

Supplementary Report:

Analyses of New Zealand Health Survey and B4 School Check data

by Healthy Families NZ location

To accompany the Interim Evaluation Report: Healthy Families NZ

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Massey University Healthy Families NZ Evaluation Team

# Supplementary Report

This report presents detailed findings from analyses of the New Zealand Health Survey (NZHS) for adults and children, and the B4 School Check for four-year-old children, comparing each Healthy Families NZ location with the overall New Zealand population.

## New Zealand Health Survey results

Detailed findings are presented from analyses of the New Zealand Health Survey for adults and children, and the B4 School Check for four-year-old children, comparing each Healthy Families NZ location with the overall New Zealand population.

### How are the results presented?

For each New Zealand Health Survey indicator, crude (or unadjusted) prevalence rates are presented for each of the Healthy Family NZ locations, and for total New Zealand. Unadjusted results are presented to show the actual health status of the population in each Healthy Families NZ location and for all New Zealand. The results take into account survey weights and are based on four years of pooled data from the 2011/12 - 2014/15 NZHS. The annual data collection runs from July to June.

Healthy Families NZ location results are compared in the text to the total New Zealand result using unadjusted percentages to describe differences in the health burden/experience between the location and total New Zealand.

A full set of results including age-adjusted results and confidence intervals for all results can be found in the results tables immediately following the graphs and discussion. Age-standardisation adjusts for differences in the age distribution of the populations being compared. Age is an important determinant of health, so populations with different age structures may have different results due simply to these demographic age differences.

The results presented in this report have 95% confidence intervals. A confidence interval is a range around an estimate that tells us how precise it is. It indicates the level of uncertainty in a measurement that occurs due to taking a sample. If we selected many samples, the 95% confidence interval would enclose the ‘true’ value for the population 95% of the time. The sample size of the group influences the size of the confidence interval. When the sample size is small, the confidence interval is typically wide and the estimate is less precise (Ministry of Health, 2012)[[1]](#footnote-1).

The difference between two groups is statistically significant if their confidence intervals do not overlap. Sometimes, even when two confidence intervals overlap, the difference between these groups can be statistically significant (Ministry of Health, 2012). The text only reports differences where the confidence intervals do not overlap.

More detailed explanations of what was measured to give the results presented here can be found in the glossary (see Appendix 6). Further information about the NZHS can be found

http://www.health.govt.nz/publication/annual-update-key-results-2014-15-new-zealand-health-survey

### New Zealand Health Survey: Adults

#### Additional methodological notes

Table 5 shows the number of adults from each Healthy Families NZ location who answered the NZHS during the four-year period 2011/12 to 2014/15. The number of adults for whom data was available ranged from 1,958 in Manukau to 502 in Spreydon-Heathcote.

Unadjusted results were suppressed when the number of survey respondents with a particular risk factor or condition was less than five.

Age-standardisation was done using the direct method and the World Health Organisation (WHO) standard population. Age-standardised results with less than 20 people with a particular risk factor or condition were considered unreliable and suppressed (Australian Institute of Health and Welfare, 2011)[[2]](#footnote-2). Adjusted results were also checked to ensure that the total respondents in each age group was greater than 30.

Results with a relative standard error over 50% have not been presented as these results are considered too unreliable for use, while results with a relative standard error between 30% and 50% should be used with caution (Ministry of Health, 2016)[[3]](#footnote-3).

Table 5. Number of adults in survey, Healthy Families NZ location, 2011/12 – 2014/15



#### Findings

##### Current smoking and hazardous drinking

Figure 2. Current smokers, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from five of the locations are **more** likely to be current smokers than total New Zealand adults, namely Far North, Manukau, East Cape, Rotorua, and Whanganui Rangitīkei Ruapehu.

Adults from the remaining five locations have similar rates of current smoking to total New Zealand adults.



Figure 3. Hazardous Drinkers, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **less** likely to drink alcohol in a manner that is hazardous to their health than total New Zealand adults, namely Waitakere.

Adults from three of the locations are **more** likely to drink alcohol in a manner that is hazardous to their health than total New Zealand adults, namely East Cape, Rotorua, and Whanganui Rangitīkei Ruapehu.

Adults from the remaining six locations have similar rates of drinking alcohol in a manner that is hazardous to their health to total New Zealand adults.



##### Adequate vegetable and fruit intake

Figure 4. Adequate vegetable intake, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from five of the locations are **more** likely to eat at least three servings of vegetables each day than total New Zealand adults, namely Far North, East Cape, Whanganui Rangitīkei Ruapehu, Spreydon-Heathcote, and Invercargill.

