Status of Indicators & Monitoring of Nutrition & Food Behaviour in South Australia
DECEMBER 2003

Report Prepared for
Health Promotion SA

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CHAPTER 1: INTRODUCTION
1.1 Introduction

The purpose of this report is to summarise the status of indicators used for monitoring food and nutrition behaviours in Australia, in order to inform possible ways forward for Health Promotion SA in food and nutrition monitoring in South Australia.

The key nutrition priority areas in South Australia include:

- Consumption of vegetables and fruit;
- Healthy weight;
- Nutrition for mothers, infants and young children (including folate, breastfeeding and introduction of solids);
- Older people; and
- Food access, food supply and food security.

This report is limited, on the whole, to these key priority areas.

The report is designed to provide recommendations and guide decisions on the indicators that should be included in a South Australian surveillance system that addresses nutrition and food behaviour. In using indicators, a surveillance approach is adopted and stable criteria are accepted against which progress can be assessed. It is on the basis of surveillance over time that good quality data can be collected for longitudinal analyses, to ensure the best outcomes for the population.

The information presented in this document was collected between January and September 2003. Efforts have been made to include relevant information from all Australian states and territories, the United States of America and New Zealand. The information provides a snapshot in time, however will require revision and refining based on future food and nutrition monitoring activities.
1.2 What are Indicators?

An indicator is a “specific and measurable statistical construct for monitoring progress towards a goal”\(^1\). Specific criteria for the selection/development of indicators include:

- Relevant to key policies;
- Consistent with World Health Organization (WHO) wherever possible to meet international reporting obligations;
- Consistent with previous indicators/data collected so that trends may be documented;
- Feasible/simple to collect the required information on a representative sample and;
- Measurable and valid for detecting the direction and magnitude of changes over time, and differences between population sub-groups\(^1\).

In order to assess the impact of nutrition interventions over time, it is important that the questions used remain the same in order that trends and patterns may be compared over time\(^1\).

1.3 Why Do We Need Indicators?

A core function of good data collection is to provide information on the status of the population, thus enabling progress to be monitored towards goals and targets. Surveillance data that describes nutrition and food behaviours are critical to increased recognition of the public health burden of nutrition, identifying high risk groups, developing strategies to reduce the burden, formulating health care policy, and evaluating progress in healthy behaviours.

In reality, it is not feasible in a surveillance system to collect data on everything that relates to an issue such as nutrition. Like many other public health issues, the topic is complex and there are many related factors and outcomes that could be measured. Indicators are used to reduce the number of possible measurements to a few that are necessary and sufficient for a given purpose. They incorporate knowledge about what is
important and provide a way of dealing with what is often a large amount of information. Indicators for surveillance are used to monitor the health status of a population or to make comparisons with a different population or the same population at a different point in time. Indicators are therefore specific measures for assessing progress towards goals. It is important to define priorities for population surveillance, but flexibility and capacity to detect and address emerging and unexpected issues must also be retained. Relevant and differentiated indicators are imperative for an information system capable of supporting the development of policy and planning objectives.

1.4 Indicators Development

Nutrition and food behaviour indicators are at different stages of development – some are well developed, while others are less tried and tested. In Australia, the best health-related indicators agreed on to date are listed in the National Health Data Dictionary.

The National Health Data Dictionary, under the National Health Information Agreement, is the authoritative source of health data definitions used in Australia where national consistency is required. It was designed to improve the comparability of data across the health field, and to ensure that information collected is appropriate to its purpose. An objective of the National Health Data Dictionary is to establish a core set of uniform definitions relating to the full range of health services and a range of population parameters. It promotes data uniformity, availability, reliability, validity, consistency and completeness. Use of the dictionary helps ensure uniform collection of data elements throughout Australia.

The National Health Data Dictionary contains the following data elements relating to nutrition:

- Birth weight;
- Body mass index;
- Diabetes (and associated factors);
- Eating (dependency in eating);
- Food;
  - Includes:
Introduction

- Diabetes therapy;
- Expenses;
- Meals on wheels;
- Risk factor intervention.
- Food supplies;
- Waist circumference;
- Waist to hip ratio; and
- Weight.

The Dictionary also provides a description of the SNAP initiative (Smoking, Nutrition, Alcohol and Physical Activity), which aims to reduce the health and socio-economic burden of these four factors on the population using a systematic approach to primary care behavioural interventions. The Data Dictionary currently does not contain definitions for fruit and vegetable intake\(^2\).

### 1.5 Overview of Document

This document provides a summary of nutrition and food behaviours indicators.

- Chapter 2 summarises national, state and international policies that are related to the key SA priority areas.
- Chapter 3 provides detail on the data sources used to measure each of the key indicators. Indicators need to be assessed, where possible, by valid and reliable question modules.
- Chapter 4 outlines indicators related to Fruit and Vegetable Consumption.
- Chapter 5 outlines indicators related to Healthy Weight.
- Chapter 6 outlines indicators related to Breastfeeding.
- Chapter 7 outlines indicators related to Healthy Pregnancy.
- Chapter 8 outlines indicators related to Infants and Young Children.
- Chapter 9 outlines indicators related to Older Persons.
- Chapter 10 outlines indicators related to Food Supply, Food Access and Food Security.
CHAPTER 2: SUMMARY OF FOOD AND NUTRITION POLICIES
2.1 Introduction

This section summarises the goals and objectives of major food and nutrition policies. Initially major Australian documents are summarised. This is followed by relevant Australian State undertakings in this area and an overview of international directions. Each section includes recommended, potential or established indicators that have been developed as a part of these policies.

2.2 Major Australian Policy Documents

2.2.1 Eat Well Australia and National Aboriginal and Torres Strait Islander Nutrition Strategies

2.2.1.1 Eat Well Australia: An Agenda for Action for Public Health Nutrition

*Eat Well Australia: An Agenda for Action for Public Health Nutrition 2000-2010* is a landmark document in Australian nutrition policy terms. It identifies operating principles within three main initiatives:

- Strategic management;
- Capacity building; and
- Health gain.

There are a further four initiatives under the heading of “Strategic Management”. Each of these has its own objectives and they are listed in more detail in *Eat Well Australia*.

The four initiatives are:

1. Steering and developing *Eat Well Australia* and NATSINSAP;
2. Developing nutrition policy;
3. Establishing criteria for resource allocation; and

There are a further four initiatives under the heading of “Capacity Building”. Each of these has its own objectives and they are listed in more detail in *Eat Well Australia*.

The four initiatives are:

1. Research and development;
2. Workforce development;
3. Communication; and
4. Monitoring and evaluation.
There are four initiatives under the heading of “Health Gain”. Each of these initiatives addresses the public health nutrition priorities and are listed below with the relevant objectives. They include:

1. Vulnerable groups:
   - Promoting organisational change in services;
   - Influencing broad social policy;
   - Addressing structural barriers to safe and healthy food.

2. Promoting healthy weight:
   - Promoting healthy weight.

3. Vegetables and fruit:
   - Undertaking vegetables and fruit promotions;
   - Addressing underlying structural factors which influence vegetables and fruit consumption;
   - Enhancing research.

4. Maternal and child health:
   - Improving nutrition for pregnant and lactating women;
   - Promoting breastfeeding and improving infant nutrition;
   - Improving nutrition for children³.

The rationale, aims, context and actions for each of the strategies are listed in detail within *Eat Well Australia*³:

### 2.2.1.2 National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan (NATSINSAP)

*NATSINSAP⁴* has been developed as a key component of *Eat Well Australia*³. The action areas and objectives are listed below:

1. Food supply in remote and rural communities:
   - Improve access to a variety of affordable and good quality foods for rural and remote Indigenous peoples.

2. Food security and economic status:
   - Ensure that Aboriginal and Torres Strait Islander people have a consistent supply and variety of quality, affordable, nutritious food by addressing the major factors that contribute to food security.

