a good source of fluid for children and young people, as well as being a good source of nutrients such as protein, calcium and riboflavin. Nearly two-thirds (62.5%) of children and young people drank plain milk at least once a week, including 24.2% who drank plain milk seven or more times a week. Males (29.2%) were more likely than females (18.8%) to drink plain milk seven or more times a week.

The proportion of children and young people drinking plain milk decreased as age increased, with young people aged 20 to 24 years significantly less likely to drink plain milk seven or more times a week than all other age groups (Figure 18). Overall, 22.5% of children and young people never drank milk, with females (29.6%) more likely than males (16.0%) to never drink milk.

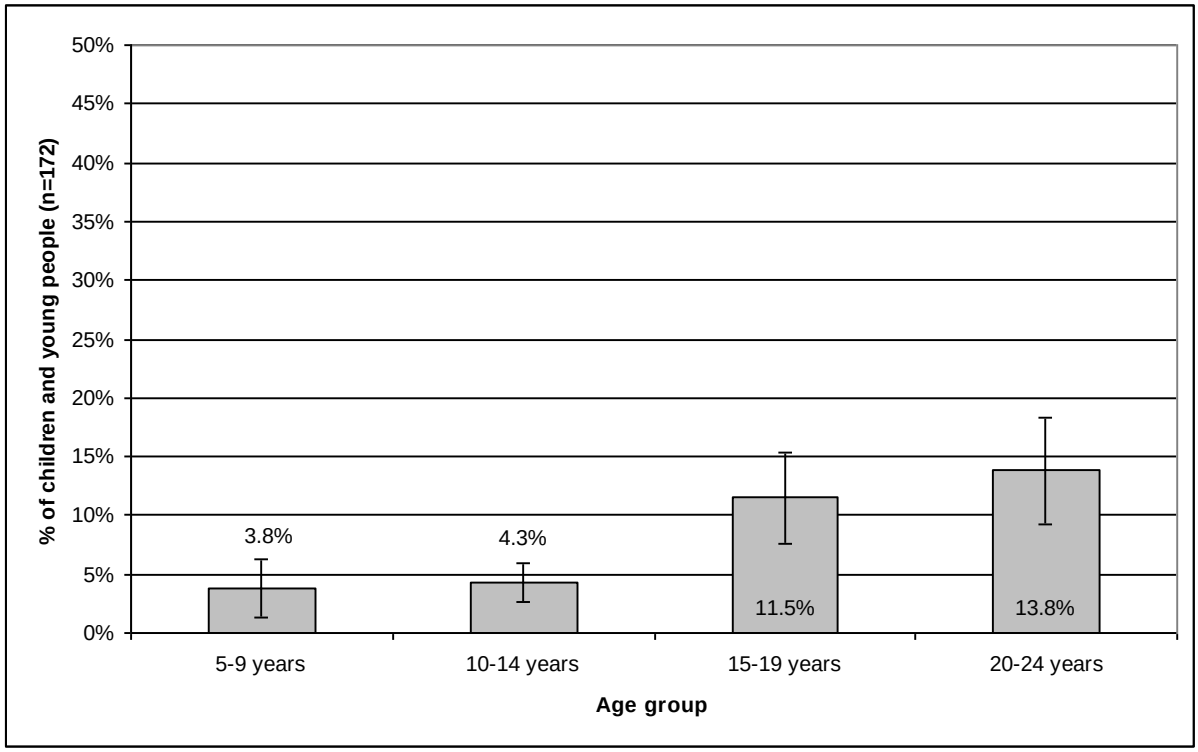
Figure 18: Proportion of children and young people who drink plain milk seven or more times a week



Sugary drinks include powdered drinks, cordial (eg, blackcurrant, lemon barley), carbonated or fizzy drinks (eg, lemonade, cola, and orange), energy drinks, sports drinks, and flavoured waters and teas. It is recommended that children and young people limit their intake of these drinks because they are high in sugar and energy (kilojoules), but contain few beneficial nutrients.

About half (52.6%) of children and young people drank regular fizzy or soft drinks at least once a week. Overall, 7.3% of children and young people drank regular fizzy or soft drinks seven or more times a week, with no difference by gender (female 6.6% male 7.9%). The proportion of children and young people drinking regular fizzy or soft drinks seven or more times a week increased with age (Figure 19).

Figure 19: Proportion of children and young people who drink regular fizzy or soft drinks seven or more times a week



Energy drinks are not recommended for children and young people. In addition to being high in sugar and energy (kilojoules), they contain caffeine which is a stimulant. Most (67.1%) children and young people said they never drink energy drinks and a further 15.5% said they drink them less than once a week. Overall, 3.7% of children and young people had energy drinks five or more times a week, with no difference by gender (female 3.2%; male 4.1%). Consumption of energy drinks five or more times a week increased with age, from 0.2% in children aged 5 to 9 years to 9.7% in young people aged 20 to 24 years.

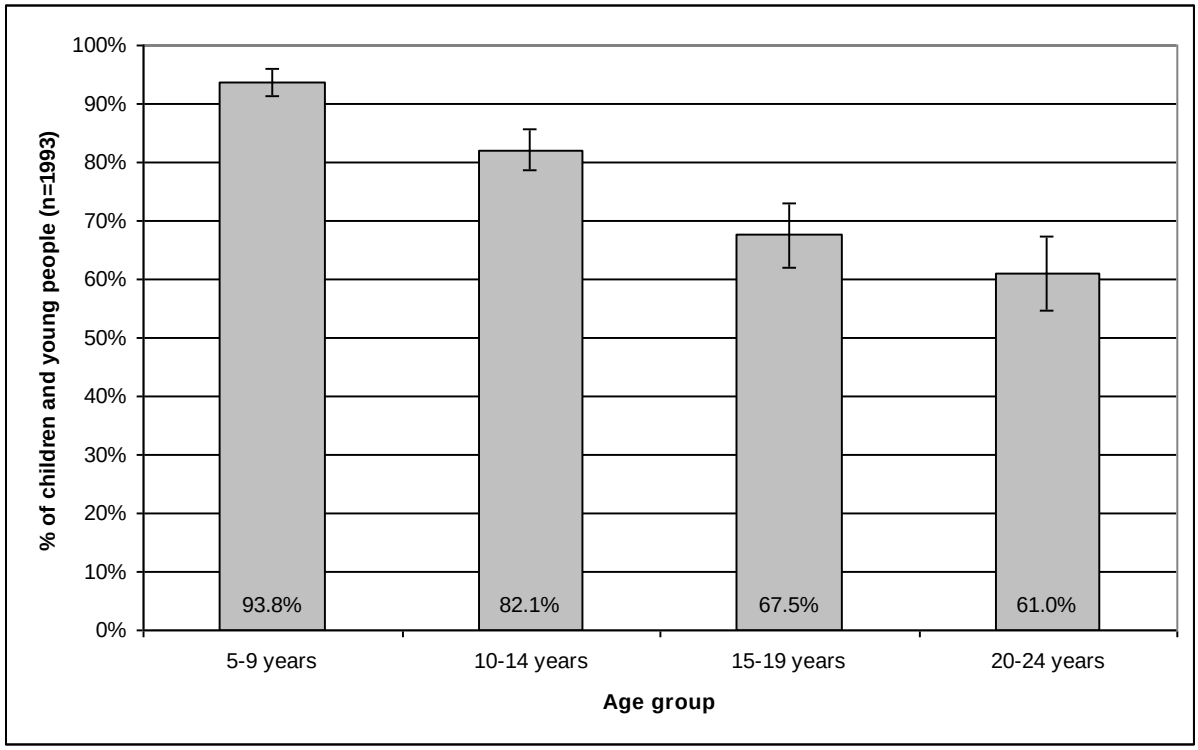
Most (73.1%) children and young people drank fruit juice or drinks at least once a week, including 18.1% who drank fruit juice or drinks seven or more times a week. There were no differences in the proportion of children and young people drinking fruit juice or drinks seven or more times a week by gender or age group.

3.4.7 Meal patterns

The importance of having breakfast has long been recognised. Breakfast consumption is associated with a range of positive health outcomes, including better nutrient intake and a healthy body weight. Children and young people were asked on how many days in an average week they usually have something to eat for breakfast. Response options ranged from none to seven days.

Overall, four out of five (78.7%) children and young people said they usually had something to eat for breakfast on five or more days of the week, with females less likely to do so than males (75.7% vs 81.5%). The proportion of children and young people eating breakfast five or more days a week decreased as age increased (Figure 20). Overall, 4.7% of children and young people did not eat breakfast on any days of the week.

Figure 20: Proportion of children and young people who eat breakfast five or more days a week



Family meals are important for children and young people because they allow the opportunity for role modelling and support for healthy eating. Children and young people were asked how many days in an average week they usually eat their evening meal sitting down with other members of the household. Response options ranged from none to seven days. Four out of five (81.2%) children and young people have their evening meal sitting down with other members of the household on five or more days of the week, with no difference by gender (female 81.8%; male 80.7%). The proportion of children and young people having their evening meal sitting down with other members of the household five or more days of the week decreased with age (Figure 21).

Eating meals in front of the television is not recommended because visual and auditory distractions can adversely affect food selection and intake. Children and young people were asked how many days in an average week they usually eat their evening meal in front of the television. Response options ranged from none to seven days. Overall, one in three (34.2%) children and young people reported eating their evening meal in front of the

television on five or more days of the week, with no difference by gender (34.2% for both females and males). The proportion of children eating their evening meal in front of the television on most days of the week increased with age (Figure 22).