Adults from three of the locations are **less** likely to eat at least three servings of vegetables each day than total New Zealand adults, namely Waitakere, Manukau, and Manurewa-Papakura.

Adults from the remaining two locations have similar rates of eating at least three servings of vegetables each day to total New Zealand adults.



Figure 5. Adequate fruit intake, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from four of the locations are **less** likely to eat at least two servings of fruit each day than total New Zealand adults, namely Manukau, Manurewa-Papakura, East Cape, and Whanganui Rangitīkei Ruapehu.

Adults from the remaining six locations have similar rates of eating at least two servings of fruit each day to total New Zealand adults.



Figure 6. Adequate vegetable and fruit intake, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **more** likely to meet both the vegetable and fruit intake guidelines than total New Zealand adults, namely Far North.

Adults from three of the locations are **less** likely to meet both the vegetable and fruit intake guidelines than total New Zealand adults, namely Waitakere, Manukau, and Manurewa-Papakura.

Adults from the remaining six locations have similar rates of meeting both the vegetable and fruit intake guidelines to total New Zealand adults.



##### Physical activity

Figure 7. Physical activity, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from two of the locations are **more** likely to do at least 30 minutes of moderate-intensity physical activity at least five days a week than total New Zealand adults, namely Spreydon-Heathcote and Invercargill.

Adults from four of the locations are **less** likely to do at least 30 minutes of moderate-intensity physical activity at least five days a week than total New Zealand adults, namely Far North, Manukau, Manurewa-Papakura, and Rotorua.

Adults from the remaining four locations have similar rates of doing at least 30 minutes of moderate-intensity physical activity at least five days a week to total New Zealand adults.



Figure 8. Little or no physical activity, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from three of the locations are **less** likely to do little or no physical activity than total New Zealand adults, namely Lower Hutt, Spreydon-Heathcote, and Invercargill.

Adults from four of the locations are **more** likely to do little or no physical activity than total New Zealand adults, namely Manukau, Manurewa-Papakura, East Cape, and Whanganui Rangitīkei Ruapehu.

Adults from the remaining three locations have similar rates of doing little or no physical activity to total New Zealand adults.



##### Body mass index

Figure 9. Obese, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **less** likely to be obese than total New Zealand adults, namely Spreydon-Heathcote.

Adults from seven of the locations are **more** likely to be obese than total New Zealand adults, namely Far North, Manukau, Manurewa-Papakura, East Cape, Rotorua, Whanganui Rangitīkei Ruapehu, and Invercargill.

Adults from the remaining two locations have similar rates of obesity to total New Zealand adults.



Figure 10. Overweight, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from two of the locations are **less** likely to be overweight than total New Zealand adults, namely Manukau and East Cape.

Adults from one of the locations are **more** likely to be overweight than total New Zealand adults, namely Spreydon-Heathcote.

Adults from the remaining seven locations have similar rates of being overweight to total New Zealand adults.



Figure 11. Overweight or obese, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from five of the locations are **more** likely to be either overweight or obese than total New Zealand adults, namely Far North, Manukau, Manurewa-Papakura, East Cape, and Whanganui Rangitīkei Ruapehu.

Adults from the remaining five locations have similar rates of being either overweight or obese to total New Zealand adults.



Figure 12. Healthy weight, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from five of the locations are **less** likely to be a healthy weight than total New Zealand adults, namely Far North, Manukau, Manurewa-Papakura, East Cape, and Whanganui Rangitīkei Ruapehu.

Adults from the remaining five locations have similar rates of being a healthy weight to total New Zealand adults.



##### Health conditions

Figure 13. High blood pressure, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from two of the locations are **more** likely to take medication for high blood pressure than total New Zealand adults, namely Whanganui Rangitīkei Ruapehu and Invercargill.

Adults from the remaining eight locations have similar rates of taking medication for high blood pressure to total New Zealand adults.



Figure 14. High cholesterol, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **less** likely to take medication for high cholesterol than total New Zealand adults, namely Spreydon-Heathcote.

Adults from the remaining nine locations have similar rates of taking medication for high cholesterol to total New Zealand adults.



Figure 15. Ischaemic heart disease, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **more** likely to have been diagnosed with ischaemic heart disease than total New Zealand adults, namely Far North.

Adults from the remaining nine locations have similar rates of being diagnosed with ischaemic heart disease to total New Zealand adults.



Figure 16. Heart failure, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from two of the locations are **more** likely to have been diagnosed with heart failure than total New Zealand adults, namely Far North and Lower Hutt.