3. Family focused nutrition promotion: resourcing programs, disseminating and communicating “good practice”:
- Identify and effectively disseminate relevant nutrition information to the health workforce and partners delivering nutrition services/programs to Aboriginal and Torres Strait Islander people to ensure ‘good practice’ is maintained and reviewed.
- Resource and facilitate within a ‘good practice’ and family context nutrition/health promotion with a focus on: mothers and babies, food access and supply, growth assessment of infants and children, healthy lifestyles, dental health and the health of Aboriginal and Torres Strait Islander men.
- Increase awareness across sectors of ‘good practice’ in Aboriginal and Torres Strait Islander nutrition and highlight the opportunities for intersectoral communication and collaboration across a range of initiatives.

4. Nutrition issues in urban areas:
   - Increased knowledge and awareness of nutrition service provision.
   - Increased communication at all levels between planners, service providers and the community to enable appropriate programs to be developed and delivered to make healthy choices ‘easy choices’ for people living in these areas.
   - Improved knowledge of the dietary intake and nutrition status of Indigenous people living in urban areas.

5. The environment and household infrastructure:
   - Identify and communicate to the housing, environmental and other relevant sectors the household infrastructure required to support a safe and nutritious household food supply.
   - Obtain commitment from housing, environmental and other relevant sectors to address health hardware issues so as to complement local nutrition promotion activities and programs.
   - Develop sustainable communication mechanism to ensure that the local Aboriginal and Torres Strait Islander nutrition workforce and contribute to efforts to improve household infrastructure and the physician environment of the community.

6. Development of an Aboriginal and Torres Strait Islander nutrition workforce:
7. National food and nutrition systems.

- Increase the numbers and develop the capacity of the nutrition workforce to support food and nutrition initiatives for Aboriginal and Torres Strait Islander communities.

- As part of the national food and nutrition monitoring system develop and implement a strategy for meeting information needs for Aboriginal and Torres Strait Islander peoples which includes food supply and access, food intake, nutritional status and related health outcomes.

- Develop guidelines on program evaluation to assist the nutrition workforce and Aboriginal and Torres Strait Islander community.

- Advocate for responsible research in consultation with communities and ensure access to the data collected, timely reporting and feedback to the community, nutrition workforce and key stakeholders.

The rationale, issues and actions are listed in detail in *NATSINSAP*.

2.2.2 National Health and Medical Research Council Dietary Guidelines

The National Health and Medical Research Council (NH&MRC) have endorsed dietary guidelines for Australian adults, children and adolescents and older people.

2.2.2.1 Dietary Guidelines for Australian Adults

The *Dietary Guidelines for Australian Adults* were updated in 2003. Two guidelines relate to food quality and quantity, the others relate to the areas of: avoiding weight gain, food safety and breastfeeding. The guidelines include:

- Enjoy a wide variety of nutritious foods;
  - Eat plenty of vegetables, legumes and fruits;
  - Eat plenty of cereals (including breads, rice, pasta and noodles) preferably wholegrain;
  - Include lean meat, fish, poultry and/or alternatives;
• Include milks yogurts, cheeses and/or alternatives. Reduced-fat varieties should be chosen where possible;
• Drink plenty of water.

• And take care to
  • Limit saturated fat and moderate total fat intake;
  • Choose foods low in salt;
  • Limit your alcohol intake if you choose to drink;
  • Consume only moderate amounts of sugars and foods containing added sugars.

• Prevent weight gain: be physically active and eat according to your energy needs;
• Care for your food: prepare and store it safely;
• Encourage and support breastfeeding.

2.2.2 Dietary Guidelines for Children and Adolescents
The Dietary Guidelines for Children and Adolescents in Australia incorporating the Infant Feeding Guidelines for Health Workers\(^6\) were also updated in 2003. Three guidelines relate to food quality, variety and quantity. One focuses on promoting normal growth and development including the need to be physically active. Another guideline stresses the need to be vigilant about food safety and there is a guideline that states the need to encourage and support breast feeding. The guidelines are as follows:

• Encourage and support breastfeeding;
• Children and adolescents need sufficient nutritious foods to grow and develop normally;
  • Growth should be checked regularly for young children;
  • Physical activity is important for all children and adolescents.
• Enjoy a wide variety of nutritious foods;
• Children and adolescents should be encouraged to;
  • Eat plenty of vegetables, legumes and fruits;
  • Eat plenty of cereals (including breads, rice, pasta and noodles) preferably wholegrain;
  • Include lean meat, fish, poultry and/or alternatives;
  • Include milks yogurts, cheeses and/or alternatives;
Reduced-fat milks are not suitable for young children (under 2 years) but reduced-fat varieties should be encouraged for older children and adolescents.

- Choose water as a drink;
  - Alcohol is not recommended.

And care should be taken to:

- Limit saturated fat and moderate total fat intake;
- Choose foods low in salt;
- Consume only moderate amounts of sugars and foods containing added sugars.

- Care for your child’s food: prepare and store it safely.

### 2.2.2.3 Dietary Guidelines for Older Australians

The *Dietary Guidelines for Older Australians*\(^3\) were released in 1999 and are as follows:

- Enjoy a wide variety of nutritious foods;
- Keep active to maintain muscle strength and a healthy body weight;
- Eat at least three meals every day;
- Care for your food: prepare and store it correctly;
- Eat plenty of vegetables (including legumes) and fruit;
- Eat plenty of cereals, breads and pastas;
- Eat a diet low in saturated fat;
- Drink adequate amounts of water and/or other fluids;
- If you drink alcohol, limit your intake;
- Choose foods low in salt and use salt sparingly;
- Include foods high in calcium; and
- Use added sugars in moderation.

### 2.2.3 National Action Plan to Increase Consumption of Vegetables and Fruit

The vision of the *National Action Plan to Increase Consumption of Vegetables and Fruit*\(^4\) is to increase the proportion of the population who consume vegetables and fruit every day, and to increase the proportion who consume vegetables and fruit at or above
the recommended level. In order to achieve this vision, the following goal and objectives have been established:

**Goal**
Increase vegetable and fruit consumption of the Australian population by at least one serve every day over five years.

**Objectives**
- Increase and sustain access to high quality, safe, affordable vegetables and fruits;
- Increase the proportion of the population aware of the need to increase their consumption of vegetables and fruits;
- Increase the proportion of the population who perceive the benefits of vegetables and fruits in terms of taste, convenience, low relative cost, safety and health;
- Increase the proportion of the population with the knowledge of the recommended minimum intakes of vegetables and fruits; and
- Increase the proportion of the population with knowledge, skills and confidence to select and prepare convenient, low cost, tasty vegetable and fruit dishes.

**2.2.4 The Australian Guide to Healthy Eating**
The *Australian Guide to Healthy Eating* provides information about the amounts and kinds of food that is required each day for good health. The information provided is based on the *Dietary Guidelines* and the *National Action Plan to Increase the Consumption of Vegetables and Fruit*.

**2.3 Individual Australian States’ Policies**

Each of the Australian states are at varying stages of developing food and nutrition policies and indicators relating to the five objectives listed within the *National Action Plan to Increase Consumption of Vegetables and Fruit*. The following sections include summaries of each state’s policies, suggestions and recommendations.

**2.3.1 South Australia**
South Australia is currently developing *Eat Well South Australia*. The document is being finalised. It comprises six key action areas and 13 associated objectives. These are summarised below.
Action area 1: Improving nutrition for mothers, infants and young children

Promoting healthy pregnancy

Objectives

- Increase the proportion of babies within the healthy weight range by encouraging and supporting healthy eating by pregnant women and women of child bearing age.
- Increase the proportion of pregnant women who consume a diet consistent with recommendations.

Promoting healthy breastfeeding

Objectives

- Increase the proportion of infants who are predominantly or exclusively breastfed for six months and continue to be breastfed for 12 months.

