

# Content Guide 2018/19

New Zealand Health Survey



**New Zealand Health Survey**

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# Introduction

This guide describes the content of the New Zealand Health Survey (NZHS) for the period 1 July 2018 to 30 June 2019. It also briefly outlines the history of the NZHS and its development into a continuous survey, describes the process for developing the adult and child questionnaires for 2018/19 and provides an overview of each section of the survey. The questionnaires are available with this report on the Ministry of Health's (the Ministry's) website: [www.health.govt.nz](http://www.health.govt.nz)

## Background

The NZHS was first undertaken in 1992/93, with further surveys taking place in 1996/97, 2002/03 and 2006/07. The Ministry's wider health survey programme included surveys on adult and child nutrition; tobacco, alcohol and drug use; mental health; and oral health. From 2011, the Ministry integrated the NZHS and these other surveys from its wider survey programme into a single survey, which is now in continuous operation. The rationale for this change is detailed in *The New Zealand Health Survey: Objectives and topic areas* (Ministry of Health 2010).

As a signatory to the *Protocols of Official Statistics* (Statistics New Zealand 1998), the Ministry employs best-practice survey techniques to extract high-quality information from the NZHS. Where possible, the Ministry uses standard frameworks and classifications so that data from the NZHS can be integrated with data from other sources.

## Survey design and methodology

The target population for the survey is New Zealand's usually resident population of all ages and including those living in non-private accommodation. The NZHS sample is selected using a stratified, multi-stage area design. Most of the survey questionnaire is conducted through face-to-face interviews, using computer-assisted personal interviewing (CAPI) software. Some parts of the survey are self-completed by respondents, because of the potentially sensitive nature of the questions. Respondents are adults aged 15 years and older, as well as children aged 0–14 years, who are interviewed through their parent or legal guardian acting as a proxy respondent. The NZHS sample design and methodology will be published online alongside this report, on the Ministry's website: [www.health.govt.nz](http://www.health.govt.nz)

# Goal and objectives

## Goal

The goal of the NZHS is to support the formulation and evaluation of health policy by providing timely, reliable and relevant health information that cannot be collected more efficiently from other sources. The information covers population health, health risk and protective factors, as well as health service utilisation.

## Objectives

To achieve this goal, 13 high-level objectives have been identified for the NZHS. These are to:

1. monitor the physical and mental health of New Zealanders and the prevalence of selected long-term health conditions
2. monitor the prevalence of risk and protective factors associated with these long-term health conditions
3. monitor the use of health services, and patient experience with these services, including access to the services
4. monitor trends in health-related characteristics, including health status, risk and protective factors, and health service utilisation
5. monitor health status and health-related factors that influence social wellbeing outcomes
6. examine differences between population groups, as defined by age, sex, ethnicity and socioeconomic position
7. provide a means for collecting data quickly and efficiently in order to address emerging issues related to the health of the population
8. enable follow-up surveys of at-risk populations or patient groups identified from the NZHS as necessary to address specific information needs
9. measure key health outcomes before and after a policy change or intervention
10. facilitate links to routine administrative data collections to create new health statistics and address wider information needs
11. provide data for researchers and health statistics for the general public
12. allow New Zealand data to be compared with international health statistics
13. evaluate methods and tools to improve the survey's quality, including implementing objective tests to capture information that is not accessible under the self-report process, such as measuring blood pressure.

# Information domains

To meet the high-level objectives of the NZHS, particularly the first six listed above, detailed information is collected across nine information areas or domains. These nine domains are:

1. health status
2. long-term health conditions
3. behaviours and risk factors (including tobacco, alcohol and drug use)
4. nutrition
5. mental health
6. oral health
7. health service utilisation
8. patient experience
9. sociodemographics.

There is crossover between some domains. For example, aspects of mental health and oral health are included within the long-term health conditions domain, and nutrition is included within the behaviours and risk factors domain.

## Questionnaire components

The NZHS includes a set of questions drawn from each of the nine information domains. These 'core' questions remain the same each year. They make up about half of the survey questions. The NZHS also includes questions that examine a topic in more depth. These 'module' questions change each year and make up the other half of the survey questions.

Because of its size and importance, the behaviours and risk factors domain has been split into a number of modules, including physical activity, tobacco use, alcohol consumption, drug use, problem gambling and sexual and reproductive health. Some modules may run concurrently (eg, tobacco, drugs and alcohol use ran together in the 2012/13 survey).

The continuous nature of the survey also makes it possible to incorporate shorter (one- to three-minute) 'clip-on' modules. These clip-on modules may address an urgent emerging issue or an important topic where policy development or monitoring requires additional information that can be obtained through a small number of questions.