Adults from the remaining seven[[4]](#footnote-4) locations have similar rates of being diagnosed with heart failure to total New Zealand adults.



Figure 17. Stroke, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from eight[[5]](#footnote-5) of the locations have similar rates of having had a stroke during their lifetime to total New Zealand adults.

Figure 18. Diabetes, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from three of the locations are **more** likely to be have been diagnosed with diabetes (type 1 or type 2 diabetes) than total New Zealand adults, namely Far North, Manukau, and Manurewa-Papakura.

Adults from the remaining seven locations have similar rates of being diagnosed with diabetes (type 1 or type 2 diabetes) to total New Zealand adults.



Figure 19. Diagnosed with diabetes at 25 years or older (type 2 diabetes proxy), among adults over 25 years, NZHS 2011/12 – 2014/15, unadjusted

Among adults 25 years and over, adults from three of the locations are **more** likely have been diagnosed as having diabetes when they were 25 years or older than total New Zealand adults, namely Far North, Manukau, and Manurewa-Papakura. This provides a proxy estimate of type 2 diabetes.

Adults from the remaining six[[6]](#footnote-6) locations have similar rates of being diagnosed as having diabetes when they were 25 years or older to total New Zealand adults.



##### Mental health

Figure 20. Mood or anxiety disorder, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **less** likely to be diagnosed with a mood disorder (depression or bipolar disorder), and/or an anxiety disorder, than total New Zealand adults, namely Manukau.

Adults from one of the locations are **more** likely to be diagnosed with a mood disorder (depression or bipolar disorder), and/or an anxiety disorder, than total New Zealand adults, namely Spreydon-Heathcote.

Adults from the remaining eight locations have similar rates of being diagnosed with a mood disorder (depression or bipolar disorder), and/or an anxiety disorder, to total New Zealand adults.



Figure 21. Psychological distress, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from two of the locations are **more** likely to have experienced psychological distress in the previous four weeks than total New Zealand adults, namely Manukau and Manurewa-Papakura.

Adults from the remaining eight locations have similar rates of having experienced psychological distress in the previous four weeks to total New Zealand adults.



##### Oral health

Figure 22. Teeth removed due to decay, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from three of the locations are **less** likely to have had one or more teeth removed in the past 12 months due to decay, infection or gum disease than total New Zealand adults, namely Waitakere, Manukau, and Lower Hutt.

Adults from two of the locations are **more** likely to have had one or more teeth removed in the past 12 months due to decay, infection or gum disease than total New Zealand adults, namely East Cape and Whanganui Rangitīkei Ruapehu.

Adults from the remaining five locations have similar rates of having had one or more teeth removed in the past 12 months due to decay, infection or gum disease to total New Zealand adults.



##### Health status

Figure 23. Good or better self-rated health, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from two of the locations are **less** likely to rate their health as excellent, very good or good than total New Zealand adults, namely Manukau and Manurewa-Papakura.

Adults from the remaining eight locations have similar rates of self-reported excellent, very good or good health to total New Zealand adults.



##### Access to primary health care

Figure 24. Unmet need for primary health care, among adults over 15 years, NZHS 2011/12 – 2014/15, unadjusted

Adults from one of the locations are **less** likely to have an unmet need for primary health care than total New Zealand adults, namely Manukau.

Adults from one of the locations are **more** likely to have an unmet need for primary health care than total New Zealand adults, namely Lower Hutt.

Adults from the remaining eight locations have similar rates of having an unmet need for primary health care to total New Zealand adults.



### New Zealand Health Survey: Children

#### Additional methodological notes

Table 6 shows the number of children from each Healthy Families NZ location who answered the NZHS during the four-year period 2011/12 to 2014/15. The number of children for whom data was available ranged from 995 in Manukau to 131 in Spreydon-Heathcote.

Unadjusted results were suppressed when the number of survey respondents with a particular risk factor or condition was less than five.

Age-standardisation was done using the direct method and the World Health Organisation (WHO) standard population. Age-standardised results with less than 20 people with a particular risk factor or condition were considered unreliable and suppressed (Australian Institute of Health and Welfare 2011). Adjusted results were also checked to ensure that the total respondents in each age group was greater than 30.

Results with a relative standard error over 50% have not been presented as these results are considered too unreliable for use, while results with a relative standard error between 30% and 50% should be used with caution (Ministry of Health 2016).