Promoting healthy infants and young children

Objectives

- Increase the proportion of babies first fed complementary foods at about six months of age.
- Increase the proportion of young children consuming recommended amounts of vegetables and fruit, bread and cereals and milk products every day.
- Improve parents’ knowledge, skills and confidence in supporting the development of their children’s healthy eating habits.

Action area 2: Increasing consumption of vegetables and fruit

Objectives

- Increase the proportion of South Australians who consume vegetables and fruit every day.
- Increase the daily vegetable and fruit consumption of the South Australian population, and of those consuming low amounts.

Action area 3: Promoting healthy weight in children and young people and preventing weight gain in adults

Objectives

- Reduce the current trend of increasing prevalence of overweight and obesity in South Australia through increasing the prevalence of:
o Eating and physical activity patterns consistent with preventing overweight and obesity.

o Environments that support healthy eating and physical activity.

**Action area 4: Improving nutrition for older people (age 60 years and over)**

*Objectives*

- Increase the proportion of older people, independent, meal assisted and in institutions who consume a diet consistent with NH&MRC *Dietary Guidelines for Older Australians*[^7] and the *Australian Guide to Healthy Eating*[^9] or to meet their special needs.

**Action area 5: Improving food supply, food access, food security**

**Improving food supply**

*Objectives*

- Encourage and support institutional and relevant other food services to offer a variety of food choices consistent with dietary guidelines and the *Australian Guide to Healthy Eating*[^9].

**Improve food access and food security for key vulnerable groups**

*Objectives*

- Advocate and support improved food security and food access for vulnerable groups in South Australia.

**Action area 6: Building capacity to promote health eating and good nutrition for all South Australians**

*Objectives*

- Build the capacity of the health system to achieve effective sustainable effort in public health nutrition.

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2.3.2 New South Wales

2.3.2.1 Potential Indicators

Recommendations for food and nutrition monitoring in NSW are outlined in the document *Recommendations for Food and Nutrition Monitoring in New South Wales*[^11]. This document recommends potential indicators for monitoring, including:
• Weight status for adults (including weight, height, BMI, waist-hip ratio).
• Weight-related attitudes and behaviours; (including self reported changes to diet and reasons, desire to change diet; and barriers to change).
• Growth and weight status of children.
• Nutrient intake (including fat, iron, calcium and folate intake).
• Intake of core food groups (including breads and cereals and fruit and vegetables).
• Breastfeeding (prevalence and duration).
• Infant feeding (including age of introduction of formula, cow’s milk and solids).
• Food security (including missing meals for reasons of money; and more detailed investigations of food security).
• Food service in hospitals, childcare centres, schools, nursing homes.

2.3.2.2 Eat Well NSW Goals and Objectives

In addition to the above recommendations, the Eat Well NSW: Strategic Directions for Public Health Nutrition 2002-2007 outlines goals and objectives in the areas of healthy weight, intake of fruit and vegetables, breastfeeding and food security. The goals and objectives are summarised below.

Promoting Healthy Weight

Goal:
To promote healthy weight in children and prevention of weight gain in adults.

Objectives:
• To reduce environmental exposure to risk factors causing weight gain during vulnerable periods of life;
• To reduce the prevalence of eating patterns that lead to passive over-consumption of energy from food;
• To decrease time spent engaged in sedentary behaviours (watching TV or videos, using computer or video games, inactive transport);
• To increase the prevalence of physical activity patterns providing sufficient daily energy expenditure to prevent weight gain; and
• To minimise any unintended effects of weight management strategies that encourage disordered eating.
Promoting Increased Intake of Vegetables and Fruit

*Goal:*
To increase the daily vegetable and fruit consumption of the NSW population.

*Objectives:*
- To increase the proportion of the NSW population that consumes vegetables and fruit every day; and
- To increase the daily amount of vegetables and fruit consumed by the NSW population, particularly low consumers.

Promoting Breastfeeding

*Goal:*
To increase the initiation and duration of breastfeeding.

*Objectives:*
- To increase proportion of mothers who breastfeed infants exclusively to six months;
- To increase the proportion of mothers who breastfeed infants to 12 months of age;
- To decrease the proportion of mothers who introduce solids to infants before six months;
- To increase the support for breastfeeding at all levels of the NSW health system; and
- To increase the support for breastfeeding in the wider community in NSW.

Achieving Improved Food Security

*Goal:*
To improve food security in NSW.

*Objectives:*
- To improve access to, and supply of, healthy foods with an emphasis on groups disadvantages by their circumstances, particularly location, disability and/or socioeconomic status; and
- To improve food access and nutrition of indigenous groups in urban, rural and remote NSW.
2.3.3 Victoria

Victoria is currently developing nutrition indicators with a strong emphasis on barriers, attitudes and beliefs, rather than simply monitoring what and how much people are eating (Graham, V. 2003, pers. comm. 21/02/03). As such, no summary information is available at this stage. However Victoria has developed the Eat Well Victoria Partnership (EWVP). This group includes key stakeholder organisations and individuals within the area of public health nutrition, with the aim of providing a co-ordinated approach to public health nutrition issues. The Department of Human Services, Victoria is also currently undertaking nutrition projects in the areas of:

- Healthy weight;
- Vegetables and fruit;
- Maternal and child nutrition;
- Vulnerable groups;
- Victorian Aboriginal people; and
- Capacity building.

2.3.4 Queensland

2.3.4.1 Eat Well Queensland

Eat Well Queensland 2002-2012 aims to improve the health and well being of all Queenslanders through better food and nutrition. The priority action areas and key issues and possible indicators are:

- Address food supply issues;
- Promote healthy eating: increase demand for healthy food;
- Increase consumption of vegetables and fruit;
- Enhance the health of mothers, infants and children;
- Achieve and maintain a healthy weight; and
- Develop infrastructure and capacity.

2.3.4.2 Statewide vegetable and fruit promotion action plan

In Queensland, the Queensland Statewide Vegetable and Fruit Promotion Action Plan is currently being developed. It outlines the goal and aims for its vegetable and fruit action plan, which are summarised below. Potential indicators and objectives of each priority area are then summarised.
Summary of food and nutrition policies

**Goal:**
To increase vegetable and fruit consumption of the Queensland population by at least one serve per day over five years.

**Aims:**
- To increase the proportion of the Queensland population who consume vegetables and fruit every day and;
- To increase the proportion of the Queensland population who consume vegetables and fruit at or above the recommended level.

**The statewide social marketing of vegetables and fruit**

**Objectives:**
- Increase in the awareness of the benefits of vegetables and fruit;
- Increase vegetable and fruit purchasing and preparation skills; and
- Increase vegetable and fruit consumption.

**Potential Indicators:**
- Consumption patterns; and
- Number of consumers aware of promotion.

**The supply of vegetables and fruit**

**Objective:**
- To ensure equitable access to vegetables and fruit for all Queenslanders.

**Potential Indicators:**
- Increased range of affordable vegetable and fruit in disadvantaged areas; and
- Number of aged/disabled people who have improved access to vegetables and fruit.

**Communities**

**Objective:**
To increase the opportunities for increased vegetables and fruit consumption.

**Potential Indicators:**
- Number of vegetable and fruit sales outlets per capita;
- Awareness of the health benefits of vegetables and fruit among population/retailers;
- Attitude of individuals to consuming more vegetables and fruit; and
- Proportion of vegetables and fruit sales of total sales.

**Schools and childcare**

*Objectives:*
- Increase the proportion of children who consume vegetables and fruit every day; and
- Increase the proportion of the children who consume vegetables and fruit at or above the recommended level.

*Potential Indicators:*
- Proportion of children in schools consuming vegetables and fruit;
- Proportion of children in childcare centres consuming vegetables and fruit;
- Fruit and vegetables sold in tuckshops; and
- Child preferences for vegetables and fruit.