# Process for developing the New Zealand Health Survey

The Ministry's Health and Disability Intelligence Group developed the adult and child questionnaires for the NZHS in consultation with key internal stakeholders (eg, policy groups) and external stakeholders (eg, technical experts and data users).

## Core component

The NZHS aims to maintain continuity with previous surveys so that time trends can be analysed. To facilitate this approach, the 2006/07 NZHS was used as a 'question bank'; that is, where possible, the wording of the core questions, response options, show-cards and interviewer prompts from the 2006/07 NZHS has been retained in subsequent surveys.

Topics for inclusion in the core component of the NZHS were based on those outlined in *The New Zealand Health Survey: Objectives and topic areas* (Ministry of Health 2010). The following four criteria were used to determine the topics that would be included each year as core components.

- Impact – the topic has a large impact on health, health policy or health care costs.
- Measurability – the topic lends itself to robust measurement, including high reliability and validity and responsiveness to change.
- Disaggregation – the data that can be collected on the topic can be analysed by social group or region.
- International comparability – the topic lends itself to meaningful international benchmarking.

Priority was given to questions that related to key indicators or outputs and could be used to monitor important health-related time trends. Results on an indicator or output that were included in *A Portrait of Health: Key results of the 2006/07 New Zealand Health Survey* (Ministry of Health 2008) were considered to be important.

Most of the questions selected for the core component of the survey were from the 2006/07 NZHS. The 2006/07 NZHS included a number of questions from validated instruments, such as the Medical Outcomes Study Short Form (SF-36) and the Alcohol Use Disorders Identification Test (AUDIT). For the NZHS core, the SF-36 was replaced by the SF-12, to minimise interview time. Most other questions selected for the NZHS core occurred in at least one previous survey (1992/93, 1996/97 and/or 2002/03).

The need to sustain time series makes it more difficult to update and improve core questions and to add new core questions. Where needed, questions will generally be improved when a topic area covered by a core question is reviewed in depth during the development of a related module.

The core component of the NZHS includes measuring height and weight in respondents aged two years and older, waist circumference in respondents aged five years and older and blood pressure in respondents aged 15 years and older.

## Module components

The module topics in the 2018/19 NZHS are:

- dietary habits, for adults and children
- alcohol use, for adults
- functional difficulties, for adults and children.

Details of question development are explained in 'Content of the New Zealand Health Survey' below.

All the module topics for the continuous NZHS until 2018/19 are summarised in Table 1.

**Table 1: New Zealand Health Survey module topics, 2011/12–2018/19**

Year of NZHS	Child module topic(s)	Adult module topic(s)
2011/12	Health service utilisation and patient experience	Health service utilisation and patient experience Problem gambling Racial discrimination
2012/13	Child development Food security Exposure to second-hand smoke	Alcohol use Tobacco use Drug use
2013/14	Long-term conditions Health status Disability status Living standards Housing quality Exposure to second-hand smoke	Long-term conditions Health status Disability status Living standards Housing quality
2014/15	Child development Food security Rheumatic fever	Sexual and reproductive health Biomedical tests Rheumatic fever (under 25 years)
2015/16	Child development Food security Exposure to second-hand smoke Rheumatic fever	Tobacco use Rheumatic fever (under 25 years)

2016/17	Behavioural and developmental problems Rheumatic fever	Mental health and substance use Rheumatic fever (under 25 years) Racial discrimination
2017/18	Health service utilisation and patient experience	Health service utilisation and patient experience Understanding health and health care
2018/19	Dietary habits Functional difficulties	Dietary habits Functional difficulties Alcohol use

## Cognitive testing

Cognitive testing helps ensure questions are understood as intended and that response options are appropriate. The cognitive testing process includes:

- comprehension – how does the respondent understand the question?
- recall – what knowledge or memory does the respondent select that is relevant to the subject matter?
- judgement and selection – how does the respondent judge what they remember and formulate a response?

Initially, new or changed questions are cognitively tested with colleagues as respondents. Then a smaller number of questions are prioritised for cognitive testing with relevant populations (demographic variety, extreme cases etc). CBG Health Research Limited, an Auckland-based independent public health research provider, carries out this second stage of cognitive testing.

Researchers investigate whether the questions are working as intended and whether the respondents have access to all the information needed to answer the questions accurately.

Respondents in cognitive testing are invited to comment on:

- question flow/sequencing
- level of engagement/satisfaction with the questions
- problems/issues with the questionnaire.