Table 6. Number of children in survey, Healthy Families NZ location, 2011/12 – 2014/15



#### Findings

##### Healthy eating

Figure 25. Adequate vegetable intake, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from three of the locations are **more** likely to eat the recommended number of servings of vegetables for their age each day than total New Zealand children, namely East Cape, Spreydon-Heathcote, and Invercargill.

Children from two of the locations are **less** likely to eat the recommended number of servings of vegetables for their age each day than total New Zealand children, namely Manukau and Manurewa-Papakura.

Children from the remaining five locations have similar rates of eating the recommended number of servings of vegetables for their age each day to total New Zealand children.



Figure 26. Adequate fruit intake, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from one of the locations are **more** likely to eat at least two servings of fruit each day than total New Zealand children, namely Invercargill.

Children from two of the locations are **less** likely to eat at least two servings of fruit each day than total New Zealand children, namely Manukau and Whanganui Rangitīkei Ruapehu.

Children from the remaining seven locations have similar rates of eating at least two servings of fruit each day to total New Zealand children.



Figure 27. Adequate vegetable and fruit intake, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from one of the locations are **more** likely to meet both the vegetable and fruit intake guidelines than total New Zealand children, namely Invercargill.

Children from two of the locations are **less** likely to meet both the vegetable and fruit intake guidelines than total New Zealand children, namely Manukau and Manurewa-Papakura.

Children from the remaining seven locations have similar rates of meeting both the vegetable and fruit intake guidelines to total New Zealand.



Figure 28. Fizzy drink intake 3+ times/week, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from three of the locations are **more** likely to have drunk ‘fizzy drink’ three or more times in the past week than total New Zealand children, namely Manukau, Manurewa-Papakura, and East Cape.

Children from the remaining seven locations have similar rates of having drunk ‘fizzy drink’ three or more times in the past week to total New Zealand children.



Figure 29. Fast food intake 3+ times/week, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from two of the locations are **more** likely to have eaten fast food three or more times in the past week than total New Zealand children, namely Manukau and Manurewa-Papakura.

Children from the remaining seven[[7]](#footnote-7) locations have similar rates of having eaten fast food three or more times in the past week to total New Zealand children.



##### Physical activity

Figure 30. Television watching, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from five of the locations were **more** likely to have watched two or more hours of television each day in the past week than total New Zealand children, namely Manukau, Manurewa-Papakura, East Cape, Whanganui Rangitīkei Ruapehu, and Lower Hutt.

Children from the remaining five locations have similar rates of having watched two or more hours of television each day in the past week to total New Zealand children.



Figure 31. Active travel, among children aged 5-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from one of the locations were **less** likely to use a physically active way to travel to and from school than the total New Zealand children, namely Far North.

Children from the remaining nine locations have similar rates of using a physically active way to travel to and from school to total New Zealand children.



##### Body mass index

Figure 32. Obese, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from four of the locations are **more** likely to be obese than total New Zealand children, namely Manukau, Manurewa-Papakura, East Cape, and Whanganui Rangitīkei Ruapehu.

Children from the remaining six locations have similar rates of obesity to total New Zealand children.



Figure 33. Overweight, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from three of the locations are **more** likely to be overweight than total New Zealand children, namely Far North, Manukau, and East Cape.

Children from the remaining seven locations have similar rates of being overweight to total New Zealand children.



Figure 34. Overweight or obese, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from five of the locations are **more** likely to be either overweight or obese than total New Zealand children, namely Far North, Manukau, Manurewa-Papakura, East Cape, and Whanganui Rangitīkei Ruapehu.

Children from the remaining five locations have similar rates of being either overweight or obese to total New Zealand children.



Figure 35. Healthy weight, among children aged 2-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from four of the locations are **less** likely to be a healthy weight than total New Zealand children, namely Manukau, Manurewa-Papakura, East Cape, Whanganui Rangitīkei Ruapehu.

Children from the remaining six locations have similar rates of being a healthy weight to total New Zealand children.



##### Oral health

Figure 36. Teeth removed due to decay, among children aged 1-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from two of the locations are **more** likely to have had one or more teeth removed in the past 12 months due to decay, infection or gum disease than total New Zealand children, namely Far North and Rotorua.

Children from the remaining five[[8]](#footnote-8) locations have similar rates of having had one or more teeth removed in the past 12 months due to decay, infection or gum disease to total New Zealand children.



##### Health status

**Figure 37. Good or better parent-rated health, among children aged 0-14 years, NZHS 2011/12 – 2014/15, unadjusted**

Children from all of the locations have similar rates of parent-rated good, very good or excellent health to total New Zealand children.