**Individual Sectors and NGOs**

*Objectives:*
- To provide opportunities for increased vegetable and fruit consumption in workplace settings within employment sectors.

*Potential Indicators:*
- Proportion and types of vegetables and fruit consumed at the workplace;
- Access to vegetables and fruit in the workplace;
- Vegetables and fruit sold in the work site canteen;
- Food preferences of workers; and
- Promotion of vegetables and fruit at work sites.

**2.3.5 Tasmania**

Tasmania is in the process of redeveloping the 1994 *Tasmanian Food and Nutrition Policy*\(^{16}\) which includes indicators relating to weight, vegetable and fruit consumption and breastfeeding (Seal, J., pers. comm. 14/02/03). Indicators include:
- Incidence of overweight;
- Proportion of Tasmanians who achieve the NH&MRC recommended guidelines for vegetable consumption;
- Proportion of Tasmanians who achieve the NH&MRC recommended guidelines for fruit consumption;
- Mean percent contribution of saturated fat to energy intake;
• Rates of breastfeeding on discharge from hospital;
• Rates of breastfeeding (full or partial) at 6 months of age;
• Rate per 100,000 population of dieticians in the workforce;
• Proportion of adult Tasmanians (over 25 years of age) with blood cholesterol levels greater than or equal to 5.5mmol/l; and
• Proportion of adult Tasmanians (over 25 years of age) with high blood pressure according to the WHO 1999 definition\textsuperscript{17}.

2.3.6 Northern Territory

The Northern Territory Government has developed a Food and Nutrition Policy and Action Plan\textsuperscript{18} which outlines several indicators which relate to the five South Australian priority areas. These are summarised below.

Pregnancy and lactation, and support for breastfeeding
• Proportion of low birth weight in Aboriginal population;
• Mean birth weight of Aboriginal infants;
• Breastfeeding rates at discharge from hospital; and
• Percentage of women fully and partially breastfeeding at 3 and 6 months.

Children 0-5 years
• Prevalence of wasting, stunting and underweight in children 0-5 years; and
• Prevalence of iron deficiency in children 0-5 years.

School age children
• Proportion of children with weights within normal range.

2.3.7 Australian Capital Territory

Currently ACT Health is developing \textit{Eat Well ACT}. This document is expected to be completed by the end of 2003, and will identify key areas for nutrition, including a snap shot of current activities obtained from consultation across non-government organisations (NGOs) and other relevant sectors. The aim of the process is to develop a strategic direction for the food and nutrition programs, which are run by ACT Community Health and also identify potential partners (Jones, N., pers. comm. 19/08/03).
At this point the gaps are likely to include:

- A routine and comprehensive monitoring and surveillance of nutrition related indicators;
- A strategic direction;
- A coordinated approach to public health nutrition;
- Well established partnerships between government sectors and NGOs for nutrition related activities; and
- Capacity of the nutrition workforce.

**Key nutrition areas/goals:**

- Prevention of overweight and obesity in children;
- Prevention of further weight gain in adults;
- Increasing the consumption of vegetables, legumes and fruit;
- Promoting optimal nutrition for infants, children and women; and
- Improving nutrition for vulnerable groups.

**Potential indicators:**

- Weight and height of adults (BMI);
- Weight and height of children (BMI);
- Intake of core food groups, in particular vegetables, legumes and fruit for adults;
- Intake of core food groups, in particular vegetables, legumes and fruit for children;
- Attitudes and barriers to vegetable, legume and fruit consumption;
- Breastfeeding initiation rates (rates on discharge from hospital);
- Breastfeeding rates at 3 months and 6 months of age; and
- Food security - Proportion of people who ran out of food and could not afford to by more at some point in the previous 12 months.

### 2.4 United States Policy Documents

*Healthy People 2010* outlines health goals and objectives relevant to the United States. It includes a set of Leading Health Indicators, including overweight and obesity, and a list of goals and objectives, which include nutrition topics such as birth-weight, folic
Summary of food and nutrition policies

acid intake, breastfeeding, weight status and growth, fruit and vegetable consumption, iron deficiency and food security.

2.4.1 Leading Health Indicators

Leading Health Indicators from Healthy People 2010\(^\text{19}\) illustrate public health concerns in the United States and were selected based on their potential to motivate action, the capacity to monitor progress and their relevance as broad public health issues. Overweight and obesity is the only food and nutrition-related indicator.

The Leading Health Indicators are:
- Physical activity;
- Overweight and obesity;
- Tobacco use;
- Substance abuse;
- Responsible sexual behaviour;
- Mental health;
- Injury and violence;
- Environmental quality;
- Immunisation; and
- Access to health care.

2.4.2 Healthy People 2010: Goals and Objectives

Healthy People 2010\(^\text{20}\) includes 467 objectives relating to health outcomes. Those relating to food and nutrition are listed below.

2.4.2.1 Maternal, Infant and Child Health

Goal:
Improve the health and well-being of women, infants, children and families.

Objectives:

Risk Factors
16.10 Reduce low birth weight (LBW) and very low birth weight (VLBW); and
16.12 Increase the proportion of mothers who achieve a recommended weight gain during their pregnancies.
**Developmental Disabilities and Neural Tube defects**

16.15 Reduce the occurrence of spina bifida and other neural tube defects (NTDs); and
16.16 Increase the proportion of pregnancies begun with an optimum folic acid level.

**Breastfeeding, Newborn Screening and Service Systems**

16.19 Increase the proportion of mothers who breastfeed their babies.

---

### 2.4.2.2 Nutrition and Overweight

**Goal:**

Promote health and reduce chronic disease associated with diet and weight.

**Objectives:**

**Weight Status and Growth**

19.1 Increase the proportion of adults who are at a healthy weight;
19.2 Reduce the proportion of adults who are obese;
19.3 Reduce the proportion of children and adolescents who are overweight or obese; and
19.4 Reduce growth retardation among low-income children under age 5 years.

**Food and Nutrient Consumption**

19.5 Increase the proportion of persons age 2 years and older who consume at least two daily servings of fruit;
19.6 Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green or orange vegetables; and
19.7 Increase the proportion of persons aged 2 years and older who consume at least six daily servings of grain products, with at least three being whole grains.

**Iron deficiency and Anemia**

19.12 Reduce iron deficiency among young children and females of childbearing age;
19.13 Reduce anemia among low-income pregnant females in their third trimester; and
19.14 Reduce iron deficiency among pregnant females.
**Food Security**

19.18 Increase food security among U.S. households and in so doing reduce hunger.

### 2.5 New Zealand Policy Documents

New Zealand has developed a series of population-based food and nutrition guidelines. The first guidelines were the *Food and Nutrition Guidelines for Healthy Adults*²¹ and since then population specific guidelines have been developed. These include:

- Healthy infants and toddlers;
- Healthy children;
- Healthy adolescents;
- Healthy older people;
- Healthy pregnant women; and
- Healthy breastfeeding women.

The *Food and Nutrition Guidelines for Healthy Adults*²¹ were updated in 2001 and are listed below.

1. Maintain a healthy body weight by eating well and by daily physical activity (at least 30 minutes of moderate intensity activity on most if not all days of the week and if possible add some vigorous exercise for extra health and fitness).

2. Eat well by including a variety of nutritious foods from each of the four major food groups each day.
   - Eat plenty of vegetables and fruits;
   - Eat plenty of breads and cereals, preferably wholegrain;
   - Have milk and milk products in your diet, preferably reduce of low-fat options;
   - Include lean meat, poultry, seafood, eggs or alternatives.

3. Prepare foods or choose pre-prepare foods, drinks and snacks:
   - With minimal added fat, especially saturated fat;
   - That are low in salt; if using salt, choose iodised salt;
   - With little added sugar; limit your intake of high-sugar foods.
4. Drink plenty of liquids each day especially water.
5. If choosing to drink alcohol, limit your intake.
6. Purchase, prepare, cook and store food to ensure food safety.