For the 2018/19 NZHS cognitive testing, the survey questions were administered face-to-face. After asking each survey question, a researcher conducted a cognitive interview on that question before moving to the next question. The researchers read the questions aloud and recorded their findings electronically into a spreadsheet. Picture show-cards that accompanied the questions were made available to respondents on a tablet computer.

The survey targeted respondents from more deprived areas to ensure adequate testing of questions relating to dietary behaviours that are closely correlated with deprivation. One-third of the sample who took part in the cognitive testing were adult and child

respondents who agreed to be re-contacted for further research in the 2016/17 NZHS and resided in more deprived areas (NZDep score of 1–3). The remaining two-thirds of the sample were adult and child respondents recruited via the survey providers' existing professional and personal networks. Respondents were selected to represent both urban and rural areas of New Zealand with respondents residing in Auckland, Wellington, Taupo and Northland.

## Adult survey 2018/19

Researchers conducted interviews with 60 adults aged 15 years and over to test 23 new or modified questions included in the adult survey.

Generally, the questions were understood as intended. Following cognitive testing, changes were made to several questions. The key changes are listed below.

- Additional words or interviewer instructions were added to various dietary habits questions to make it clearer what the respondent should include or exclude. For example, in a question about how many slices of bread or bread rolls the respondent eats per day, a statement was added indicating that bagels and wraps should be excluded.
- The picture show-cards were improved to ensure they covered the most appropriate foods and drinks that would help respondents to answer the questions. For example, in a question about what type of butter, margarine or plant oil spread the respondent uses the most of, pictures of budget brands were added to ensure they were included, if applicable.
- For the questions about fruit and vegetable consumption, picture show-cards showing a serving of fruit or vegetables on a person's hand or a bowl were finalised. During testing, respondents reported that the picture show-cards provided greater clarity about what a serving is. A picture of the fruit or vegetables in a measuring jug was also tested but respondents preferred the picture featuring a bowl.
- The questions about the respondent's perception of their weight and their weight intentions were changed from interviewer-administered to self-completed by the respondent. This was because some respondents felt uncomfortable giving a response to the interviewer due to the personal nature of these particular questions.

## Child survey 2018/19

Researchers conducted interviews with 60 parents/primary caregivers of 60 children aged 0–14 years to test seven questions.

The child survey questions tested all related to dietary habits. Following cognitive testing, the same changes were made to the child questions as were made to the adult questions.

# Pilot testing

The main objectives of the pilot testing were to:

- ensure that the questionnaires performed as expected, with all routing, edits and consistency checks working correctly
- determine the average duration for each element of the questionnaire as well as the survey process overall
- identify and explore questions with high non-response rates and 'other' response rates
- evaluate whether the training provided was comprehensive and fully prepared the interviewers to work on the project
- evaluate how respondents engaged with the survey
- analyse completion rates for the self-complete sections of the adult survey
- assess the impact of adding the blood pressure measurement to the adult survey on the overall measurement rates and survey duration
- assess the placement of the functional difficulties questions in both surveys
- assess the placement of the perceptions of weight questions in the adult self-completion section
- evaluate the performance of the electronic picture show-cards developed for the dietary habits module
- investigate the response to including the question text on the show-cards (in addition to the response options).

Researchers tested the questionnaires on 100 respondents from different age, sex and ethnic groups. The respondents were recruited via the usual NZHS respondent selection process.

The key changes resulting from the pilot test were as follows.

- The functional difficulties questions in the adult survey were moved to a slightly different location in the survey. All researchers agreed that the questions would flow better if they were positioned directly after the Medical Outcomes Study Short Form version 2.0 (SF-12) (Ware et al 1998) rather than after the Kessler 10-item Psychological Distress Scale (K10) (Andrews and Slade 2001). In this way, the health status section asks first about general health, then functional difficulties, then mental health.
- A 'never' response option was added to the core question in the adult and child surveys about how often the respondent's teeth are brushed. This was added because two parents or caregivers who never brushed their child's teeth didn't think that the option 'less than once a day' was an accurate reflection of the frequency they brushed.

# Ethics approval

The Multi-region Ethics Committee (MEC) approved the NZHS 2018/19 (Multi-region Ethics Committee Reference: MEC/10/10/103).

# Content of the New Zealand Health Survey

The adult and child questionnaires included the following sections, which are core to the questionnaires unless noted otherwise.

- Long-term health conditions
- Health service utilisation and patient experience
- Health behaviours and risk factors
- Dietary habits (a module for adults and children)
- Alcohol use (a module clip-on for adults)
- Health status
- Functional difficulties (a module clip-on for adults and children)
- Sociodemographics
- Anthropometric measurements
- Permission details after completing the survey.