Access to primary health care

Figure 38. Unmet need for primary health care, among children aged 0-14 years, NZHS 2011/12 – 2014/15, unadjusted

Children from two of the locations are **less** likely to have an unmet need for primary health care than total New Zealand children, namely Manukau and Spreydon-Heathcote.

Children in two of the locations are **more** likely to have an unmet need for primary health care than total New Zealand children, namely Manurewa-Papakura and Lower Hutt.

Children in the remaining six locations have similar rates of unmet need for primary health care to total New Zealand children.



#### New Zealand Health Survey Glossary

Table 7. NZHS glossary, adults

|  |  |  |
| --- | --- | --- |
| **Indicator**  | **Definition** | **Further explanation** |
| **Health status, health behaviours and risk factors** |
| Current smokers | Adults who are current smokers (smoke at least monthly) |  |
| Hazardous drinkers | Adults who are hazardous drinkers (score 8 or more on an Alcohol Use Disorders Identification Test), in total population  | ‘Hazardous drinking’ refers to an established drinking pattern that carries a risk of harming the drinker’s physical or mental health, or having harmful social effects on the drinker or others. |
| Adequate vegetable intake | Adults who eat at least three servings of vegetables per day, as recommended by the Ministry of Health, |  |
| Adequate fruit intake | Adults who eat at least two servings of fruit per day, as recommended by the Ministry of Health |  |
| Adequate vegetable and fruit intake | Adults who eat at least two servings of fruit per day *and* at least three servings of vegetables per day, as recommended by the Ministry of Health |  |
| Physical activity | Adults who were physically active for at least 30 minutes on five or more days in the past week | Physical activity (adults aged 15+ years) is defined as doing at least 30 minutes of brisk walking or moderate-intensity physical activity (or equivalent vigorous activity), for at least 10 minutes at a time, at least five days a week. Examples of moderate-intensity physical activity include golf, heavy gardening (such as manual lawn-mowing), heavy housework (such as cleaning windows) and occupations such as plumbing. Examples of vigorous activity include running, touch rugby and vigorous work such as chopping wood. The Ministry of Health recommends that adults aged 18+ years do at least 30 minutes of moderate-intensity physical activity on most if not all days of the week. |
| Little or no physical activity | Adults who were physically active for less than 30 minutes in the past week |  |
| Underweight | Adults who are underweight, with a measured body mass index (BMI) of 18.5 or less (or equivalent for < 18 years) |  |
| Healthy weight | Adults who are a healthy weight, with a measured body mass index (BMI) between 18.5 and 24.99 (or equivalent for < 18 years) |  |
| Overweight | Adults who are overweight, with a measured body mass index (BMI) between 25.00 to 29.99 (or equivalent for < 18 years) |  |
| Obese | Adults who are obese, with a measured body mass index (BMI) of 30 or more (or equivalent for < 18 years) |  |
| Overweight/obese | Adults who are overweight, with a measured body mass index (BMI) between 25.00 to 29.99 (or equivalent for < 18 years) OR Adults who are obese, with a measured body mass index (BMI) of 30 or more (or equivalent for < 18 years) |  |