These guidelines have been followed by the development of *Healthy Eating – Healthy Action: A strategic framework*\(^{22}\). This document aims to define key priorities and establish a framework for addressing nutrition, obesity and physical activity over the next five years. The scope of the document is broad with the aims of:

- Looking at action in the health arena across public, primary, secondary and tertiary health care, and across public and personal health services.
- Identify appropriate areas for action at national, regional and local levels.
- Identify a range of key partnerships, including government and non-government organisations, research and academic institutions, and industry and consumer groups.

The key population health messages from the strategy\(^{22}\) are based on, but do not replace, the Food and Nutrition Guidelines\(^{21}\) and are listed below.

- Eat a variety of nutritious foods;
- Eat less fatty, salty and sugary foods;
- Eat more vegetables and fruits;
- Fully breastfeed infants for at least six months;
- Be active every day for at least 30 minutes in as many ways as possible;
- Add some vigorous exercise for extra benefit and fitness;
- Aim to maintain a healthy weight throughout life;
- Promote and foster the development of environments that support healthy lifestyles.
CHAPTER 3: SUMMARY OF DATA COLLECTION
### 3.1 Introduction

This chapter summarises the surveys, which have included questions on food and nutrition that have been carried out in Australia (nationally and in individual states), New Zealand and the United States. It includes the name of the survey, the date it was carried out, the age of respondents, the method used and the sample size.

### 3.2 National Surveys

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995 National Health Survey (NHS)</td>
<td>1995</td>
<td>Face-to-face</td>
<td>57,633</td>
<td>All ages</td>
</tr>
<tr>
<td>1995 National Nutrition Survey (NNS)</td>
<td>1995</td>
<td>Face-to-face</td>
<td>13,858 (sub sample of NHS)</td>
<td>2 years and older</td>
</tr>
<tr>
<td>2001 NHS</td>
<td>2001</td>
<td>Face-to-face</td>
<td>Approximately 26,900</td>
<td>All ages</td>
</tr>
<tr>
<td>Australian Diabetes, Obesity and Lifestyle Study (AusDiab)</td>
<td>1999-2000</td>
<td>Face-to-face</td>
<td>Interview: 20,257 Physical Examination: 11,247</td>
<td>25 years and older</td>
</tr>
<tr>
<td>Australian Longitudinal Study on Women’s Health</td>
<td>Ongoing</td>
<td>Postal survey</td>
<td>Over 40,000 responses to initial survey</td>
<td>Three cohorts. (18-23; 45-50; 70-75)</td>
</tr>
</tbody>
</table>

### 3.3 South Australian Surveys

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Australian Monitoring and Surveillance System (SAMSS)</td>
<td>Monthly</td>
<td>CATI Interview</td>
<td>Approximately 600 per month</td>
<td>16+ years</td>
</tr>
<tr>
<td>Health Monitor</td>
<td>3 times a year</td>
<td>CATI Interview</td>
<td>2,000</td>
<td>18+ years</td>
</tr>
<tr>
<td>Infant Feeding Survey</td>
<td>1997</td>
<td>CATI interview</td>
<td>3,422</td>
<td>18+ years</td>
</tr>
<tr>
<td>South Australian Health Goals and Targets Health Priority Areas Survey</td>
<td>1997 and 1998</td>
<td>CATI Interview</td>
<td>Approximately 6,000</td>
<td>18+ years</td>
</tr>
<tr>
<td>South Australian Health Goals and Targets Health Monitoring Indicators Survey</td>
<td>1998</td>
<td>CATI Interview</td>
<td>3,006</td>
<td>18+ years</td>
</tr>
<tr>
<td>South Australian Health and Wellbeing Survey</td>
<td>2000</td>
<td>CATI Interview</td>
<td>2,545</td>
<td>18+ years</td>
</tr>
<tr>
<td>Folate SERCIS Survey</td>
<td>2001</td>
<td>CATI Interview</td>
<td>Approximately 3,000</td>
<td>18+ years</td>
</tr>
</tbody>
</table>
3.4 Other Australian States’ Surveys

3.4.1 New South Wales

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Health Survey(^{35})</td>
<td>1997 &amp; 1998</td>
<td>CATI interview</td>
<td>17,000</td>
<td>16 years and older</td>
</tr>
<tr>
<td>Older People’s Health Survey(^{36})</td>
<td>1999</td>
<td>CATI Interview</td>
<td>9,418</td>
<td>65 years and older</td>
</tr>
<tr>
<td>NSW Child Health Survey(^ {37})</td>
<td>2001</td>
<td>CATI interview</td>
<td>9,425</td>
<td>0-12 years</td>
</tr>
</tbody>
</table>

New South Wales will be conducting a Schools Fitness and Physical Activity Survey (SPANS 2004). Survey may include nutrition related measures, dieting, weight loss beliefs, attitudes and behaviours and direct measures of adiposity and blood pressure.

3.4.2 Victoria

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victorian Population Health Survey(^{38})</td>
<td>Annual</td>
<td>CATI Interview</td>
<td>7,500</td>
<td>18 years and older</td>
</tr>
</tbody>
</table>

3.4.3 Queensland

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omnibus Survey(^{39})</td>
<td>2001</td>
<td>CATI interview</td>
<td>-</td>
<td>18 years and older</td>
</tr>
<tr>
<td>Central West Nutrition Survey(^{40})</td>
<td>1999</td>
<td>Postal and telephone survey (methodologies compared)</td>
<td>560</td>
<td>18 years and older</td>
</tr>
<tr>
<td>AusDiab Study (Queensland component)(^{41})</td>
<td>1999-2000</td>
<td>Face-to-face</td>
<td>1,634</td>
<td>25 years and older</td>
</tr>
<tr>
<td>Infant Nutrition Survey(^{42})</td>
<td>2003</td>
<td>CATI interview</td>
<td>1200</td>
<td>Biological mothers of infants and children aged 0 to 5 years</td>
</tr>
<tr>
<td>Child Health Survey(^{43})</td>
<td>2003</td>
<td>CATI interview</td>
<td>1595</td>
<td>Parents or care givers of infants and children aged 0 to 13 years</td>
</tr>
</tbody>
</table>
### 3.4.4 Tasmania

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH&amp;MRC Dietary Key Indicators Study&lt;sup&gt;44&lt;/sup&gt;</td>
<td>1996</td>
<td>Face-to-face</td>
<td>794</td>
<td>20-64 years</td>
</tr>
<tr>
<td>Healthy Communities Survey 1998&lt;sup&gt;45&lt;/sup&gt;</td>
<td>1998</td>
<td>Postal survey</td>
<td>15,112</td>
<td>18 years and older</td>
</tr>
</tbody>
</table>

<sup>* This survey was designed for evaluating the performance of key indicator questions at a national level. While it may provide some useful data on the diets of Tasmanians, it was not designed for that purpose.</sup>

<sup>** HCS included on question on food security and one on body image – no other questions on nutrition were included as this information was available from the 1995 NNS.</sup>

### 3.4.5 Western Australia

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Wellbeing Survey&lt;sup&gt;46&lt;/sup&gt;</td>
<td>2000</td>
<td>CATI interview</td>
<td>2,576</td>
<td>18 years and older</td>
</tr>
<tr>
<td>Nutrition Monitoring Survey&lt;sup&gt;47&lt;/sup&gt;</td>
<td>1998 &amp; 2001</td>
<td>CATI interview</td>
<td>-</td>
<td>18 years and older</td>
</tr>
<tr>
<td>Benchmark Vegetable and Fruit Consumption Questionnaire&lt;sup&gt;48&lt;/sup&gt;</td>
<td>2002</td>
<td>Postal survey</td>
<td>-</td>
<td>18 years and older</td>
</tr>
</tbody>
</table>