## Long-term health conditions

Long-term health conditions cover any ongoing or recurring health problem, including a physical or mental illness, which has a significant impact on a person's life and/or the lives of family, whānau or other carers. Such conditions are generally not cured once acquired. For the purposes of monitoring population health, a long-term health condition is defined in the NZHS as a health condition that has lasted, or is expected to last, for more than six months and is based on a respondent's self-report of what a doctor told them.

This section collects information on the prevalence of major long-term conditions (see Table 2) as well as treatments for these conditions.

In the 2017/18 NZHS, a self-rated oral health question was included for adults and children aged 1–14 years, asking them to rate the health of their teeth or mouth. This question was also included in the 2009 New Zealand Oral Health Survey and the 2013/14 NZHS long-term conditions module.

In the 2018/19 NZHS, a question about having ever had a hysterectomy was included for female respondents aged 20 years and over.

**Table 2: Long-term health conditions**

<b>Adult</b>	<b>Child</b>
Heart disease	Asthma
Stroke	Eczema
Diabetes	Diabetes
Asthma	Rheumatic heart disease
Arthritis	Autism spectrum disorder
Mental health conditions	Depression
Chronic pain	Anxiety disorder
Oral health	Attention deficit disorder or attention deficit hyperactivity disorder
	Oral health

## Health service utilisation and patient experience

The use of appropriate and effective health care services is an important determinant of population health. Areas of interest for the NZHS include the frequency of health care contact; the range and comprehensiveness of health services; their accessibility, availability and affordability; and the continuity and coordination of care they provide.

Patient experience includes the processes or events that occur (or do not occur) in the course of a specific episode of care. It addresses the interpersonal aspects of care: the interaction between health professionals and health care users. Examples include communication skills, the building of trust, the discussion and explanation of symptoms and the involvement of patients in decisions about their own treatment and care.

The NZHS focuses on health service utilisation and patient experience in the primary health care setting, which is often people's first point of contact with the health system. Nearly all New Zealanders (over 90 percent) have a primary health care provider, and the NZHS provides a comprehensive source of data on primary health care utilisation. Therefore, a number of questions focus on consultations with GPs and primary health care nurses. To reduce recall bias, the time period of interest for many of the patient experience questions relates to primary health care visits that occurred in the previous three months.

Questions are also included about the use of and experience with after-hours and emergency department (ED) services. These questions use a 12-month recall period to capture a sufficient number of contacts with these services.

Information on the use of secondary- and tertiary-level health services (public and private hospitals and medical specialists) can generally be captured in more detail from administrative databases and surveys administered immediately following a patient's contact with these services. Therefore, the NZHS collects only a subset of questions on service utilisation and patient experiences related to secondary- and tertiary-level health services.

A small number of questions are also included on prescriptions, dental health care services and visits with other health care workers.

Many of the health service utilisation and patient experience questions originally come from international surveys, such as the United Kingdom's GP Patient Survey, the Commonwealth Fund International Health Policy Survey and Australian patient experience surveys.

In the 2017/18 NZHS, there were some changes to the questions about visits to primary health care nurses. In the survey, the term 'practice nurse' was replaced with 'nurse at GP clinic or medical centre' in case 'practice' could be misinterpreted to mean a nurse who is not fully qualified. New questions were added about primary health care nurse visits that were completed as part of a GP consultation (including seeing the nurse before or after seeing the GP). These questions were also included in the 2006/07 NZHS.

Questions about whether the usual medical centre was informed after the respondent's visit to an after-hours medical centre, ED or a medical specialist were removed from the 2017/18 NZHS because many respondents were unaware whether their usual medical centre was informed or not.

The question topics included in this section of the NZHS are summarised in Table 3. Most of the topics listed were included in both the adult and child survey, but some were in the adult survey only.

**Table 3: Health service utilisation and patient experience**

Health service setting	Topics
Usual primary health care provider	Type of service, timely access, health checks, health discussions
General practitioners	Visits in last 12 months, visit cost, patient experience, unmet need / barriers to access
Primary health care nurses	Visits in last 12 months, visit cost
Other health care workers	Visits in last 12 months
After-hours medical services	Visits in last 12 months, visit cost, patient experience, unmet need / barriers to access
Hospitals	Visits in last 12 months
Emergency departments	Visits in last 12 months, reason for last visit, patient experience / continuity of care
Medical specialists	Visits in last 12 months, patient experience / continuity of care
Dental health care workers	Visits in last 12 months, unmet need / barriers to access
Prescription medicines	Unmet need / barriers to access

# Health behaviours and risk factors

Health behaviours and risk factors can have a direct or indirect impact on health and wellbeing. For example, smoking has a direct impact on health, while education has an indirect impact by informing and influencing our ability to make better health choices. Health behaviours that have a negative effect on health are referred to as risk factors (eg, smoking), while health behaviours that have a positive effect on health are referred to as protective factors (eg, eating healthy foods such as vegetables and fruit).