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| **Health conditions** |
| High blood pressure (medicated) | Adults diagnosed with high blood pressure and currently taking medication for this condition  | Excludes pregnant women |
| High cholesterol (medicated) | Adults diagnosed with high cholesterol and currently taking medication for this condition |  |
| Ischaemic heart disease (diagnosed) | Adults diagnosed with ischaemic heart disease | A person is defined as having ischaemic heart disease if they have been admitted to hospital with a heart attack at some time in their life, or if they have been diagnosed with angina (typically temporary chest pain while doing exercise) by a doctor |
| Heart failure (diagnosed) | Adults diagnosed as having heart failure. | A person is defined as having heart failure if they have ever been told by a doctor that they have heart failure.  |
| Stroke (diagnosed) | Adults diagnosed as having had a stroke, excluding transient ischaemic attacks (TIA) | A person is defined as having had a stroke if a doctor has told them at some time in their life that they have had a stroke (this excludes transient ischaemic attacks, which are sometimes referred to as mini-strokes). |
| Diabetes (diagnosed) | Adults diagnosed as having diabetes | A person is defined as having diabetes if they have ever been told by a doctor that they have diabetes. This does not include diabetes during pregnancy (gestational diabetes) |
| Type 2 diabetes (proxy) | Adults aged 25 years and over, diagnosed as having diabetes when they were 25 years or older. | A person is defined as having type 2 diabetes if they have ever been told by a doctor that they have diabetes and they were 25 years or older when they were first told by a doctor that they had diabetes. |
| Mood or anxiety disorder (diagnosed) | Adults diagnosed with a mood (depression or bipolar disorder) and/or anxiety disorder | People who reported that at some time in their life a doctor had told them they had depression, bipolar disorder and/or anxiety disorder (including generalised anxiety disorder, phobias, posttraumatic stress disorder and obsessive-compulsive disorder) |
| Psychological distress | Adults experiencing psychological distress in the past four weeks, with a score of 12 or more on the K10, | The NZHS measures psychological (mental) distress using the Kessler Psychological Distress Scale (K10). This measures a person’s experience of symptoms such as anxiety, confused emotions, depression or rage in the past four weeks. People who have a score of 12 or more have a high probability of having an anxiety or depressive disorder. |
| **Oral health** |
| Teeth removed due to decay | Adults who had one or more of their teeth removed in the past 12 months, due to decay, infection or gum disease | Excludes teeth lost for other reasons, such as injury, a crowded mouth or orthodontics. |
| **Self-rated health** |
| Good or better self-rated health | Adults who rated their health as at least good (including excellent, very good or good) |  |
| **Access to health care**  |
| Unmet need for primary health care | Adults who have experienced one or more types of unmet need for primary health care in the past 12 months | Whether people had experienced any of the following five barriers to accessing primary health care in the past 12 months: unmet need for a GP due to cost; unmet need for after-hours services due to cost; unmet need for a GP due to lack of transport; unmet need for after-hours services due to lack of transport; and inability to get an appointment at their usual medical centre within 24 hours. |

Table 8. NZHS glossary, children

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| **Result** | **Definition** | **Further explanation** |
| **Health status, health behaviours and risk factors** |
| Adequate vegetable intake (2-14 years) | Children aged 2-4 years who eat at least two servings of vegetables per day OR children aged 5-14 years who eat at least three servings of vegetables per day.  | As recommended by the Ministry of Health |
| Adequate fruit intake (2-14 years) | Children aged 2-14 years who eat at least two servings of fruit per day. | As recommended by the Ministry of Health |
| Adequate vegetable and fruit intake (2-14 years) | Children aged 2-14 years who eat the recommended number of servings of vegetables per day for their age AND at least two servings of fruit per day  | As recommended by the Ministry of Health |
| Fizzy drink intake 3+ times/week (2-14 years) | Children aged 2-14 years who had had a fizzy drink, such as cola or lemonade, three or more times in the past week |  |
| Fast food intake 3+ times/week (2-14 years) | Children aged 2-14 years who had eaten any food purchased from a takeaway shop or fast food place, three or more times in the past week  | Food such as fish and chips, burgers, fried chicken or pizza. |
| Television watching (2-14 years) | Children aged 2–14 years who watched two or more hours of television each day | Averaged over a week. Excludes other screen time eg computer games.  |
| Active travel (5-14 years) | Children aged 5–14 years who travel to and from school by walking, cycling or other non-motorised mode such as skates.  |  |
| Thinness (2-14 years) | Children who are low weight for age, with a measured body mass index (BMI) equivalent to an adult BMI of 18.5 or less | Revised International Obesity Task Force (IOTF) BMI age and sex specific reference values used to classify a thinness category in children and adolescents aged 2–14 years |
| Healthy weight(2-14 years) | Children who are a healthy weight, with a measured body mass index (BMI), equivalent to an adult BMI of between 18.5 and 24.99 | Revised International Obesity Task Force (IOTF) BMI age and sex specific reference values used to classify a healthy weight category in children and adolescents aged 2–14 years |
| Overweight(2-14 years) | Children aged 2-14 years who are overweight, with a measured body mass index (BMI), equivalent to an adult BMI of between 25.00 to 29.99 | Revised International Obesity Task Force (IOTF) BMI age and sex specific reference values used to classify overweight in children and adolescents aged 2–14 years |
| Obese (2-14 years) | Children aged 2-14 years who are obese, with a body mass index (BMI) equivalent to an adult BMI of 30 (or greater) | Revised International Obesity Task Force (IOTF) BMI age and sex reference values used to classify obesity in children and adolescents aged 2–14 years |
| Overweight/Obese (2-14 years) | Children aged 2-14 years who are overweight, with a measured body mass index (BMI), equivalent to an adult BMI of between 25.00 to 29.99 OR Children aged 2-14 years who are obese, with a body mass index (BMI) equivalent to an adult BMI of 30 (or greater) |  |