Figure 21: Proportion of children and young people who eat their evening meal sitting down with other members of the household five or more days of the week

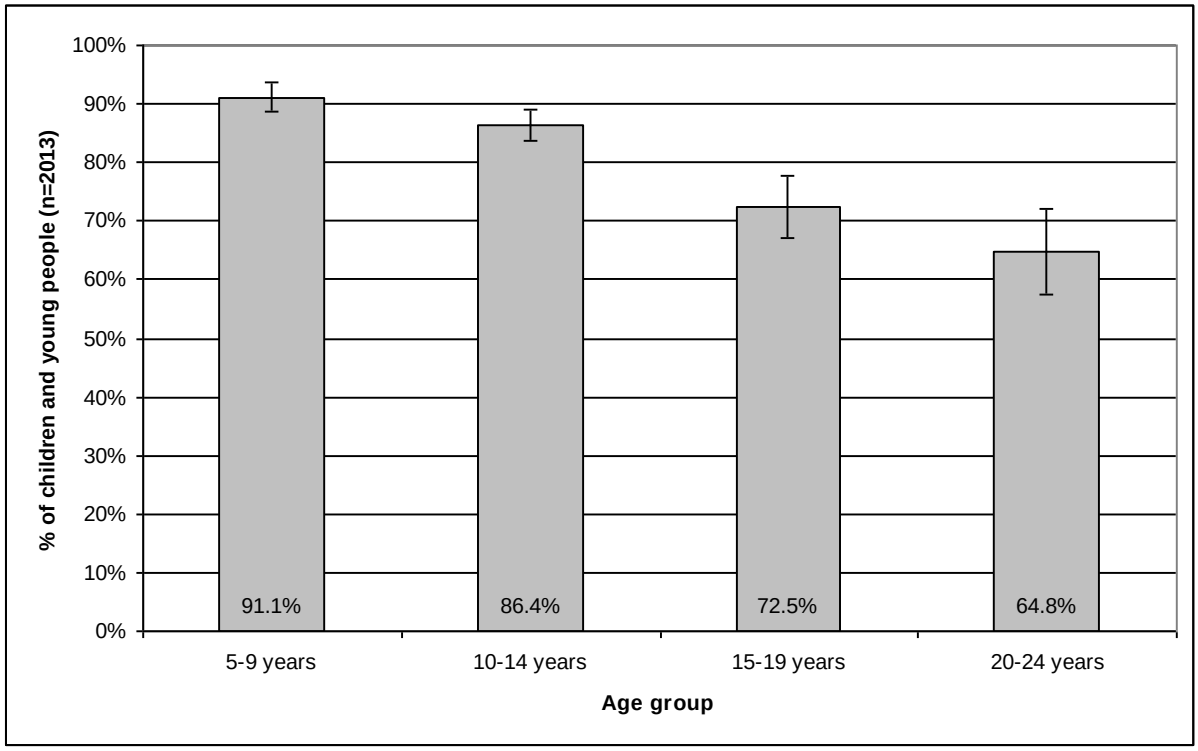
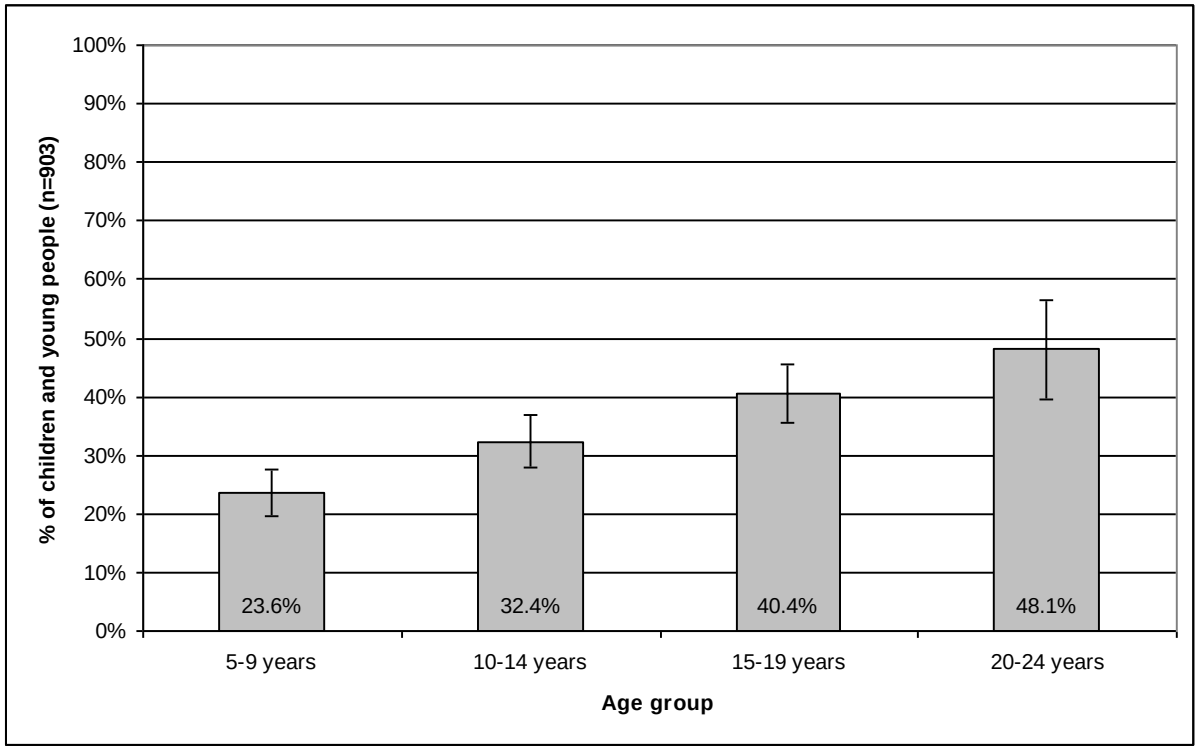


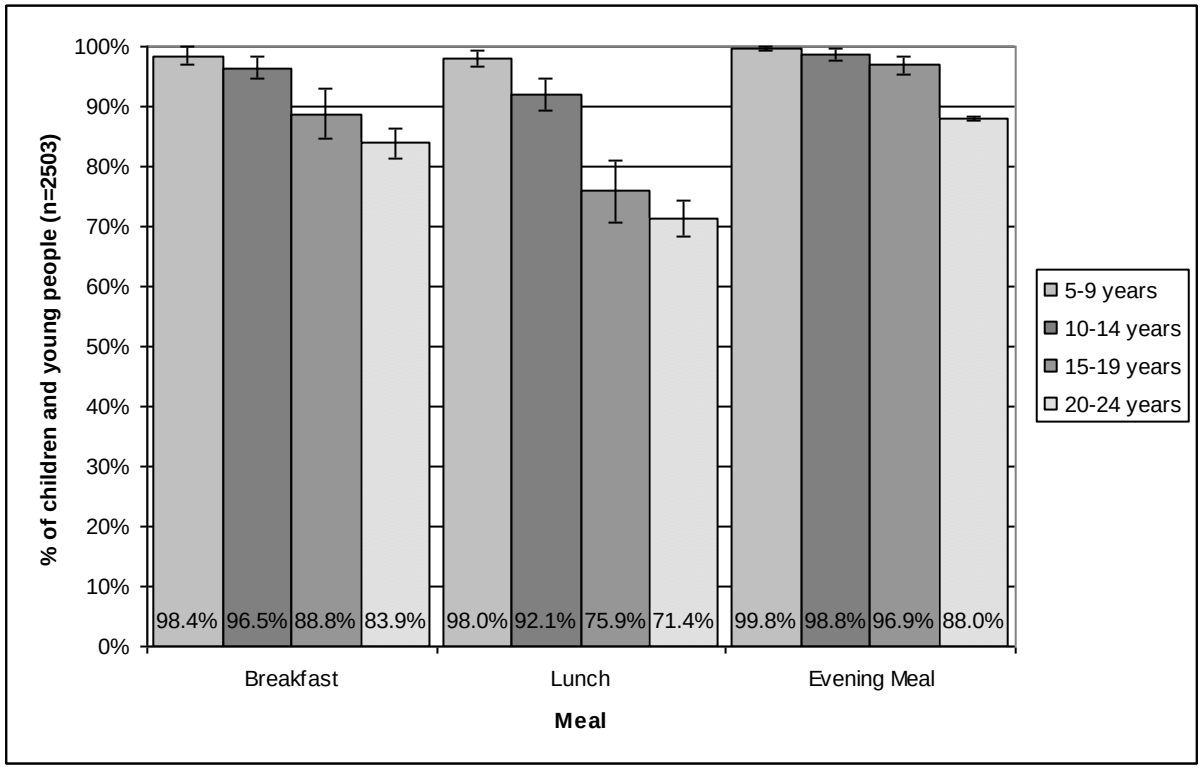
Figure 22: Proportion of children and young people who eat their evening meal in front of the television on five or more nights of the week



3.4.8 Source of meals

Meals from home tend to be more nutritious than meals sourced away from home. Nearly all children and young people sourced their main meals from home (breakfast 93%, lunch 87%, and evening meal 97%). The proportion of children and young people sourcing meals from home did not vary by gender, but decreased with age (Figure 23).

Figure 23: Source main meals for children and young people, by age group



3.4.9 Food shopping and preparation

Children and young people were asked how often they usually shop or help to shop for groceries. Response options ranged from none to seven days. Most children and young people helped to shop for groceries at least sometimes, with females more likely to “always help” than males (Figure 24). Young people aged 20 to 24 years were much more likely to “always help” shop for groceries than other age groups (54% vs 16-20%).

Children and young people were asked how many times they help prepare food for their evening meal in an average week. Response options ranged from none to seven. Three out of four (73.8%) children and young people helped prepare food for their evening meal at least once a week, with females more likely to do so than males (13.9% vs 8.1%). The proportion of children and young people helping to prepare food for their evening meal every day increased with age (Figure 25).