Monitoring trends in exposure to risk and protective factors informs the development and evaluation of health policy, especially policy related to health promotion, disease prevention and primary health care. The measurement of risk and protective factors is part of the internationally recognised minimum standards for health surveys. These standards, developed by the World Health Organization (WHO), comprise the STEPwise approach to surveillance of risk factors for non-communicable diseases (STEPS) (WHO 2005).

The core health risk and protective factor questions are based on a subset of questions from the 2006/07 NZHS, some of which were also included in earlier surveys. This provides important time-series information on topics such as smoking.

The questions about alcohol use come from the Alcohol Use Disorders Test (AUDIT). The AUDIT is a 10-item questionnaire that covers three aspects of alcohol use: alcohol consumption, dependence and adverse consequences. A score of eight or more indicates a hazardous drinking pattern. A respondent can reach a score of eight from the alcohol consumption items of the questionnaire alone, for example, by drinking six or more drinks on one occasion, twice a week (Babor et al 2001).

In 2015/16, two alcohol questions were changed in the AUDIT section of the NZHS. Before 2015/16, the NZHS did not define 'drinks' in the two AUDIT questions covering typical quantity and frequency of heavy drinking. To ensure consistency in interpreting the meaning of 'drinks', the authors of the AUDIT recommended that each country apply their own definition of a standard drink (which, in New Zealand, is 10 g pure alcohol), with illustrations of standard drinks in local beverages. Thus, for the 2015/16 survey, the two AUDIT alcohol consumption questions were changed from 'drinks' to 'standard drinks' and included a show-card illustrating the number of standard drinks in various common beverages. The changes were only made for half the survey sample (selected randomly) in order to assess their impact. From 2016/17, the NZHS only uses the standard drinks show-card version of AUDIT, creating a break in the time series.

The 2016/17 NZHS included two new questions about screen time for children aged 2–14 years. The Ministry developed these questions to measure the amount of time children spend watching television or looking at a screen (excluding time spent looking at screens at school or for homework). From 2017/18, the questions about screen time were also asked for children aged 6 months to 2 years to measure screen time in the younger age group as well.

The 2017/18 NZHS also included new questions in the core component on sleep, teeth brushing and use of electronic cigarettes.

Getting enough quality sleep is important for brain functioning, emotional wellbeing and physical health. The NZHS for adults and children asks how much sleep the respondent usually gets in a 24-hour period. This question originally came from the United States' National Health Interview Survey and was also included in the 2013/14 NZHS long-term conditions module. For the 2017/18 NZHS, an interviewer note was added to ensure interviewers use a consistent method of rounding to a whole number.

The Ministry recommends brushing teeth twice a day with standard fluoride toothpaste. The NZHS for adults and children asks how often the respondent brushes their teeth and the type of toothpaste they usually use. The show-card for the question on type of toothpaste used includes pictures to help respondents differentiate between categories, particularly between standard and low-fluoride toothpaste. Similar questions on teeth brushing were included in the 2013/14 NZHS long-term conditions module.

Vaping products have the potential to improve the health of people who choose to switch from tobacco smoking. It is therefore important to monitor their uptake in New Zealand. The NZHS includes questions asking adults whether they have ever tried an electronic cigarette and how often they now use them. These questions were also included in the 2015/16 NZHS tobacco use module. In the 2018/19 NZHS, the words 'or vaping devices' were added to these questions because this is an alternative name for electronic cigarettes.

In the 2017/18 NZHS, the question about drug use was changed from interviewer-administered to self-completed to encourage more honest responses. Respondents whose interview is being conducted with cognitive or language assistance from a family member, caregiver or one of their friends were not asked this question. This is to ensure these confidential responses were not revealed to people with whom the respondent has a personal relationship.

In the 2017/18 NZHS the drug use question was moved to the end of the survey so the self-complete questions were asked together. In the 2018/19 NZHS it was moved to the health behaviours and risk factors section to be asked alongside other self-complete questions relevant to that section of the questionnaire.

The topics included in the core NZHS component of the health behaviours and risk factors section are shown in Table 4.