### 3.4.6 Northern Territory

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Wellbeing Survey&lt;sup&gt;49&lt;/sup&gt;</td>
<td>2000</td>
<td>CATI interview</td>
<td>2,498</td>
<td>18 years and older</td>
</tr>
<tr>
<td>Market Basket Survey&lt;sup&gt;50&lt;/sup&gt;</td>
<td>2002</td>
<td>Face to face</td>
<td>70 rural and remote stores</td>
<td>-</td>
</tr>
</tbody>
</table>
### 3.5 International Surveys

#### 3.5.1 United States

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Health and Nutrition Examination Survey</td>
<td>Annual</td>
<td>Face-to-face</td>
<td>Approximately 5,000 – 7,000</td>
<td>All ages</td>
</tr>
<tr>
<td>Behavioral Risk Factor Surveillance System</td>
<td>Monthly</td>
<td>Telephone survey</td>
<td>Varies between states eg. 871 in Guam to 8,628 in Massachusetts</td>
<td>18 years and older</td>
</tr>
</tbody>
</table>

#### 3.5.2 New Zealand

<table>
<thead>
<tr>
<th>Survey</th>
<th>Date</th>
<th>Method</th>
<th>Sample size</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Nutrition Survey</td>
<td>1996-1997</td>
<td>Face-to-face and postal survey</td>
<td>4636</td>
<td>15 years and older</td>
</tr>
</tbody>
</table>
CHAPTER 4: FRUIT AND VEGETABLE CONSUMPTION
4.1 Relevance of Fruit and Vegetable Consumption

Evidence suggests that a diet high in vegetables and fruit is beneficial to health, particularly in preventing diseases such as cardiovascular disease, Type II diabetes and some forms of cancer. Overall, 11% of all cancers have been attributed to inadequate consumption of fruit and vegetables\(^5\).

The 2001 National Health Survey found that 72.7% of Australians are eating three serves or less of vegetables per day\(^25\), despite the recommendation for adults of five serves or more per day. Furthermore, 44.8% Australians are only eating one serve or less of fruit per day compared with the recommended two serves a day\(^25\). This highlights the need for continued monitoring of vegetable and fruit consumption, to determine whether current health promotion strategies are effective. In addition, it is important to monitor barriers and attitudes to vegetable and fruit consumption, in order to learn why many Australians are not consuming vegetables and fruit at the recommended levels, and what can be done to address the situation. Fruit and vegetable indicators are also described in Chapter 8 with regard to infants and children and in Chapter 9 with regard to older people.

4.2 International Indicators

4.2.1 United States

<table>
<thead>
<tr>
<th>Vegetable consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit consumption</td>
</tr>
</tbody>
</table>

The Behavioral Risk Factor Surveillance System (BRFSS)\(^5\) asks several questions relating to the frequency of fruit and vegetable consumption (Table 1, Section 1 and 2; Table 2, Section 4 and 5).

4.2.2 New Zealand

| Attitudes and intention to change dietary intake |
Barriers to dietary change

In addition to a food frequency questionnaire and a 24 hour dietary record, the New Zealand National Nutrition Survey\textsuperscript{54} asked several questions relating to attitudes and intention to change dietary intake and barriers to dietary change (Table 1, Section 10 and 11 and Table 2, Section 8 and 9).

4.3 Australian Indicators

Marks et al\textsuperscript{1} outline a number of indicators which related to vegetable and fruit consumption. These are listed below:

- Proportion usually consuming at least four serves of vegetables per day
- Proportion usually consuming less than two serves per day
- Proportion usually consuming at least two serves of fruit per day
- Proportion who don’t eat fruit

Questions addressing these indicators were asked in the 1995 National Nutrition Survey\textsuperscript{24}, the 2001 National Health Survey\textsuperscript{25} and the 1999 – 2000 AusDiab Study\textsuperscript{26}. Frequency of vegetable consumption is in Table 1 Section 2 and frequency of fruit consumption is in Table 2 Section 2. Questions regarding the number of serves required of vegetables and fruit are in Table 1, Section 2 and Table 2, Section 2.

Knowledge of fruit and vegetable consumption requirements

The 1999 - 2000 AusDiab study\textsuperscript{26} asked two questions about the fruit and vegetable requirements of a well balanced diet. See Table 1, Section 8 and Table 2, Section 6 for further details.

Attitudes to dietary change

The 1995 National Nutrition Survey\textsuperscript{24} asked questions regarding the desire to change dietary intake of fruits, vegetables, breads, cereals and foods high in fat, and barriers preventing this change (Table 1, Section 11 and Table 2, Section 9).
4.4 Other Australian States' Indicators

4.4.1 New South Wales

Consumption of vegetables

Consumption of fruit

The 1997/1998 NSW Health Surveys\textsuperscript{35} asked two questions relating to the average daily consumption of vegetables and fruit (Table 1, Section 2 and Table 2, Section 2).

4.4.2 Victoria

Consumption of vegetables

Consumption of fruit

The 2001 Victorian Population Health Survey\textsuperscript{36} asked two questions relating to the average daily consumption of vegetables and fruit. See Table 1, Section 2 and Table 2, Section 2 for details.

4.4.3 Queensland

Consumption of vegetables

Consumption of fruit

The 2001 Omnibus Survey\textsuperscript{39} asked questions relating to average daily vegetable and fruit consumption. Several questions related to the above indicators were also asked in the additional dietary questions added in the Queensland phase of the 1999 - 2000 AusDiab study\textsuperscript{41} The questions are presented in Table 1, Section 2 and Table 2, Section 2. The Central West Nutrition Survey\textsuperscript{40} asked several questions relating to food frequency, including potatoes, salad, cooked vegetables and fruit (Table 1, Section 1 and Table 2 Section 2).
Questions relating to average daily vegetable and fruit consumption were asked of parents and caregivers of children aged between 2 and 13 years in the 2003 Infant Nutrition Survey and the 2003 Child Health Survey (Table 1 Section 2 and Table 2 Section 2).

<table>
<thead>
<tr>
<th>Percentage who rarely or never eat vegetables</th>
<th>Percentage who usually consume a specified number of serves of vegetables each day</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Percentage who rarely or never eat fruit</th>
<th>Percentage who usually consume a specified number of serves of fruit each day</th>
</tr>
</thead>
</table>

### Biomarkers of vegetable and fruit intake

Additional blood was collected in the Queensland phase of the 1999 - 2000 AusDiab study and analysed for five serum carotenoids and red cell folate.

### Knowledge of recommended vegetable and fruit consumption

The Central West Nutrition Survey asked several questions relating to this indicator, including recommended daily intake of vegetables and fruit and the importance of vegetable and fruit consumption (Table 1, Section 8 and Table 2, Section 6).

#### 4.4.4 Tasmania

The following indicators relate to vegetable and fruit consumption and were listed in Marks et al.

<table>
<thead>
<tr>
<th>Percentage who rarely or never eat cooked vegetable</th>
<th>Percentage who usually consume cooked vegetable once a day or more</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Percentage who rarely or never eat salad</th>
<th>Percentage who usually consume salad once a day or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage who rarely or never eat fried potato</td>
<td>Percentage who usually consume fried potato more than 5 times a week</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Percentage who rarely or never eat potato</td>
<td>Percentage who usually consume potato once a day or more</td>
</tr>
<tr>
<td>Percentage who rarely or never consume fruit</td>
<td>Percentage who usually consume fruit once a day or more</td>
</tr>
<tr>
<td>Percentage who rarely or never consume fruit juice</td>
<td>Percentage who usually consume fruit juice once a day or more</td>
</tr>
</tbody>
</table>

Several questions relating to the above indicators were asked in the 1996 NH&MRC Dietary Key Indicators as described by Riley et al\(^4\) See Table 1, Sections 4, 5, 6 and 7 and Table 2, Sections 4 and 5.