Figure 24: Proportion of children and young people who help to shop for groceries

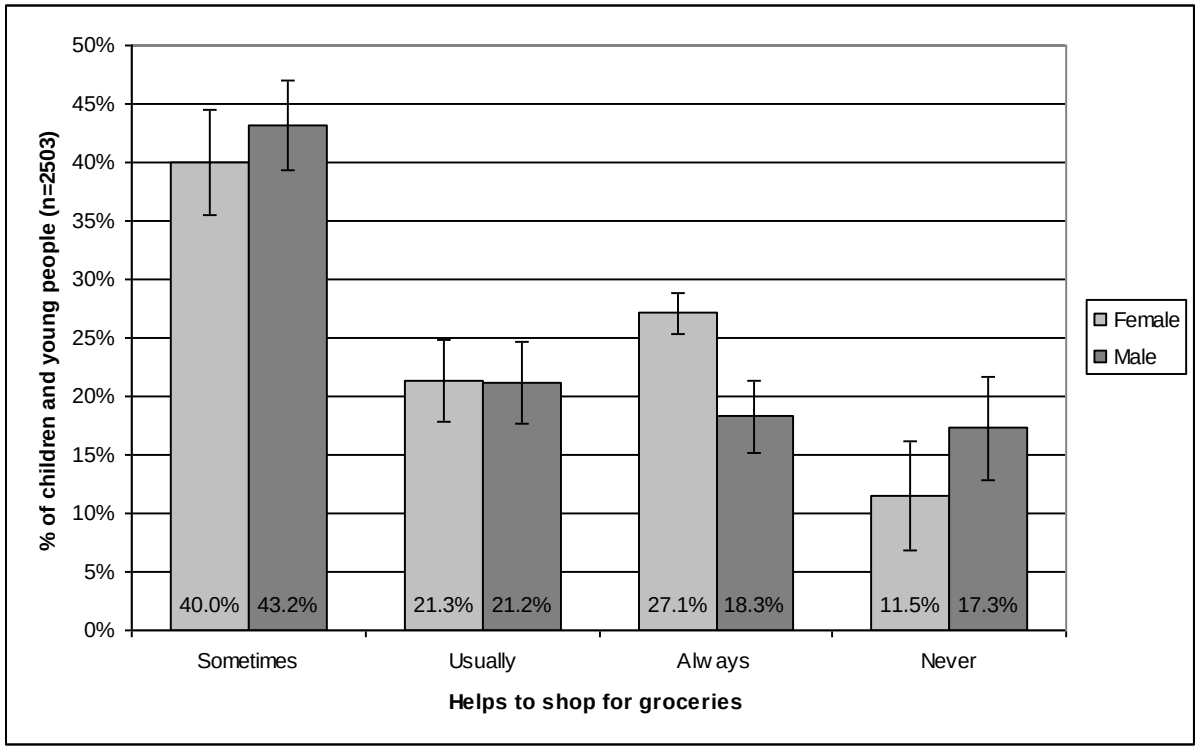
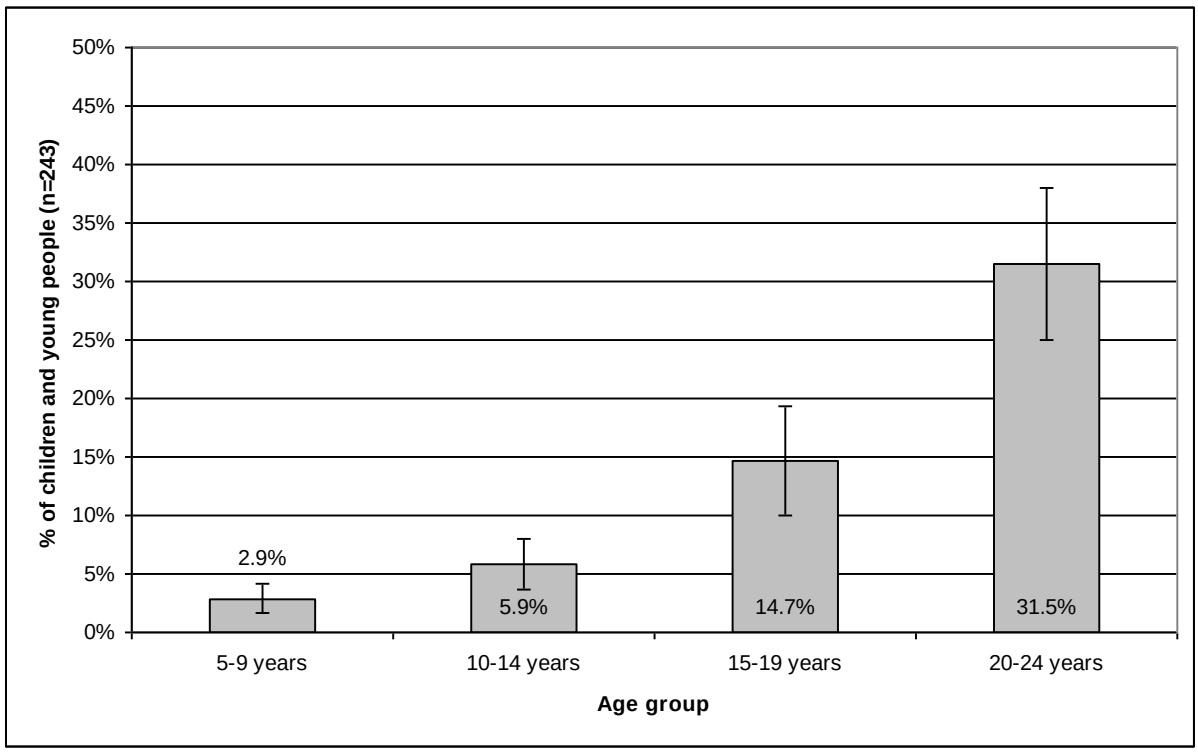


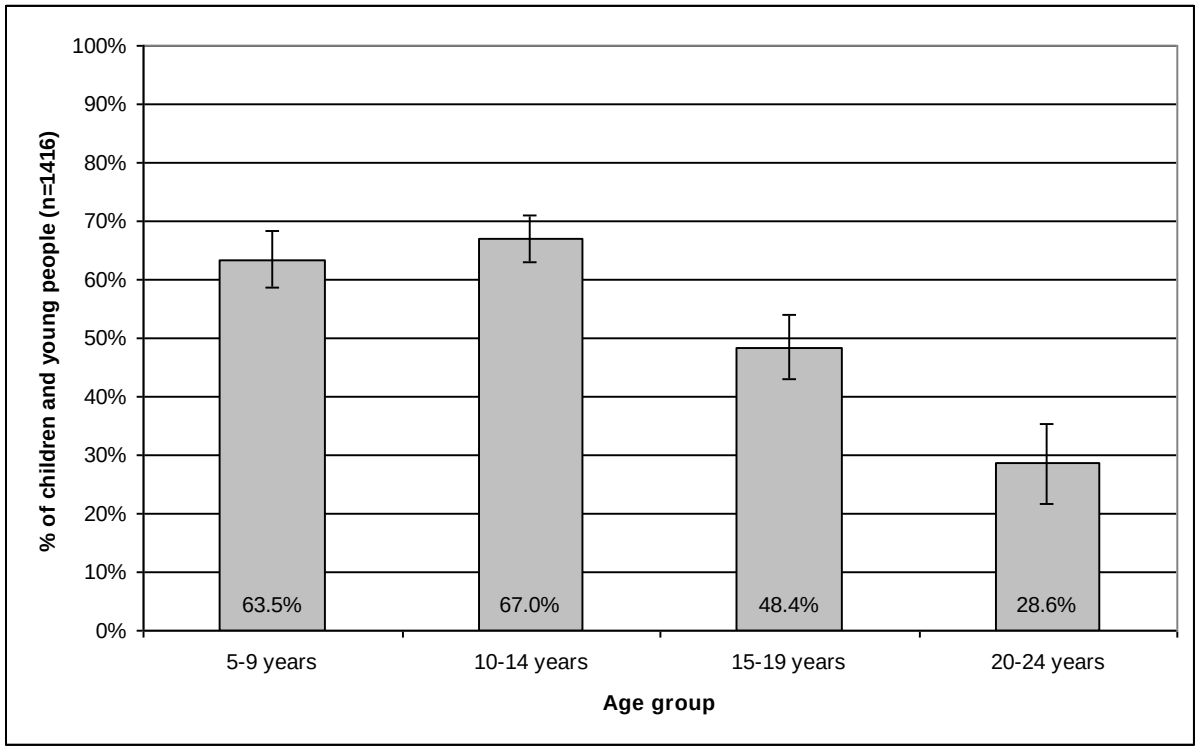
Figure 25: Proportion of children and young people who help to prepare their evening meal seven days a week



There is some evidence that children and young people involved in growing and preparing food eat a wider range of nutritious foods. Children and young people were asked whether they grow vegetables at home or at school. If they answered yes, they were asked if they eat the vegetables they grow.

More than half (56.1%) of children and young people reported growing vegetables at home or at school, with no difference by gender (female 56.6%; male 55.8%). The proportion of children and young people growing vegetables at home or school was higher in children aged 5 to 14 years (Figure 26). Of those children and young people involved in growing vegetables at home or school, nearly all (92.8%) said they ate these vegetables.

Figure 26: Proportion of children and young people who grow vegetables at home or at school

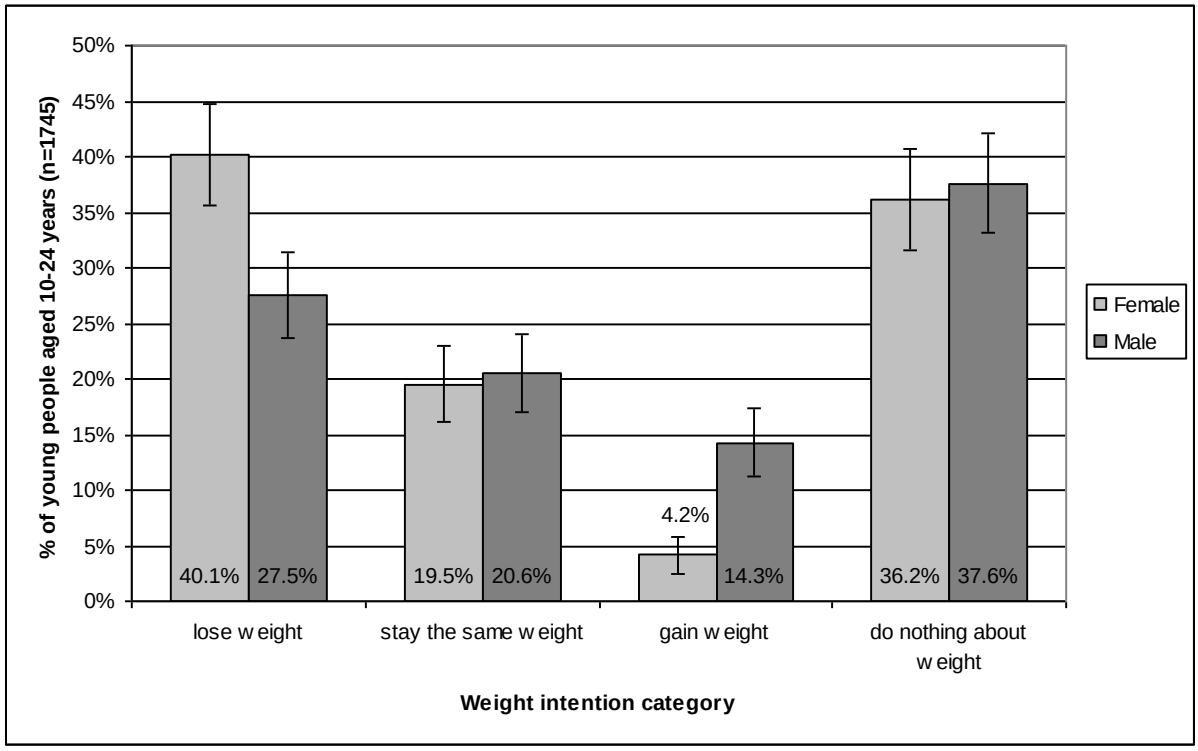


3.4.10 Weight intentions

Some children and young people are concerned about their body image (size and shape), with concerns usually differing by gender. Females often want to have a body size which is thinner than their current shape, even if their current body size is in the normal range. In contrast, males are more likely to desire a more muscular build and a bigger body size. Young people aged 10 to 24 years were asked if they were currently trying to lose weight, stay the same weight, gain weight, or do nothing about their weight.