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| --- | --- | --- |
| **Oral health** |  |  |
| Teeth removed due to decay (1-14 years) | Children who had one or more of their teeth removed in the past 12 months, due to decay, infection or gum disease | Excludes teeth lost for other reasons, such as injury, a crowded mouth or orthodontics. |
| **Parent-rated health** |
| Good or better parent-rated health | Children with excellent, very good or good health, as rated by their parent. |  |
| **Access to health care**  |
| Unmet need for primary health care | Children who have experienced one or more types of unmet need for primary health care, at any point in the past 12 months | Whether children had experienced any of these six barriers to accessing primary health care services in the past 12 months: unmet need for a GP due to cost; unmet need for after-hours services due to cost; unmet need for a GP due to lack of transport; unmet need for after-hours services due to lack of transport; unmet need for a GP due to lack of childcare for other children; and inability to get an appointment at their usual medical centre within 24 hours. |

## B4 School Check results

### What is presented?

This section presents results from the B4 School Check for obesity and overweight. The B4 School Check is a nationwide programme offering a free health and development check for four-year-old children.

Crude or unadjusted results are presented for each Healthy Family NZ location and total New Zealand. Results are shown as the percentage of 4-year-old children using four financial years of data from 2011/12 to 2014/15 (July to June).

The results presented in this report have 95% confidence intervals. A confidence interval is a range around an estimate that tells us how precise it is. It indicates the level of uncertainty in a measurement that occurs due to taking a sample. If we selected many samples, the 95% confidence interval would enclose the ‘true’ value for the population 95% of the time. The sample size of the group influences the size of the confidence interval. When the sample size is small, the confidence interval is typically wide and the estimate is less precise (Ministry of Health 2012).

The difference between two groups or years is statistically significant if their confidence intervals do not overlap. Sometimes, even when two confidence intervals overlap, the difference between these groups can be statistically significant (Ministry of Health 2012). The text reports differences where the confidence intervals do not overlap unless otherwise stated.

#### Methodological notes

Table 9 shows the number of children who had completed some or all of the B4 School Check during the four-year period 2011/12 to 2014/15. The number of children ranged from 2,867 in Spreydon-Heathcote to 10,650 in Manukau.

Table 9. Number of children completing some or all of the B4 School Check, 2011/12 – 2014/15

|  |  |
| --- | --- |
| **Location** | **Number of children checked** |
| Far North | 3 112 |
| Waitakere | 9 136 |
| Manukau  | 10 650 |
| Manurewa-Papakura | 8 971 |
| East Cape  | 3 262 |
| Rotorua | 4 124 |
| Whanganui Rangitīkei Ruapehu | 3 293 |
| Lower Hutt | 5 411 |
| Spreydon-Heathcote | 2 867 |
| Invercargill | 3 014 |

Assessing obesity and overweight in children during the B4 School Check is done using Body Mass Index (BMI) centiles. BMI centiles for the child’s sex and age in years and months are based on the WHO Child Growth Standards published in 2006. A BMI above the 91st centile is considered *overweight* and a BMI above the 98th centile is considered *very overweight* (clinically obese) (Ministry of Health 2010). These percentile thresholds have been set for use in a clinical setting.

Children are excluded from the analysis of overweight and obese prevalence if;

* The caregiver is recorded as declining the B4 School Check
* The caregiver is recorded as declining the growth component of the B4 School check where the height and weight are measured for calculation of height
* The child is outside the target age range at the time of the growth check (less than 48 months or greater than 60 months)
* The child has a recorded BMI of less than 5 or greater than 60 (probable data entry errors).

### Findings

#### Current rates of obese and overweight

##### Obese

Among four-year old children in 2014/15, children in one of the Healthy Families NZ locations are **less** likely to be obese than total New Zealand children, namely Spreydon-Heathcote (Figure 39).

Among four-year old children in 2014/15, children in four of the locations are **more** likely to be obese than total New Zealand children, namely Far North, Manukau, Manurewa-Papakura and Rotorua.

Four-year-old children in the remaining five locations have similar rates of obesity to total New Zealand children.

Figure 39. Obese, Healthy Families NZ locations, among children aged 48 – 60 months (4 years), B4 School Check, 2014/15

##### Overweight

Among four-year old children in 2014/15, children in one of the Healthy Families NZ locations are **less** likely to be overweight than total New Zealand children, namely Spreydon-Heathcote (Figure 40).

Among four-year old children in 2014/15, children in four of the locations are **more** likely to be overweight than total New Zealand children, namely Manukau, Manurewa-Papakura, East Cape and Invercargill.