### 4.4.5 Western Australia

<table>
<thead>
<tr>
<th>Proportion usually consuming the recommended serves of vegetables per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion usually consuming the recommended serves of fruit per day</td>
</tr>
</tbody>
</table>

Questions relating to the average daily consumption of vegetables and fruit were asked in Health and Wellbeing Survey 2000\(^4\) (Table 1, Section 2 and Table 2, Section 2).

<table>
<thead>
<tr>
<th>Proportion who consumed the recommended serves of vegetables on the previous day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion who consumed the recommended serves of fruit on the previous day</td>
</tr>
</tbody>
</table>

Questions relating to the number of serves of fruit on the previous day were asked in the 1998 and 2001 Nutrition Monitoring Survey\(^4\) (Table 1, Section 3 and Table 2, Section
3). The Benchmark Vegetable and Fruit Consumption Survey 2002\textsuperscript{48} included questions relating to the average daily consumption of vegetables and fruit according to seasonal change. See Table 1, Section 2 and Table 2, Section 2 for the relevant questions.

### Behaviours and attitudes to vegetable and fruit consumption

The Nutrition Monitoring Survey 1998 and 2001\textsuperscript{47} asked several questions relating to intentions to change dietary intake of vegetables and fruit, how respondents feel about the amount of vegetables and fruit they eat and influences on dietary change (Table 1, Section 10 and Table 2, Section 8).

The Benchmark Vegetable and Fruit Consumption Survey 2002\textsuperscript{48} asked several questions on past changes, intention to change, and known benefits of changing vegetable and fruit consumption. See Table 1, Section 10 and Table 2, Section 8 for more details.

### Knowledge of recommended levels of vegetable and fruit consumption

The Nutrition Monitoring Survey 1998 and 2001\textsuperscript{47} and the Benchmark Vegetable and Fruit Consumption Survey 2002\textsuperscript{48} asked questions relating to the knowledge of recommended levels of vegetable and fruit consumption, and known health problems associated with not meeting these requirements. These questions are presented in Table 1, Section 8 and Table 2, Section 6.

#### 4.4.6 Northern Territory

**Proportion usually consuming the recommended serves of vegetables per day**

**Proportion usually consuming the recommended serves of fruit per day**

Questions relating to the average daily consumption of vegetables and fruit were asked in Health and Wellbeing Survey 2000\textsuperscript{49} (Table 1, Section 2 and Table 2, Section 2).
4.5 South Australian Indicators

Proportion usually consuming the recommended serves of vegetables per day

Proportion usually consuming the recommended serves of fruit per day

Questions relating to the average daily consumption of vegetables and fruit are asked in SAMSS\textsuperscript{28} and were asked in the South Australian Health and Wellbeing Survey 2000\textsuperscript{33} (Table 1, Section 2 and Table 2, Section 2).

The following indicator was recommended in SA Health Goals and Targets – Health Monitoring Indicators\textsuperscript{56}.

Proportion of South Australians with a good knowledge of a balanced diet

Questions relating to the requirements of vegetables and fruit for a balanced diet were asked in South Australian Health Goals and Targets Health Monitoring Indicators Survey 1998\textsuperscript{32} (Table 1, Section 9 and Table 2, Section 7).
### Table 1: Vegetable Consumption

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vegetable consumption&lt;br&gt;Includes questions on frequency of consumption and variety of vegetable and fruit consumption.</td>
<td>● How often do you eat carrots?&lt;br&gt;● How often do you eat green salad?&lt;br&gt;● How often do you eat potatoes not including french fries, fried potatoes or potato chips?&lt;br&gt;● In the past 12 months, how many different vegetables do you usually eat per day? (Count all types, fresh, frozen or tinned)&lt;br&gt;● Over the last 12 months, how often did you eat the following foods? (25 vegetable categories listed)&lt;br&gt;● How often do you eat potatoes (not including chips, french fries, wedges, fried potatoes or crisps)?&lt;br&gt;● How often do you eat salad (salad includes mixed green salad and other mixtures of raw vegetables)?&lt;br&gt;● Not counting potatoes and salad, how often do you eat cooked vegetables? Vegetables includes fresh, canned, frozen, dried)&lt;br&gt;● Are you eating about the same amount of fresh vegetables as you were 12 months ago? Vegetables include tomatoes</td>
<td>BRFSS&lt;sup&gt;33&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. Proportion usually consuming the recommended serves of vegetables per day&lt;br&gt;Proportion usually consuming at least four serves of vegetables per day&lt;br&gt;Proportion usually consuming less than two serves per day</td>
<td>● <strong>How many serves of vegetables do you usually eat per day?</strong>&lt;br&gt;(A serve is defined as: ½ cup cooked vegetables or 1 cup salad vegetables&lt;sup&gt;24,25,28,33,35,38,39,41,46,49&lt;/sup&gt; or includes potato and is a quarter cup of cooked vegetables or salad vegetables or 4 vegetable sticks&lt;sup&gt;42,43&lt;/sup&gt;)</td>
<td>1995 National Nutrition Survey&lt;sup&gt;24&lt;/sup&gt;, 2001 National Health Survey&lt;sup&gt;35&lt;/sup&gt;, 1997/1998 NSW Health Survey&lt;sup&gt;35&lt;/sup&gt;, 2001 Victorian Population Health Survey&lt;sup&gt;36&lt;/sup&gt;, 2001 Queensland Omnibus Survey&lt;sup&gt;39&lt;/sup&gt;, 2003 Queensland Child Health Survey&lt;sup&gt;41&lt;/sup&gt;, 2003 Queensland Infant Nutrition Survey&lt;sup&gt;42&lt;/sup&gt;, 1999 - 2000 AusDiab study (Queensland component)&lt;sup&gt;41&lt;/sup&gt;, SAMSS&lt;sup&gt;28&lt;/sup&gt;, 2000 South Australian Health and Wellbeing Survey&lt;sup&gt;33&lt;/sup&gt;, 2000 Western Australia Health and Wellbeing Survey&lt;sup&gt;36&lt;/sup&gt;, 2000 Northern Territory Health and Wellbeing Survey&lt;sup&gt;49&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

*Questions in bold represent questions that have been recommended for use in population studies by the Australian Food and Nutrition Monitoring Unit*
### Table 1: Vegetable Consumption (cont..)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Proportion usually consuming the recommended serves of vegetables per day | ● Not including carrots, potatoes, or salad, how many servings of vegetables do you usually eat (For example, a serving of vegetables at both lunch and dinner would be two servings)?  
● In a typical week in October to March, how many serves of vegetables would you have at the following meals on weekdays and weekends:  
  o Breakfast  
  o Morning snack  
  o Lunch  
  o Afternoon snack  
  o Dinner  
  o Evening snack  
● In a typical week in April to September, how many serves of vegetables would you have at the following meals on weekdays and weekends:  
  o Breakfast  
  o Morning snack  
  o Lunch  
  o Afternoon snack  
  o Dinner  
  o Evening snack | BRFSS<sup>45</sup>                                                                                                                                   | 2002 Benchmark Vegetable and Fruit Consumption Survey<sup>46</sup>                                |
| Proportion usually consuming at least four serves of vegetables per day     |                                                                                                                                                                                                               |                                                                                              |
| Proportion usually consuming less than two serves per day (cont)           |                                                                                                                                                                                                               |                                                                                              |
| 3. Proportion who consumed the recommended serves of vegetables on the previous day | ● How many different types of vegetables did you eat yesterday? Include salad, fresh, frozen, canned, raw and cooked vegetables.  
● How many cups of each type did you eat? 1 medium potato = one cup of vegetables | Nutrition Monitoring Survey 1998 and 2001<sup>47</sup>                                                                                           |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Percentage who rarely or never eat cooked vegetable</td>
<td>• Not counting potatoes or salad, how often do you eat cooked vegetables?</td>
<td>1996 NH&amp;MRC Dietary Key Indicators Study⁴⁴</td>
</tr>
<tr>
<td>Percentage who usually consume cooked vegetable once a day or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Percentage who rarely or never eat salad</td>
<td>• How often do you eat salad?</td>
<td>1996 NH&amp;MRC Dietary Key Indicators Study⁵⁵</td>
</tr>
<tr>
<td>(Salad includes mixed green salad and other mixtures of raw vegetables)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage who usually consume salad once a day or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Percentage who rarely or never eat fried potato</td>
<td>• How often do you eat chips, French fries, wedges, fries potatoes or crisps?</td>
<td>1996 NH&amp;MRC Dietary Key Indicators Study⁵⁵</td>
</tr>
<tr>
<td>Percentage who usually consume fried potato more than 5 times a week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Percentage who rarely or never eat potato</td>
<td>• How often do you eat potatoes? (Not including chips, French fries, wedges,</td>
<td>1996 NH&amp;MRC Dietary Key Indicators Study⁵⁵</td>
</tr>
<tr>
<td>Percentage who usually consume potato once a day or more</td>
<td>fries potatoes or crisps)</td>
<td></td>
</tr>
</tbody>
</table>