Overall, 36.9% of young people were doing nothing about their weight, 33.4% were trying to lose weight, 20.1% were trying to stay the same weight, and 9.6% were trying to gain weight. Weight intentions differed by gender, with females more likely to be trying to lose weight and males more likely to be trying to gain weight (Figure 27).

Figure 27: Weight intentions among young people aged 10 to 24 years



The proportion of young people trying to lose weight increased with age, from 29.7% in children aged 10 to 14 years to 41.4% in young people aged 20 to 24 years.

For children aged 5 to 9 years, parents were asked about their children's weight intentions. Overall, most (75.2%) parents said that their children were doing nothing about their weight, 11.1% said they were trying to lose weight, 8.5% said "stay the same", and 5.2% said "gain weight".

3.5 Physical Activity and Sedentary Behaviour

3.5.1 Introduction

Regular physical activity participation is important for mental and physical health. To determine the overall daily activity patterns of children and young people, it is necessary to take into account both physically active and sedentary behaviours. These behaviours are commonly measured using movement devices and self-report questionnaires. This section presents information on physical activity and sedentary behaviours measured with accelerometers (movement device) and a self-report computerised time use survey (MARCA).

All participants were given an accelerometer to wear for seven consecutive days to provide an objective measure of physical activity. The average daily time (min/day) spent in light-intensity, moderate-intensity, and vigorous-intensity physical activity was calculated using this method. Children and young people had to provide at least one day of valid data to be included in analysis. Accelerometer data were available for 1,812 (72.3%) children and young people.

Participants also completed the Multi-media Activity Recall for Children and Adults (MARCA), a self-report computerised time use survey, which measures all activities that children and young people do in a given day (including physical activity and sedentary behaviours). The average daily time (min/day) spent in self-reported activities and sedentary behaviours was calculated using this method. The average of the three days of MARCA data collection was used in this report. MARCA data were available for 2,493 (99.6%) children and young people.

3.5.2 Time spent in light-intensity physical activity (LPA)

Light-intensity physical activity (LPA) is defined as activity performed at an intensity of less than 3 METs (multiples of resting energy expenditure). While LPA was assessed using an accelerometer, due to insufficient data we present the MARCA-derived measurement (n= 2,493) of LPA in this report (Table 14).

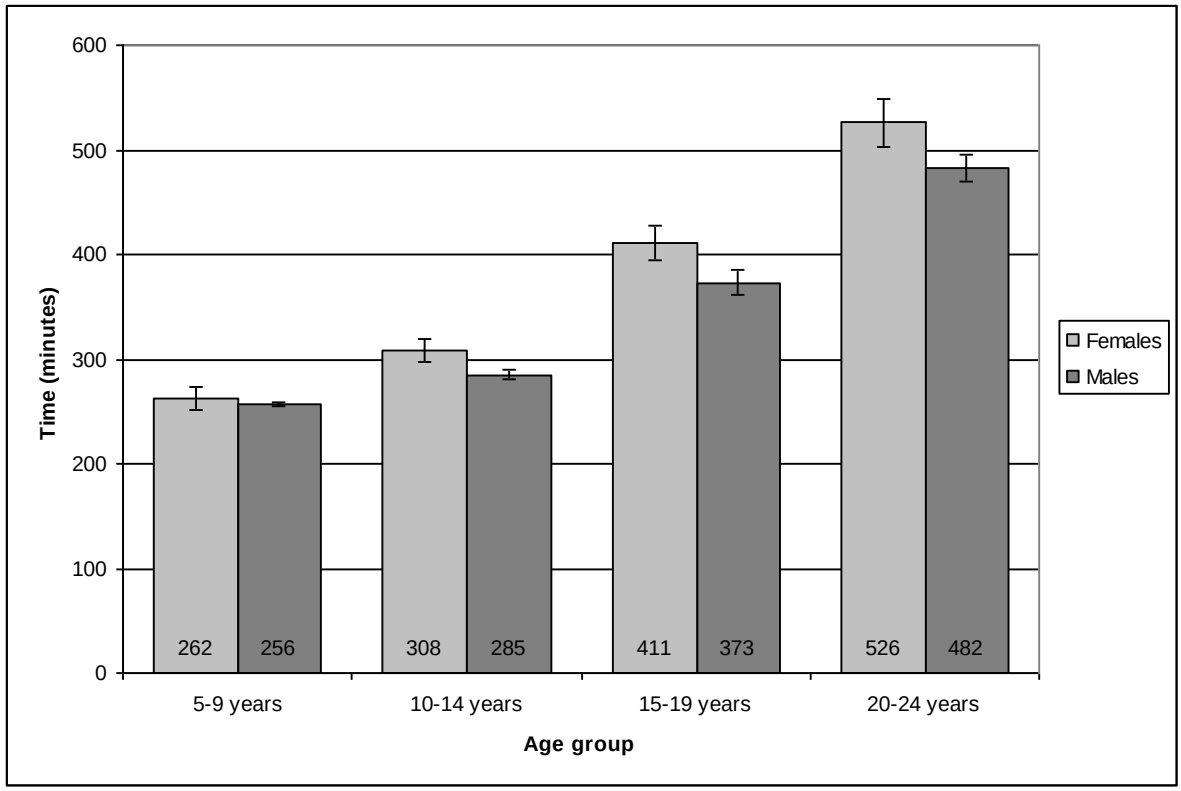
Table 14: Time spent (min/day) in light-intensity, moderate-intensity and vigorous-intensity physical activity in children and young people aged 5 to 24 years

Time spent in physical activity												
		LPA			MPA			VPA			MVPA		
		n	Mean	SEM	n	Mean	SEM	n	Mean	SEM	n	Mean	SEM
NZ CYP (5-24 years)		2493	338.6	4.5	1812	94.1	2.3	1812	10.6	0.5	1812	104.8	2.6
Gender	Female	1202	352.2	7.4	872	86.5	3.1	872	8.6	0.5	872	95.1	3.5
	Male	1291	325.9	5.4	940	101.3	2.9	940	12.5	0.9	940	113.8	3.4
Age group	5-9 years	754	259.1	4.3	578	173.8	2.8	578	21.7	1.4	578	195.5	3.5
	10-14 years	825	295.4	3.8	646	92.4	2.1	646	9.1	0.4	646	101.5	2.3
	15-19 years	572	390.6	8.9	369	41.1	1.9	369	4.8	0.9	369	45.9	2.2
	20-24 years	342	505.0	11.2	219	17.0	1.6	219	1.0	0.2	219	18.0	1.6
Ethnic group (total response)	Māori	465	300.1	6.9	319	106.2	4.2	319	12.4	1.9	319	118.6	5.3
	Pacific	238	316.1	12.0	152	107.5	7.6	152	9.4	1.2	152	116.9	8.5
	Asian	324	388.6	13.0	210	79.7	5.1	210	8.4	0.8	210	88.0	5.8
	NZEO	1780	340.6	5.9	1360	92.9	2.6	1360	10.7	0.4	1360	103.6	2.9
Level of deprivation	1 (least deprived)	513	328.9	7.8	392	95.7	4.7	392	10.9	0.8	392	106.6	5.3
	2	480	334.5	8.0	363	103.0	4.9	363	11.8	0.7	363	114.8	5.4
	3	540	335.5	9.9	406	91.1	4.4	406	10.0	0.7	406	101.1	5.0
	4	431	361.8	10.1	303	86.2	4.9	303	8.6	0.8	303	94.8	5.5
	5 (most deprived)	521	333.6	12.9	342	94.9	7.3	342	11.6	2.2	342	106.5	8.5
Area	Rural	384	309.4	8.1	289	110.7	4.9	289	12.7	0.9	289	123.4	5.5
	Urban	2109	342.2	4.9	1523	91.9	2.5	1523	10.3	0.6	1523	102.3	2.8

Notes: SEM = standard error of the mean; LPA = light-intensity physical activity; MPA = moderate-intensity physical activity; VPA = vigorous-intensity physical activity; MVPA = moderate- to vigorous-intensity physical activity. The n size is larger for LPA because it is based on available MARCA data rather than accelerometer.

Children and young people spent 338 minutes per day in LPA. Time spent in LPA increased with age, with 20 to 24 year old young people spending significantly more time in LPA than any other age group, and those aged 5 to 9 years spending significantly less time in LPA than any other age group. Females generally spent more time in LPA than males across all age groups; however the differences were small (Figure 28).