Four-year-old children in the remaining five locations had similar rates of being overweight to total New Zealand children.

Figure 40. Overweight, Healthy Families NZ locations, among children aged 48 – 60 months (4 years), B4 School Check, 2014/15

##### Overweight or obese

In seven of the Healthy Families NZ locations, the rate of overweight four-year-old children is higher than the rate of obese four-year-old children (Appendix 1). This is the same pattern as for total New Zealand four-year-old children (Figure 41).

Four-year-old children in the remaining three locations had similar rates of being overweight and obese, namely Far North, Manukau and Rotorua.

Figure 41. Overweight and obese, Healthy Families NZ locations, among children aged 48 – 60 months (4 years), B4 School Check, 2014/15

#### Time trends

##### Obese

Figure 42 shows the overall trend for obesity for all Healthy Families NZ locations and for total New Zealand, among four-year-old children, over the four years 2011/12 to 2014/15.

There has been a small decrease in obesity among all New Zealand children, with a statistically significant decline between 2011/12 and2014/15 (Table 10). There has also been a statistically significant decrease in obesity in Manurewa-Papakura children from 17% in 2011/12 and 12% in 2014/15 (Table 14). For the remaining nine locations, there is no clear change over time in rates of obesity among four-year old children.

Figure 42. Obese, Healthy Families NZ locations, B4 School Check, 2011/12 – 2014/15



##### Overweight

Figure 43 shows the overall trend for being overweight for all Healthy Families NZ locations and for total New Zealand, among four-year-old children, over the four years 2011/12 to 2014/15.

Rates of overweight among children have been stable for New Zealand over the four years 2011/12 to 2014/15. Among the Healthy Families NZ locations, there has been a statistically significant increase in rates of overweight four-year-old children in Manukau, from 15% in 2011/12 to 20% in 2014/15 (Table 13). In Lower Hutt there has also been a statistically significant increase in rates of overweight four-year-old children from a low of 12% in 2012/13 to a high of 17% in 2014/15 (Table 18).

For the remaining locations, there is no clear change in rates of overweight children over the four-year period.

Figure 43.Overweight, Healthy Families NZ locations, B4 School Check, 2011/12 – 2014/15



#### Results tables for B4 School Check findings

Table 10. B4 School Check findings for overweight and obesity, all of New Zealand



Table 11. B4 School Check findings for overweight and obesity, Far North



Table 12. B4 School Check findings for overweight and obesity, Waitakere



Table 13. B4 School Check findings for overweight and obesity, Manukau



Table 14. B4 School Check findings for overweight and obesity, Manurewa-Papakura



Table 15. B4 School Check findings for overweight and obesity, East Cape



Table 16. B4 School Check findings for overweight and obesity, Rotorua



Table 17. B4 School Check findings for overweight and obesity, Whanganui Rangitīkei Ruapehu



Table 18. B4 School Check findings for overweight and obesity, Lower Hutt



Table 19. B4 School Check findings for overweight and obesity, Spreydon-Heathcote



Table 20. B4 School Check findings for overweight and obesity, Invercargill



1. Ministry of Health. 2012. The Health of New Zealand Adults 2011/12: Key findings of the New Zealand Health Survey. Wellington: Ministry of Health [↑](#footnote-ref-1)
2. Australian Institute of Health and Welfare. (2011). Principles on the use of direct age-standardisation in administrative data collections: for measuring the gap between Indigenous and non-Indigenous Australians. Canberra: Australian Institute of Health and Welfare [↑](#footnote-ref-2)
3. Ministry of Health. (2016). 2014/15 (Year 4) New Zealand Health Survey: Confidentialised Unit Record File (CURF) User Document V1. Wellington: Ministry of Health [↑](#footnote-ref-3)
4. Results for one location (i.e. Spreydon-Heathcote) is considered unreliable and has been suppressed. [↑](#footnote-ref-4)
5. Results for two locations (i.e. Manurewa-Papakura and Spreydon-Heathcote) are considered unreliable and have been suppressed. [↑](#footnote-ref-5)
6. Results for one location (i.e. Spreydon-Heathcote) is considered unreliable and has been suppressed. [↑](#footnote-ref-6)
7. Results for one location (i.e. Spreydon-Heathcote) is considered unreliable and has been suppressed. [↑](#footnote-ref-7)
8. Results for three locations (i.e. Whanganui Rangitīkei Ruapehu, Spreydon-Heathcote, and Invercargill) are considered unreliable and have been suppressed. [↑](#footnote-ref-8)