**Table 4: Health behaviours and risk factors**

Adult	Child
High blood pressure	Perceptions of child's weight
High blood cholesterol	Infant feeding
Physical activity	Dietary habits
Sleep	Physical activity (sedentary behaviour)
Teeth brushing	Sleep
Tobacco use	Teeth brushing
Electronic cigarette use	Response to child's misbehaviour
Dietary habits	
Alcohol use	
Drug use	

## Dietary habits

Poor diet and excess body weight are leading causes of potentially avoidable health loss in New Zealand. In 2017, dietary risks accounted for 8.6% of health loss from all causes, closely followed by high body mass index (BMI) (8.3%) (Institute for Health Metrics and Evaluation 2018).

The 2018/19 NZHS included a dietary habits module for adults and children aged 2–14 years. The questions collect information about key dietary habits associated with diet quality or nutritional status and focus on the priority areas of the Ministry's *Eating and Activity Guidelines* (Ministry of Health, 2015). The questions were largely based on the dietary habits questions from the 2008/09 New Zealand Adult Nutrition Survey, allowing some comparisons over time for adults. In consultation with key stakeholders, some changes to questions were made and new questions were developed.

Short questions on dietary habits can be used as indicators to assess good nutrition when comprehensive dietary assessments, such as 24-hour diet recalls, are not available. However, these types of questions do have several limitations, for example they cannot provide accurate quantitative estimates of food or nutrient intake.

The dietary habits module covers:

- frequency of intake (of processed meats, red meat, fish or other seafood, legumes, nuts or seeds, biscuits or cakes, lollies, fast food or takeaways, drinks made from cordial, concentrate or powder, fruit juice and soft drinks or energy drinks)
- quality of intake (type of bread, milk, butter or spread and cooking oils used most often)
- cooking practices (removing excess fat from red meat before cooking or eating it)
- food groups excluded from diet (eg, red meat, dairy products etc)
- weight perceptions and intentions
- health checks for child at usual medical centre (eg, weight and height measurement, talked about healthy food or nutrition etc).

Results from the module can be used to:

- explore dietary habits of different population groups (eg, by ethnic group, socioeconomic status, body size etc) to help target interventions and support
- provide information for developing and monitoring the Ministry's nutrition policies and programmes
- develop relevant healthy eating resources
- monitor changes in dietary habits over time (where question has been included previously).

Some of the core questions in the child survey changed in the 2018/19 NZHS as follows.

- Breakfast question – changed from asking about having breakfast when at home to having breakfast anywhere.
- Fizzy drinks question – extended from being just about fizzy or soft drinks to also include sports drinks and energy drinks.
- Fast food or takeaways question – made clearer that only those fast food and takeaways highest in saturated fat and salt should be included.
- The recall period was changed from frequency of intake in last seven days to the number of times in a week it is consumed on average while thinking back over the past four weeks.

Electronic picture show-cards, containing pictures of relevant foods and drinks, were developed and used for this section of the survey to help respondents answer the questions. Some questions that were more personal, such as those in the adult survey about weight perceptions and intentions, were self-completed by the respondent rather than asked by the interviewer.

## Alcohol use

The 2018/19 NZHS for adults included an alcohol use clip-on module. This repeated some key questions from the 2012/13 NZHS alcohol use module to allow the Ministry to monitor progress on its policies and actions relating to alcohol use. The clip-on module questions ask about age of first alcoholic drink and drinking alcohol in pregnancy.

The Ministry wants to delay the uptake of alcohol by young people. Early onset of alcohol consumption tends to increase the likelihood of heavy use and has been associated with increased rates of violence and injury and mental health problems (Inter-Agency Committee on Drugs 2015).

The Ministry's advice for women is to stop drinking alcohol if they could be pregnant, are pregnant or are trying to get pregnant. Alcohol can affect the baby's growth, especially in the brain. There is a risk that the baby may have a range of life-long problems, known as fetal alcohol spectrum disorder (FASD) (FASD Working Group 2016).

In a self-complete section of the NZHS, females aged 15–54 years were asked if they have been pregnant in the last 12 months. If they had been pregnant then they were asked about their drinking behaviour during their most recent pregnancy, and if anyone advised them not to drink alcohol.

## Health status

Monitoring the health status of the population provides useful information to evaluate the performance of the health system, identify unmet need for health services, evaluate the impact of the determinants of health and uncover health problems that require further investigation.

Self-reported health measures are based on an individual's own perception of their health status and functioning. These measures provide an alternative source of data to objective measures of health, such as hospital rates and disease prevalence.