Figure 28: Time spent (min/day) in light-intensity physical activity for children and young people, by age group and gender

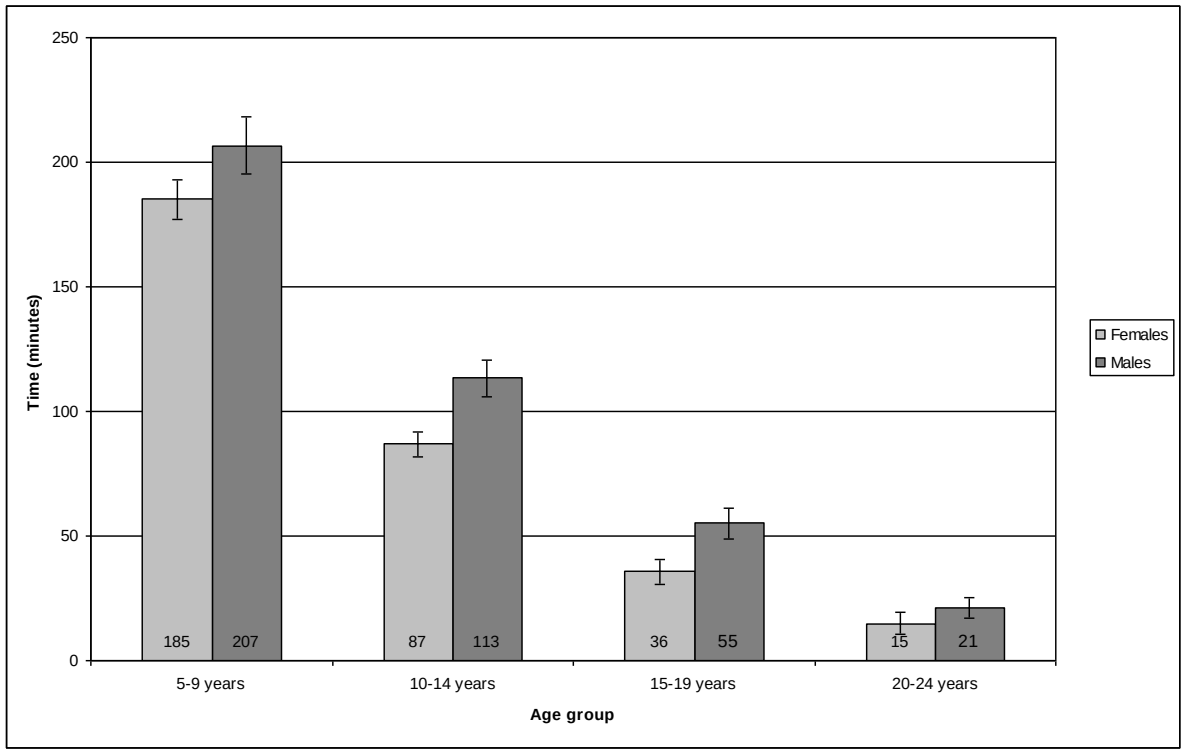


3.5.3 Time spent in moderate- to vigorous-intensity physical activity

On any given day, children and young people participated in an average of 104.8 minutes of moderate- to vigorous-intensity physical activity (MVPA) per day (Table 14). In all age groups (except for 20 to 24 years), males were significantly more active than females. Compared with the total population, Māori and Pacific children and young people spent more time in MVPA (Table 14).

Time spent in MVPA decreased with age (Figure 29). Young people aged 20 to 24 years spent significantly less time in MVPA than any other age group, whereas those aged 5 to 9 spent significantly more time in MVPA than any other age group.

Figure 29: Time spent (min/day) in moderate- to vigorous-intensity physical activity in children and young people, by age group and gender



3.5.4 Time spent in moderate- to vigorous-intensity physical activity by the day of week

Previous research has shown that children and adolescent's physical activity levels vary according to the day of the week, with less MVPA on week days than weekend days and more vigorous-intensity physical activity on weekdays than weekend days.[22]

Survey participants wore accelerometers on both weekdays and weekend days; therefore from participants that provided valid data we calculated the average time spent in MVPA for both of these types of days. It is important to note that not all participants provided data for both types of days, thus only participants with valid data for both days (n=1812) were included in this analysis. As can be seen in Table 15, average daily time spent in MVPA was greater on weekdays (103.7 minutes) than on weekend days (66.0 minutes). Time spent in MVPA decreased with age for both weekdays and weekend days.

Table 15: Time spent (min/day) in moderate- to vigorous-intensity physical activity (MVPA) by weekday and weekend day

Time spent in physical activity by day of the week										
		MVPA			MVPA on week days			MVPA on weekend days		
		n	Mean	SEM	n	Mean	SEM	n	Mean	SEM
NZ CYP (5-24 years)		1812	104.8	2.6	1812	103.7	2.6	1812	66.0	2.8
Gender	Female	872	95.1	3.5	872	94.8	3.4	872	57.8	3.6
	Male	940	113.8	3.4	940	112.0	3.5	940	73.8	3.8
Age group	5-9 years	578	195.5	3.5	578	190.2	3.7	578	132.2	6.9
	10-14 years	646	101.5	2.3	646	101.8	2.6	646	62.7	3.1
	15-19 years	369	45.9	2.2	369	47.2	2.3	369	21.5	1.9
	20-24 years	219	18.0	1.6	219	18.0	1.8	219	8.3	1.3
Ethnic group (total response)	Māori	319	118.6	5.3	319	117.2	5.8	319	67.6	5.9
	Pacific	152	116.9	8.5	152	114.4	8.7	152	53.3	8.4
	Asian	210	88.0	5.8	210	87.3	5.7	210	60.0	6.27
	NZEO	1360	103.6	2.9	1360	103.2	2.9	1360	68.9	3.2
Level of deprivation	1 (least deprived)	392	106.6	5.3	392	105.9	5.3	392	75.9	6.9
	2	363	114.8	5.4	363	113.6	5.5	363	74.5	5.8
	3	406	101.1	5.0	406	102.2	5.1	406	63.0	4.9
	4	303	94.8	5.5	303	93.2	5.4	303	52.2	5.5
	5 (most deprived)	342	106.5	8.5	342	103.4	8.2	342	63.7	7.9
Area	Rural	289	123.4	5.6	289	122.2	5.8	289	69.6	6.5
	Urban	1523	102.3	2.8	1523	101.2	2.8	1523	65.6	3.1

Notes: SEM = standard error of the mean; MVPA = moderate- to vigorous-intensity physical activity.

3.5.5 Meeting guidelines for physical activity

New Zealand Physical Activity Guidelines state that children and young people (5 to 18 years) should, throughout each day, do 60 minutes or more of moderate- to vigorous-intensity physical activity.[7] The guidelines, define moderate-intensity physical activity as the equivalent of a brisk walk, and vigorous-intensity physical activity as one that causes people to "huff and puff". Young people aged 18 years or older come under the adult guidelines, which recommend participating in at least 30 minutes of moderate-intensity physical activity on most, if not on all days of the week.[9]

As described in the methods section (2.3.5), the proportion of children and young people that met the guidelines was determined using three methods (Any Day Average Method, Three-Day Average Method, All Days Method). For participants aged up to 18 years, they met the guideline if the accumulated least *60 minutes* of MVPA, and for those aged 18 years or more, they met the guideline if they accumulated at least *30 minutes* of MVPA.

Using movement data from accelerometers, participants were categorised as meeting the respective physical activity guidelines.

Table 16 shows the percentage of children who complied with the physical activity guidelines using the three different methods. Overall, the three methods resulted in very similar results (69.5%, 71.4%, and 67.4%). Irrespective of the method used, approximately two-thirds of children and young people complied with the physical activity guidelines.

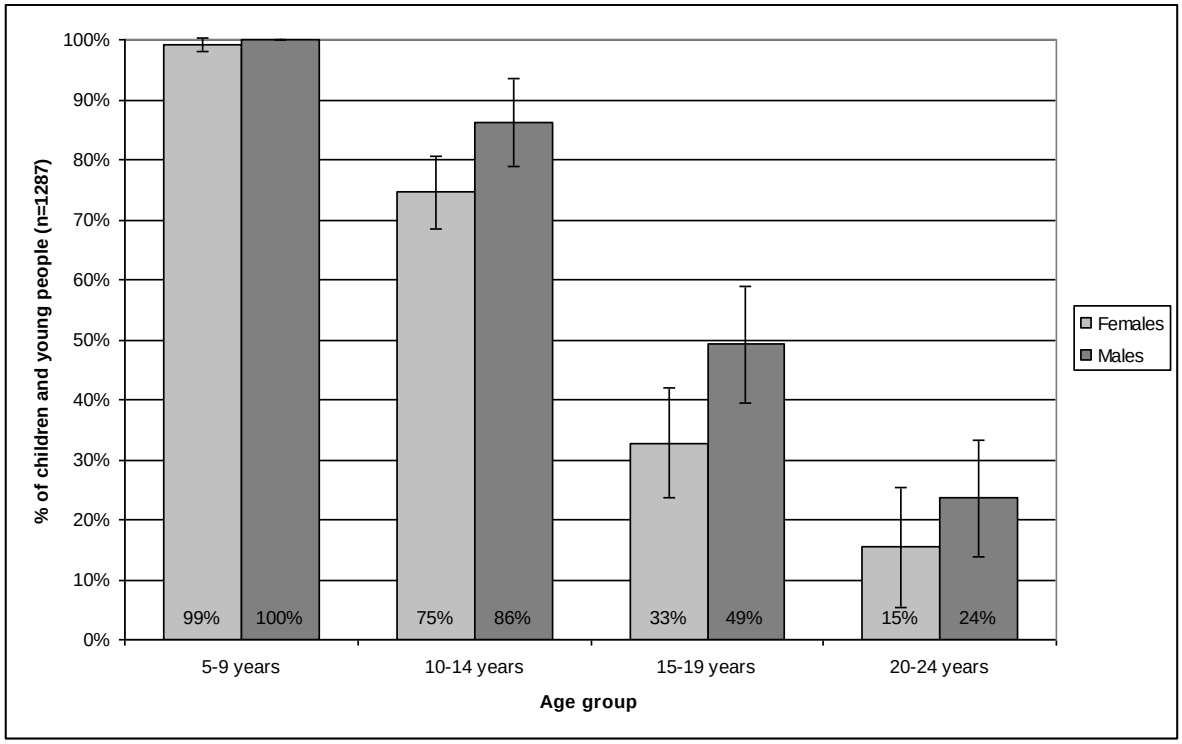
Table 16: Proportion of children and young people meeting the physical activity guidelines

		Any Day Average Method			Three Day Average Method			All Days Method		
		n	%	SEP	n	%	SEP	n	%	SEP
NZ CYP (5-24 years)		1287	69.5	1.6	1014	71.4	1.7	965	67.4	1.8
Gender	Female	576	64.7	2.1	445	66.1	2.6	420	62.3	2.5
	Male	711	74.1	2.2	569	76.2	2.1	545	72.0	2.2
Age group	5-9 years	575	99.5	0.3	465	99.5	0.4	465	99.7	0.3
	10-14 years	529	80.9	2.4	420	83.8	2.0	390	78.4	2.3
	15-19 years	142	41.4	3.4	100	41.4	4.1	84	32.3	3.9
	20-24 years	41	19.3	3.8	29	16.4	3.8	26	15.2	3.7
Ethnic group (total response)	Māori	247	78.6	3.0	188	81.5	3.3	172	74.1	3.7
	Pacific	116	76.3	4.2	72	82.8	4.9	69	78.8	5.6
	Asian	139	65.0	4.1	113	68.3	4.9	103	62.6	5.2
	NZEO	962	68.8	1.8	784	70.0	1.9	756	66.7	1.9
Level of deprivation	1 (least deprived)	287	69.3	3.6	243	71.3	3.2	222	64.6	3.8
	2	265	71.6	3.0	216	75.6	3.7	212	73.4	3.9
	3	281	68.3	3.3	220	67.4	3.8	208	63.9	3.8
	4	203	66.5	3.0	156	69.2	3.9	156	67.9	4.0
	5 (most deprived)	247	72.1	4.9	175	74.8	5.5	163	68.5	5.2
Area	Rural	215	73.8	3.2	172	71.0	3.5	168	67.9	3.7
	Urban	1072	69.0	1.7	842	71.5	1.9	797	67.3	1.9

Notes: SEP = standard error of the proportion; Physical activity guideline for children and young people aged from 5 up to 18 years is based on 60 minutes per day; 18-24 years old is based on 30 minutes per day.

The proportion of children and young people meeting the physical activity guidelines decreased with age (Table 16 and Figure 30). The most marked decrease was seen in older adolescents and young adults. Using the All Days Method, only 15% of young people aged 20 to 24 years met the guidelines, which is based on only accumulating 30 minutes of MVPA per day (Table 16).

Figure 30: Proportion of children and young people meeting guidelines for physical activity (Any Day Average Method), by age group and gender



Note: SEP = Physical activity guideline for children and young people aged from 5 up to 18 years is based on 60 minutes per day; 18-24 years old is based on 30 minutes per day.

3.5.6 Time spent in organised sport

Sport is an important source of physical activity. Using the MARCA, children and young people indicated the time they spent during the previous day participating in “organised sport”, which refers to any sports, games, or activities (eg, aerobics) that were structured in nature. The MARCA questionnaire includes a comprehensive list of sports and games that participants can chose from (see the Technical Report for more details).

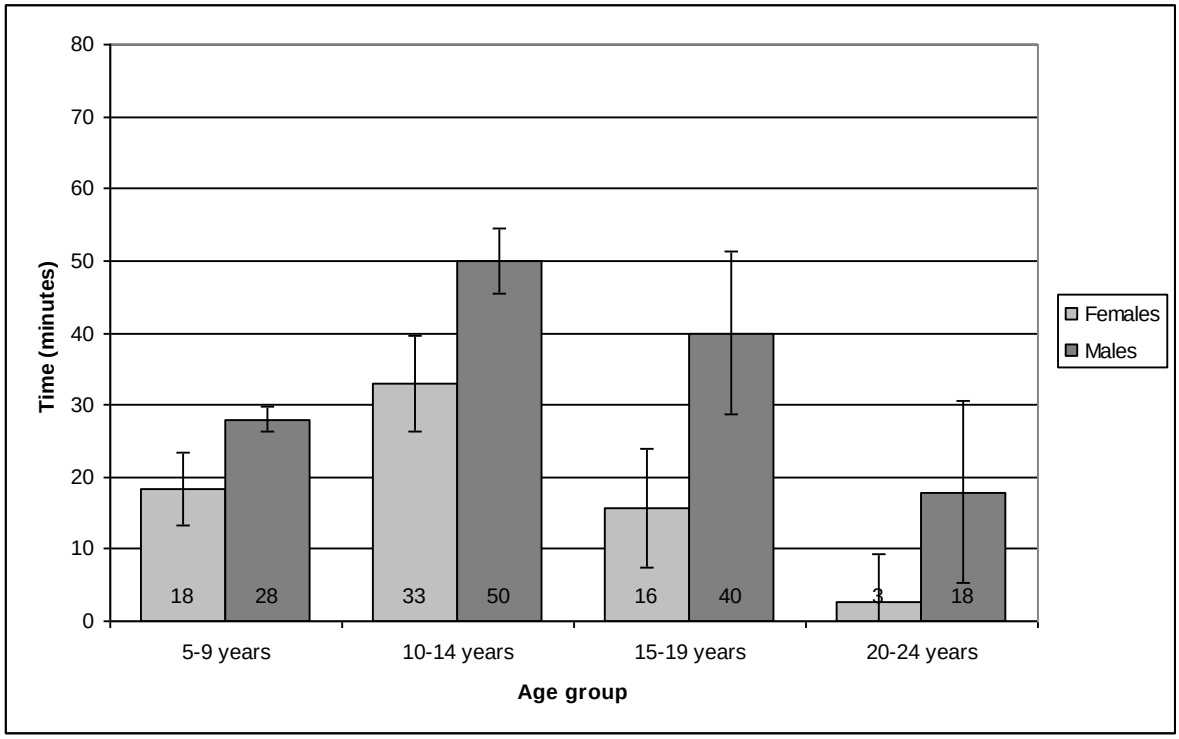
On average, children and young people spent 29.3 minutes per day in organised sport (Table 17). Those aged 10 to 14 years spent the most time in organised sport (42.3 minutes per day). Young people aged 20 to 24 years spent the least amount of time in organised sport (10.0 min/day). Females spent significantly less time in organised sport than males, and this occurred across all age groups (Figure 31).

Table 17: Average daily time (min per day) spent in selected activities and overall energy expenditure in children and young people aged 5 to 24 years

		Time spent in Organised sport			Time spent in Free play			Time spent in Active transport			Time spent in Passive transport			Overall PAL		
		n	Mean	SEM	n	Mean	SEM	n	Mean	SEM	n	Mean	SEM	n	Mean	SEM
NZ CYP (5-24 years)		2493	29.3	1.2	2493	77.6	2.3	2493	43.0	1.5	2493	45.6	1.3	2493	1.7	0.0
	Females	1202	20.2	1.4	1202	77.4	3.1	1202	35.6	1.5	1202	45.5	1.9	1202	1.7	0.0
	Males	1291	37.8	1.8	1291	77.7	2.9	1291	49.9	2.6	1291	45.8	1.8	1291	1.8	0.0
Age group	5-9 years	754	23.0	1.9	754	141.2	3.8	754	30.4	1.8	754	40.2	2.3	754	1.7	0.0
	10-14 years	825	42.3	2.2	825	86.5	3.1	825	44.4	2.2	825	38.2	1.4	825	1.8	0.0
	15-19 years	572	28.8	2.5	572	29.7	2.6	572	52.2	4.2	572	53.7	3.3	572	1.7	0.0
	20-24 years	342	10.0	1.9	342	17.5	2.4	342	47.8	4.2	342	60.7	4.9	342	1.6	0.0
Ethnic group (total response)	Māori	465	31.3	3.1	465	85.3	5.1	465	49.6	3.6	465	40.8	3.1	465	1.8	0.0
	Pacific	238	32.0	4.1	238	68.8	5.9	238	38.7	3.6	238	39.8	2.5	238	1.7	0.0
	Asian	324	28.6	2.8	324	51.2	4.8	324	34.0	3.2	324	40.1	1.9	324	1.6	0.0
	NZEO	1780	27.8	1.3	1780	83.1	2.8	1780	43.7	1.8	1780	48.0	1.6	1780	1.7	0.0
Level of deprivation	1 (least deprived)	513	32.7	2.4	513	86.1	4.4	513	34.3	2.4	513	52.9	3.0	513	1.7	0.0
	2	480	31.3	2.4	480	87.4	4.9	480	43.7	2.9	480	47.5	2.1	480	1.7	0.0
	3	540	28.8	2.5	540	74.3	4.6	540	40.6	2.3	540	46.2	2.5	540	1.7	0.0
	4	431	26.3	3.1	431	75.9	5.1	431	45.4	3.6	431	41.3	3.2	431	1.7	0.0
	5 (most deprived)	521	27.9	2.8	521	67.1	5.9	521	50.0	4.6	521	40.9	3.7	521	1.7	0.0
Area	Rural	384	32.6	2.8	384	81.2	4.8	384	33.7	2.8	384	59.5	3.9	384	1.7	0.0
	Urban	2109	28.9	1.3	2109	77.1	2.5	2109	44.2	1.7	2109	44.0	1.4	2109	1.7	0.0

Notes: SEM = standard error of the mean; PAL = Physical Activity Level, expressed as multiples of resting metabolic rate or METS.

Figure 31: Time spent (min/day) in organised sport, by age group and gender

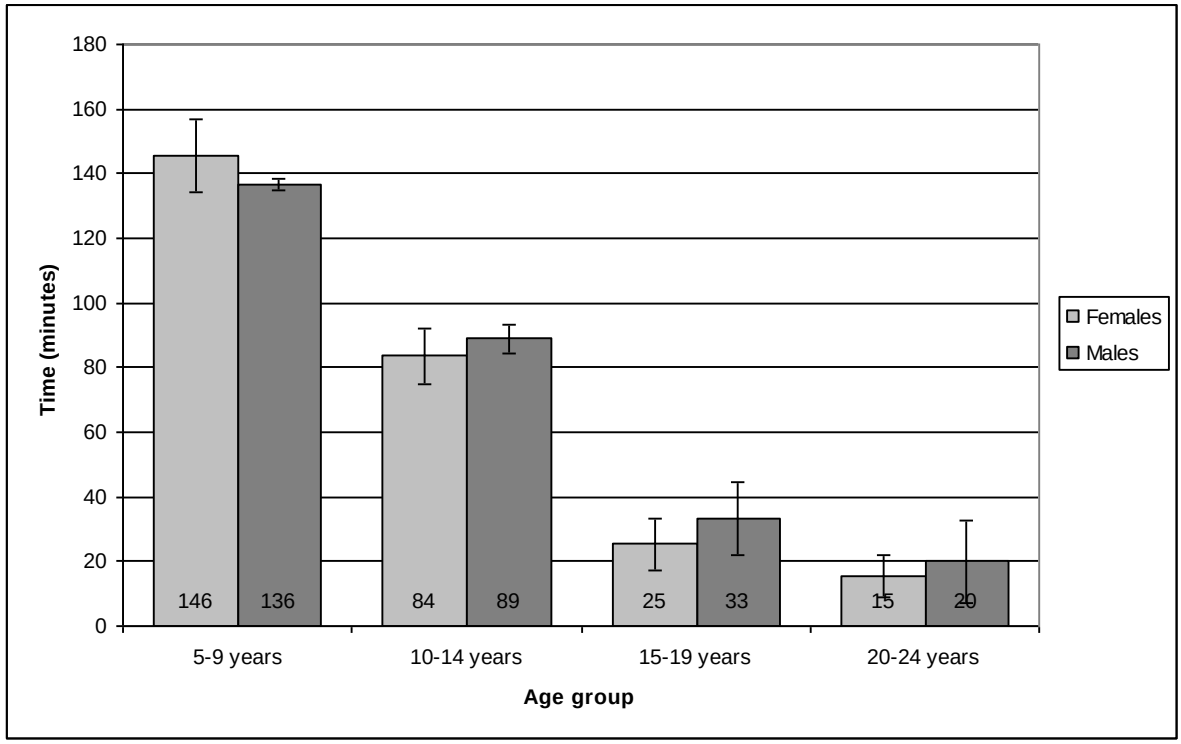


3.5.7 Time spent in free play

Free play is important for all children and young people and contributes to motor skill development, as well as being an important component of physical activity. Using the MARCA, children and young people indicated the time they spent during the previous day participating in free play, which referred to any time playing for fun and not in an organised or structured way. The MARCA questionnaire includes a comprehensive list of activities that participants can choose from to indicate what they did in their free time (see the Technical Report for more details). Example activities include “mucking about”, “running around”, “playing with children”, and “hacky sack”.