The WHO defines a 'health state' as a multi-dimensional attribute of an individual that indicates his or her level of functioning across all important physiological, psychological and psychosocial dimensions of life. The relevant dimensions are those defined in the International Classification of Functioning, Disability and Health (WHO 2001).

Various survey instruments have been developed to assess these dimensions. For adults, instruments included in the core NZHS are the SF-12 and the K10.

The SF-12 is an internationally validated instrument comprising a subset of the SF-36 questions included in the NZHS since 1996/97. The SF-12 includes at least one item for all eight SF-36 domains: physical functioning, role limitation (physical), bodily pain, general health perceptions, vitality, social functioning, role limitation (emotional) and mental health.

The SF-12 is considered to be an appropriate substitute for the SF-36 when a briefer instrument is required and the summary scales are of interest. The SF-12 physical component summary scale and a mental health component summary scale have been shown to explain approximately 90 percent of the variance in the SF-36 summary scales (Ware et al 1996). An analysis of the 2006/07 NZHS showed that the correlation between the SF-12 and SF-36 was 0.95 for the physical summary scales and 0.93 for the mental summary scales.

### SF-12 scoring

Responses to each of the SF-12 items are scored and expressed on a scale of 0–100 for each of the eight health domains. Interpretation of the SF-12 is based on the mean average scores (see Table 5).

**Table 5: Scoring for the SF-12**

Code	Domain	Low score interpretation	High score interpretation
PF	Physical functioning	Limited a lot in performing all physical activities, including self-care, due to health	Performs all types of physical activities, including the most vigorous, without limitations due to health
RP	Role limitation – physical	Limited a lot in work or other daily activities as a result of physical health	No problems with work or other daily activities as a result of physical health
BP	Bodily pain	Very severe and extremely limiting bodily pain	No pain or limitations due to pain
GH	General health perceptions	Evaluates own health as poor and believes it is likely to get worse	Evaluates own health as excellent
VT	Vitality	Feels tired and worn out all of the time	Feels full of energy all of the time
SF	Social functioning	Extreme and frequent interference with normal social activities due to physical or emotional problems	Performs normal social activities without interference due to physical or emotional problems
RE	Role limitation – emotional	Problems with work or other daily activities as a result of emotional problems	No problems with work or other daily activities as a result of emotional problems
MH	Mental health	Has feelings of nervousness and depression all the time	Feels peaceful, happy and calm all the time

## K10 scoring

The K10 is an internationally validated instrument for measuring non-specific psychological distress in a population, and scores of 12 or more on the K10 are strongly correlated with having an anxiety or depressive disorder (Kessler et al 2003).

The K10 was included for the first time in the 2006/07 NZHS.

Each question in the K10 has five possible responses: 'all of the time', 'most of the time', 'some of the time', 'a little of the time' or 'none of the time'. For the NZHS, the response to each question was coded to allow scoring as follows: 'all of the time' was set to 4; 'most of the time' was set to 3; 'some of the time' was set to 2; 'a little of the time' was set to 1; 'none of the time' was set to 0; and all other values were set to missing. The possible range of scores is 0–40, with higher scores indicating higher psychological distress.

For NZHS reporting, psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more (see Table 6).

**Table 6: Scoring for the K10**

Score	Interpretation
0–5	None or low psychological distress
6–11	Moderate psychological distress
12–19	High psychological distress
20–40	Very high psychological distress

## Functional difficulties

There is currently a lack of data in New Zealand about the health outcomes of disabled people and their access to health services.

A set of six questions, known as the Washington Group Short Set (WGSS), on functional difficulties and activity limitations was included as a module clip-on in the 2018/19 NZHS for adults and children aged 5–14 years. These questions were developed by the Washington Group on Disability Statistics (WG), a United Nations city group established to address the need for internationally comparable population-based statistics on disability.

The WGSS identifies respondents who are more likely to experience restrictions in social participation because of difficulties undertaking basic functional activities (Washington Group on Disability Statistics 2016a). These activities are seeing (even with their glasses), hearing (even with their hearing aid), walking or climbing stairs, remembering or concentrating, self-care and communicating.

The WGSS was developed for inclusion in population surveys and will allow comparisons of NZHS results for disabled people with the rest of the population. Several New Zealand population surveys have included the question set, including the New Zealand General Social Survey (NZGSS) and 2018 New Zealand Census of Population and Dwellings. The WGSS identifies disabled people as those who have a lot of difficulty with, or cannot do at all, at least one of the six specified activities.