On average, children and young people spent 77.6 minutes per day in free play (Table 17). There was no significant difference between males and females in the time spent in free play. There was an age-related decline in time spent in free play; with children aged 5 to 9 years spending the most time playing and young people aged 20 to 24 years spending the least amount of time in free play (Figure 32).

Figure 32: Time spent (min/day) in free play, by age group and gender



There was a general decline in the time spent in free play by level of deprivation (Table 17), with those in the most deprived areas (quintile 5) participating in significantly less free play compared with those in the least deprived areas (quintile 1) (67.1 versus 86.1 min).

3.5.8 Time spent (min/day) in active and passive transport

Active transport refers to any form of transportation from one location to another using non-motorised transport and includes walking, jogging, cycling, and skateboarding. Passive transport refers to motorised transport from one location to another and includes car, bus, and rail travel. Changes in the physical environment have been associated with an increased reliance on passive forms of transport and a reduction in active transport. On average, children and young people spent 43.0 minutes per day in active transport (Table 17). Time spent in active transport increased until age 15 to 19 years, then declined. Time spent in passive transport was significantly higher in young people aged 20 to 24 years (60.4 min/day) than children aged 5 to 9 years (40.2 min/day).

Time spent in active transport tended to increase with level of deprivation, whereas the opposite was true for passive transport (Table 17).

3.5.9 Overall energy expenditure

Physical Activity Level (PAL) is a measure of overall physical activity and is expressed as a multiple of resting metabolic rate (MET). Higher levels of PAL reflect a higher average daily level of physical activity. In this survey PAL was measured using the MARCA and an average value of 1.7 was found for children and young people (Table 17). Overall, males had a higher PAL than females, with the highest levels found in young people aged 10 to 14 years and the lowest levels in young people aged 20 to 24 years.

3.5.10 Meeting the screen time guideline

'Screen time' refers to the time children and young people spend watching television (TV) including videos and digital versatile disc (DVDs), on computers, and playing video games. The New Zealand Physical Activity Guidelines state that children and young people (aged 5 to18 years) should spend less than two hours per day (out of school time) in front of television, computers and game consoles. Screen time was measured using the MARCA and the total amount of screen time reported each day was summed and averaged across the available days.

Participants under 18 years of age were considered to have met the screen time guideline if they accumulated less than two hours per day in front of television, computers and game consoles (screen-based activities). Screen time guidelines do not exist in New Zealand for those over 18 years of age; however, the accumulation of less than two hours per day of screen time criteria was used for this population for completeness.

The Three-Day Average Method (see section 2.3.5) was used to calculate the proportion of children and young people that complied with the screen time guidelines. Using MARCA data, 39.6% of children and young people fulfilled the criteria for meeting the guideline (Table 18). Females were more likely than males to meet the screen time guideline. More rural (44.3%) than urban (39%) children and young people met the screen time guideline. The proportion of children and young people meeting the screen time guideline decreased as the level of deprivation increased.

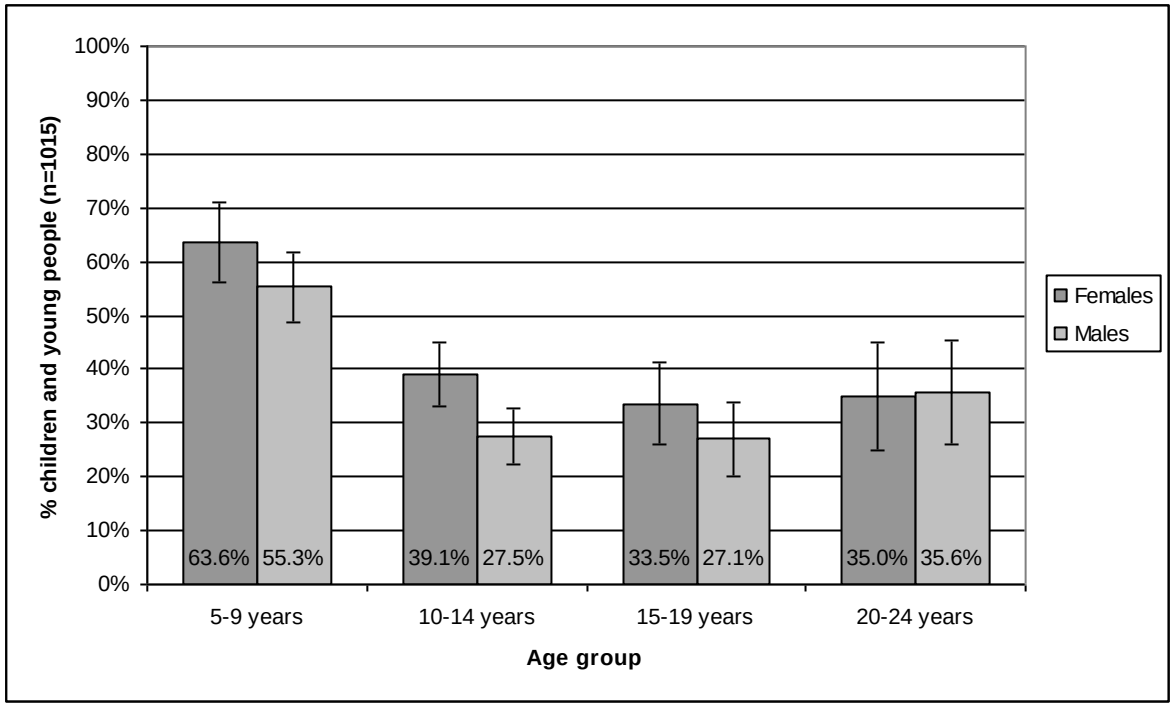
More than half (59.6%) of children aged 5 to 9 years met the screen time guideline, whereas only one-third (30-35%) of young people aged 10 to 24 years spent less than two hours a day (out of school/work time) in front of television, computers and game consoles (Table 18 and Figure 33).

Table 18: Proportion of children and young people meeting the screen time guideline (Three-Day Average Method)

Proportion meeting screen time guideline				
		n	%	SEP
NZ CYP (5-24 years)		1015	39.6	1.2
Gender	Female	549	44.2	1.8
	Male	466	35.3	1.8
Age group	5-9 years	461	59.6	2.5
	10-14 years	270	32.7	1.9
	15-19 years	163	30.0	2.8
	20-24 years	121	35.3	3.8
Ethnic group (total response)	Māori	174	38.5	3.0
	Pacific	98	38.5	3.9
	Asian	126	35.8	3.1
	NZEO	744	40.5	1.5
Level of deprivation	1 (least deprived)	240	43.8	2.9
	2	199	40.6	2.9
	3	219	40.4	2.9
	4	170	39.0	3.0
	5 (most deprived)	185	35.0	2.3
Area	Rural	167	44.3	3.1
	Urban	848	39.0	1.3

Note: SEP = standard error of the proportion.

Figure 33: Proportion of children and young people meeting the screen guideline (Three-Day Average Method), by age group and gender



3.5.11 Time spent in sedentary activities

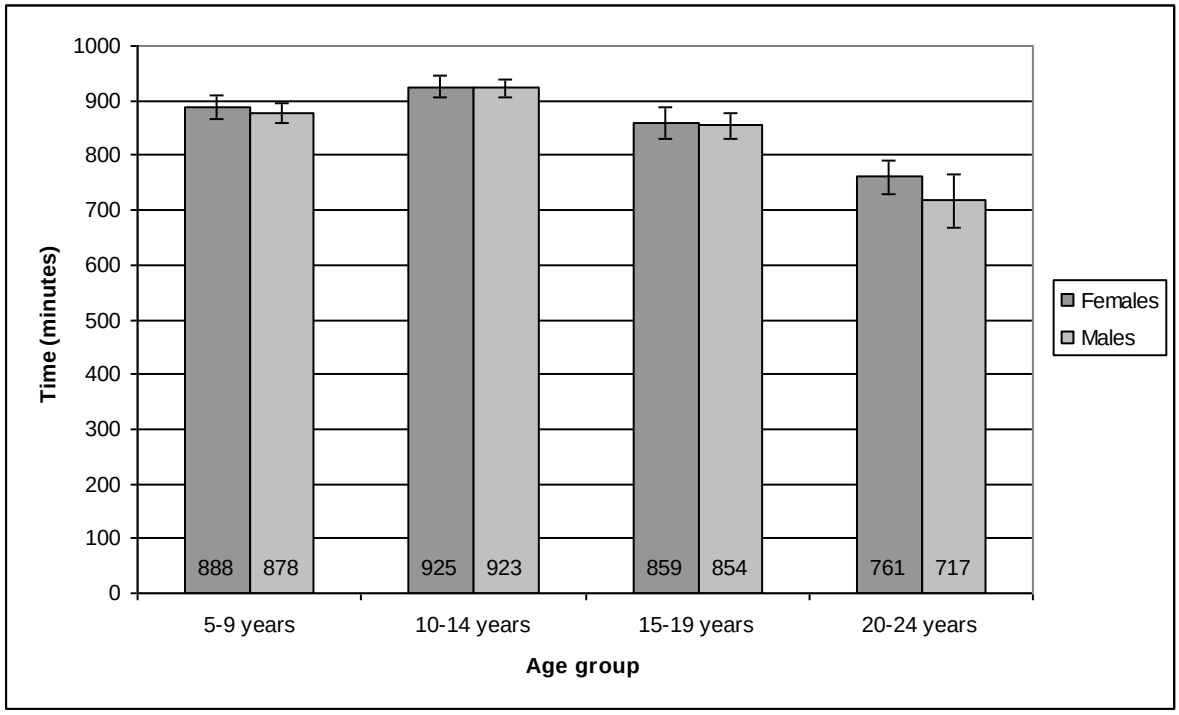
Sedentary behaviours refer to activities that result in less than 1.5 METs (METs are multiples of resting metabolic rate—1 MET is equivalent to rest) and includes activities such TV watching, computer use, video game play, reading, texting, talking on the phone and sleep. The average daily time spent in sedentary activities was calculated from available MARCA data. Children and young people spent on average 870 minutes per day in sedentary activities (Table 19). Young people aged 10 to 14 years were the most sedentary, while the oldest age group spent significantly less time per day in sedentary activities compared with the younger age groups (Figure 34).

Table 19: Time spent (minutes per day) in selected sedentary activities in children and young people aged 5 to 24 years

		Time spent											
		Total sedentary time			TV watching			Using computers			Playing video games		
		n	Mean	SEM	n	Mean	SEM	n	Mean	SEM	n	Mean	SEM
NZ CYP (5-24 years)		2493	870.6	5.0	2493	123.6	2.5	2493	21.6	1.3	2493	18.7	1.1
	Females	1202	874.0	7.3	1202	118.5	3.1	1202	19.2	1.6	1202	9.4	1.4
	Males	1291	867.4	6.6	1291	128.4	3.7	1291	24.0	2.0	1291	27.4	1.6
Age group	5-9 years	754	883.2	7.7	754	97.5	4.3	754	6.6	0.9	754	13.3	1.4
	10-14 years	825	923.8	6.6	825	131.5	3.8	825	16.4	1.4	825	24.0	1.8
	15-19 years	572	856.4	9.4	572	135.1	5.4	572	37.5	3.7	572	21.4	3.0
	20-24 years	342	739.7	13.4	342	133.2	8.2	342	36.1	4.9	342	11.3	2.6
Ethnic group	Māori	465	890.6	9.6	465	136.4	6.4	465	11.0	1.5	465	18.1	3.1
	Pacific	238	910.3	15.7	238	145.0	8.7	238	10.1	2.5	238	16.5	2.8
	Asian	324	865.8	13.4	324	115.7	6.7	324	46.7	5.6	324	18.9	2.7
	NZEO	1780	861.7	5.9	1780	121.0	2.9	1780	21.2	1.5	1780	19.2	1.4
Level of deprivation	1 (least deprived)	513	869.7	9.9	513	106.8	4.3	513	22.6	2.4	513	21.8	2.6
	2	480	869.2	10.5	480	116.4	6.0	480	25.6	3.8	480	22.7	2.5
	3	540	867.1	10.2	540	121.0	5.1	540	21.9	2.3	540	16.7	1.8
	4	431	861.3	14.7	431	122.7	6.2	431	26.3	4.0	431	18.8	3.3
	5 (most deprived)	521	882.9	11.0	521	146.6	5.2	521	13.6	1.8	521	14.9	2.3
Area	Rural	384	886.1	13.6	384	119.2	5.8	384	15.4	1.9	384	19.1	2.7
	Urban	2109	868.7	5.4	2109	124.2	2.7	2109	22.4	1.4	2109	18.7	1.2

Note: SEM = standard error of the mean.

Figure 34: Time spent (min per day) in sedentary activities (min/day), by age group and gender



3.5.12 Screen-time activities

The average daily time spent in specific screen-based activities was calculated from the MARCA data. The three categories were TV watching, computer use, and video game play. On average, children and young people spent 124 minutes watching TV per day, 22 minutes sitting at a computer (outside of school work) and 19 minutes playing non-active video games (Table 19). Children aged 5 to 9 years watched the least TV, while those aged 10 years or older watched more than two hours per day. Males and females watched a similar amount of TV, whereas males tended to spend more time at the computer and playing video games than females (Figures 35 and 36). Television watching was the most frequently reported screen-time activity across all age groups for both males and females.

Figure 35: Time spent in screen-based activities for female children and young people, by age group

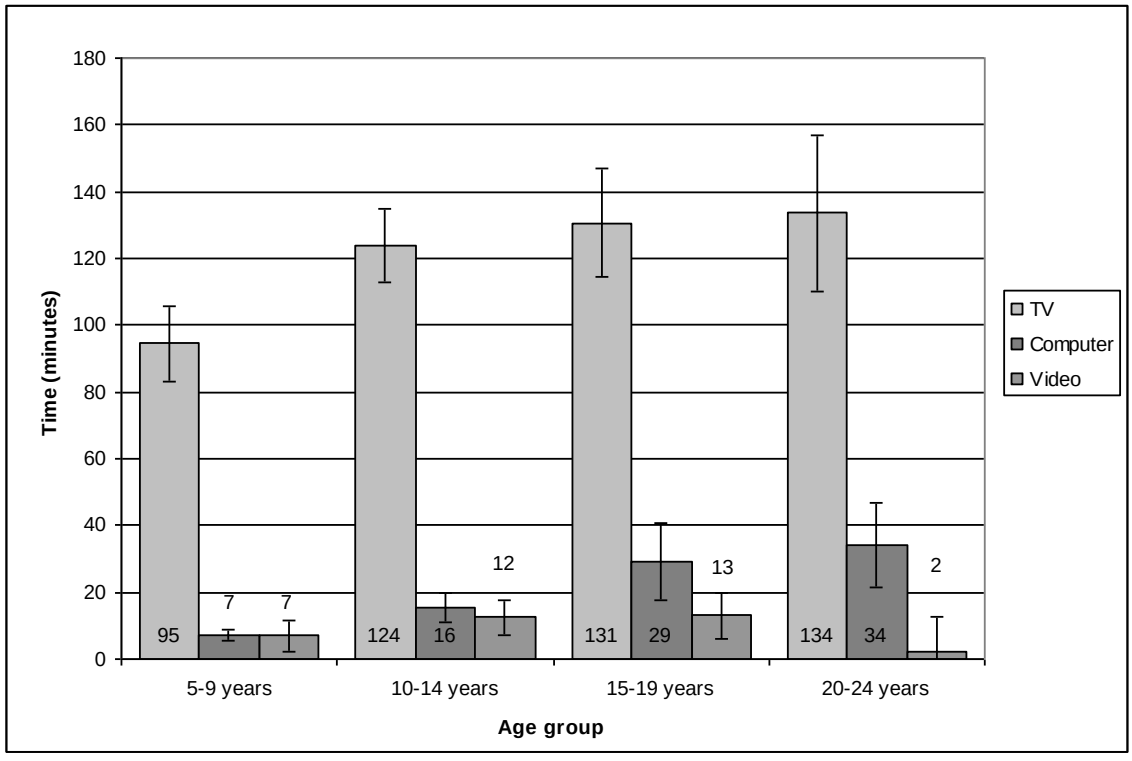
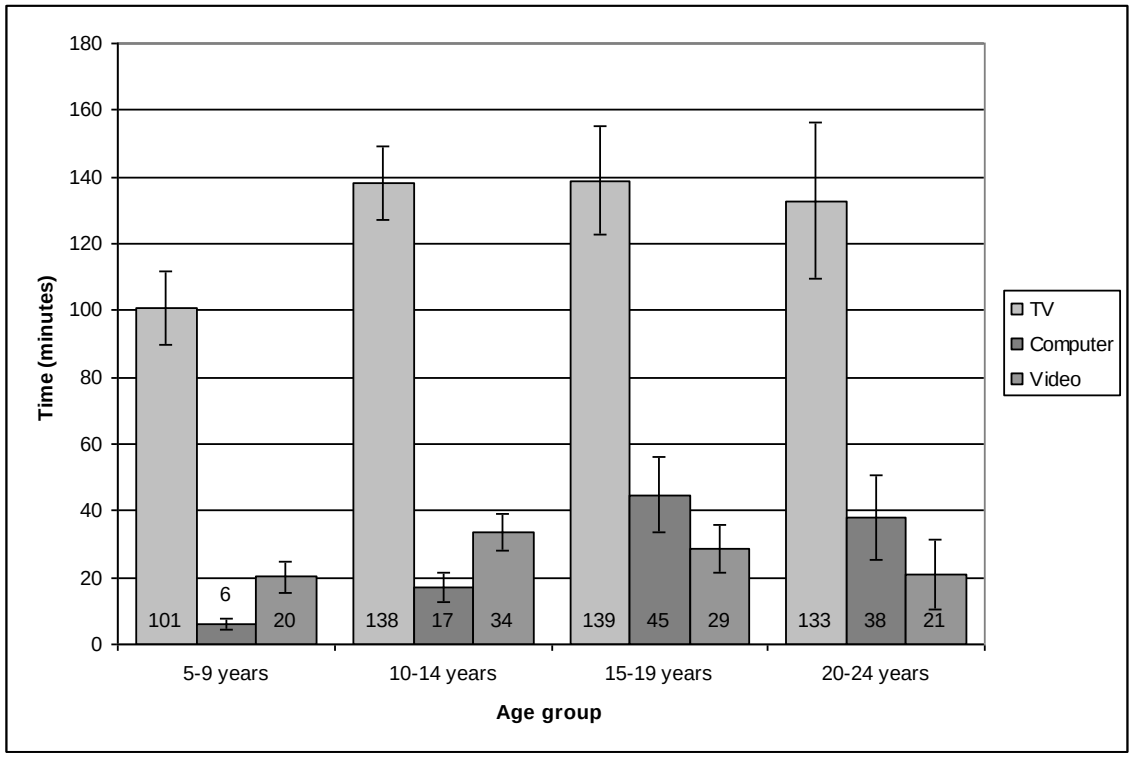


Figure 36: Time spent in screen-based activities for male children and young people, by age group



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Appendix 1 – Survey personnel

This National Survey was funded by SPARC, the Ministry of Health, the Ministry of Education, and the Ministry of Social Development.

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