The WGSS does not cover all types of disability and should not be used to determine overall disability prevalence. The WG state that the WGSS can be used for children aged 5–17 years but acknowledge that disability among children is not adequately covered, and that it will miss many children with learning and psychological impairments. There was not enough survey space in the 2018/19 NZHS for the longer (and preferable) WG Module on Child Functioning (Washington Group on Disability Statistics 2016b) but the WGSS should still allow some comparisons to be made between disabled children and the rest of the child population.

## Sociodemographics

Health status, health risks and health service utilisation are strongly influenced by socioeconomic, cultural and demographic forces. Understanding the

sociodemographic structure of a population is essential for interpreting survey data and using this evidence to inform policy.

Statistics New Zealand has developed standard sociodemographic questions for use in all household social surveys that are part of the official statistics system. The sociodemographic domain in the NZHS closely follows the Statistics New Zealand model, including questions from the New Zealand Census of Population and Dwellings and the NZGSS. In addition to self-reported variables (eg, age, sex, ethnicity, education, employment status, income, housing and household composition), the NZHS records variables derived from the census area unit/ primary sampling unit of the household (eg, area deprivation and rurality). Questions on health insurance are also included in the sociodemographic section of the adult questionnaire.

A question on sexual identity was added in the 2015/16 NZHS. This question is self-completed by the respondent because of its sensitive nature. From 2016/17, the sexual identity question was not asked for respondents whose interview was being conducted with cognitive or language assistance from a family member, caregiver or one of their friends. This was to ensure these confidential responses were not revealed to people with whom the respondent has a personal relationship.

## Anthropometric measurements

The WHO STEPS approach to monitoring chronic diseases and their risk factors covers three levels of data collection:

- Step 1 – questionnaires
- Step 2 – physical measurements (eg, height, weight, blood pressure)
- Step 3 – biomedical measurements (eg, blood and urine samples).

The NZHS questionnaires have always collected data on chronic diseases and their risk factors. Up until 2002/03, physical and biochemical measurements were only included in nutrition surveys, but these objective measurements have gradually been added to the NZHS.

The measurement of adults' body size was added to the NZHS core content in 2002/03 and extended to include children in 2006/07. The measurement of adults' blood pressure was added to the NZHS core content in 2012/13 and may be extended to children in the future.

Biomedical measurements (adults only) were included as a module in the 2014/15 NZHS.

## Body size

A healthy body size is recognised as being important for good health and wellbeing. There is strong evidence that obese children and adults are at greater risk of short- and long-term health consequences (WHO 2000).

Self-reporting height and weight is unreliable compared with measuring these factors (Gorber et al 2007). Overall, people underestimate their weight and overestimate their height (resulting in a lower BMI), and they are more likely to do so if they are overweight or obese.

For the NZHS, height and weight are measured for respondents from the age of two years and over, and waist measurements are taken for respondents from the age of five years and over. Measurements are not taken for pregnant women. Measurements are collected following a standardised protocol and using the same professional anthropometric equipment as for the 2011/12 NZHS – apart from the introduction of laser height measurement in 2012/13.

Data on height and weight are used to calculate body mass index (BMI), which is used to classify people as underweight, a healthy weight, overweight and obese according to international cut-off points. BMI cut-offs points are intended to identify people or populations at increased risk of health conditions, such as type 2 diabetes, associated with increasing BMI rather than being a measure of body fat.

## Blood pressure

High blood pressure (often referred to as hypertension) is a risk factor for ischaemic heart disease, stroke, hypertensive heart disease, kidney failure and dementia.

There are usually no symptoms associated with high blood pressure, so self-reporting will underestimate its prevalence. The best way to monitor population blood pressure is to take actual blood pressure measurements. By combining data on self-reported and measured high blood pressure, we can also estimate levels of hypertension awareness, treatment and control. Measurement of blood pressure in adults was introduced into the annual core content of the NZHS in 2012/13, though was not collected in the 2017/18 NZHS.

Measurements of blood pressure and heart rate are made using standardised protocol and an OMRON HEM-907 device, which automatically records heart rate, systolic and diastolic blood pressure three times, with a 1-minute pause between measurements.

# Permission details after completing the survey

At the end of the interview, the interviewer seeks the respondent's permission for:

- the survey supervisor to contact them again for audit purposes
- NZHS researchers to contact them again within the next two years about the possibility of answering other health-related questions of importance to the Ministry
- combining their survey data with other health information already routinely collected by the Ministry – the respondent would sign a separate consent form to authorise their consent to this data being linked.

Respondents are also asked if they were a Christchurch resident at the time of the 22 February 2011 earthquake, to assist with monitoring the earthquake's impact on population health.

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