Questions in bold represent questions that have been recommended for use in population studies by the Australian Food and Nutrition Monitoring Unit.⁷
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 8. Knowledge of fruit and vegetable consumption requirements | - For a well balanced diet, how often should adults eat vegetables?  
- Can you tell me what the recommended daily intake of vegetables is for adults?  
- What is the recommended intake of vegetables for adults?  
- How important do you think eating vegetables is for health?  
- What do you think are the recommended number of serves of vegetables/fruit that should be eaten each day?  
- What health problems do you think are associated with the following behaviour:  
  - Not eating enough fruit and vegetables?  
- How many serves of vegetables/fruit do you think you should eat per day?  
- Imagine that you reduced the amount of fruit and vegetables that you now eat by half for a year or more. What health problems, if any, do you think you would experience if you did this? | 1999 – 2000 AusDiab study\(^{26}\)  
Central West Nutrition Survey\(^{30}\)  
Nutrition Monitoring Survey 1998 and 2001\(^{47}\)  
Benchmark Vegetable and Fruit Consumption Survey 2002\(^{36}\) |
| 9. Proportion of South Australians with a good knowledge of a balanced diet | - For a well balanced diet  
  - How many serves of vegetables should adults eat per day? | South Australian Health Goals and Targets Health Monitoring Indicators Survey 1998\(^{32}\) |
Table 1: Vegetable Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 10. Attitudes and intention to change dietary intake | • Are you trying at present to make any changes to your choice of foods?  
• About vegetables, in what way are you trying to change?  
• Are you intending to change the amount you eat of any of these groups of foods?  
  o Fruits  
  o Vegetables  
  o Breads or cereals  
  o Foods such as butter, margarine, oils and other foods high in fat  
• About vegetables, in what way are you intending to change?  
• In the past 12 months, have you tried to change the amount of vegetables/fruit you eat? Increase or decrease?  
• What influenced you to try and eat more vegetables/fruit?  
• What steps have you taken to try and increase the amount of vegetables/fruit you eat?  
• Do you feel you eat more, less or about the same amount of vegetables/fruit as you did 12 months ago?  
• Which of the following best currently describes you?  
  o I am currently trying to eat more vegetables/fruit  
  o I am thinking about trying to eat more vegetables/fruit  
  o I am not thinking about increasing the amount of vegetables/fruit I eat | New Zealand National Nutrition Survey54  
Nutrition Monitoring Survey 1998 and 200147 |
## Table 1: Vegetable Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 10. Attitudes and intention to change dietary intake (cont) | • How confident are you that you could increase your vegetable/ fruit intake if you wanted to?  
• Overall what would you say are the best things for you about including vegetables/ fruit in your diet?  
• Overall, what would you say are the worst things for you about including vegetables/ fruit in your diet?  
• In the past 12 months, have you made any changes to your intake of fruit and/or vegetables?  
  o Please indicate why you made these changes  
  o When did you make these changes?  
• If you eat more fruit and/or vegetables, which types do you eat more of than you did 12 months ago?  
• Do you intend to increase your intake of fruit and/or vegetables?  
• Of the following, which three things do you think would improve your overall diet?  
  o Less fat  
  o Less sugar  
  o More fibre  
  o More vitamins and minerals  
  o Less salt  
  o Less alcohol  
  o Less cholesterol  
  o Less carbohydrate  
  o More fruit and vegetables  
  o Less red meat  
• How do you feel about the amount of vegetables and fruit you currently eat?  
• How do you feel about the variety or number of different types of vegetable you currently eat? | 2002 Benchmark Vegetable and Fruit Consumption Survey⁶⁸ |
### Table 1: Vegetable Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 11. Barriers to dietary change   | • Here is a list of thing that people have found difficult about eating more vegetables. Would any apply to you?  
  o Cost too much  
  o I don’t like vegetables  
  o Can’t store them for long  
  o It’s a hassle to try and eat more  
  o Often of poor quality  
  o They cause stomach upset or indigestion  
  o Vegetables are hard to chew  
  o Causes allergy or other bad reaction  
  o Takes too long to prepare  
  o I have nowhere to cook vegetables  
  o Not enough time  
  o They’re not good for me  
  o Would need more willpower to eat more  
  o Pesticides or chemical on vegetables  
  o I would not find it hard to eat more | New Zealand National Nutrition Survey\(^{54}\) |
|                                 | • Would you like to change the amount you eat of any of these foods?  
  o Fruit and vegetables  
  o Breads and cereals  
  o Food high in fat | 1995 National Nutrition Survey\(^{24}\) |
|                                 | • Would you like to eat more or less?                                         |                                             |
|                                 | • What is stopping you from making this change                                |                                             |
|                                 | • What are the main things that make it more difficult for you to eat more vegetables/ fruit? | Nutrition Monitoring Survey 1998 and 2001\(^{47}\) |
Table 1: Vegetable Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 11. Barriers to dietary change (cont) | • How confident are you that you could increase your vegetable/ fruit intake if you wanted to?  
• What stops you from eating more vegetables/ fruit?  
• Overall, what would you say are the best things for you about including vegetables/ fruit in your diet?  
• Overall what would you say are the worst things for you about including vegetables/ fruit in your diet?  
• In the past 12 months, have you made any changes to your intake of fruit and/ or vegetables?  
• Please indicate why you made these changes?  
• When did you make these changes?  
• If you eat more fruit and/ or vegetables, which types do you eat more of than you did 12 months ago?  
• Do you intend to increase your intake of fruit and/ or vegetables?  
• Of the following, which three things do you think would improve your overall diet?  
  o Less fat  
  o Less sugar  
  o More fibre  
  o More vitamins and minerals  
  o Less salt  
  o Less alcohol  
  o Less cholesterol  
  o Less carbohydrate  
  o More fruit and vegetables  
  o Less red meat | 2002 Benchmark Vegetable and Fruit Consumption Survey⁴⁸ |
Table 2: Fruit Consumption

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Fruit consumption | • Over the last 12 months, how often did you eat the following foods? (13 fruit categories listed, including tinned fruit, juice, apples and avocado)  
• Not counting juice, how often do you eat fruit? (fruit includes fresh, canned, frozen, and dried) | 1999 – 2000 AusDiab study\(^2\)                                                              |
|           |                                                                                                                                                                                                            | Central West Nutrition Survey\(^3\)                                                          |
| 2. Proportion usually consuming the recommended serves of fruit per day | • **How many serves of fruit do you usually eat each day?** (A serve is defined as: 1 medium piece or 2 small pieces of fruit or 1 cup of diced pieces\(^2,^{24,25,28,33,38,41,46,49}\) or 1 medium piece or 2 small pieces of fruit\(^3\) or 1 medium piece or 2 small pieces of fruit or 1/3 cup of diced pieces or a tablespoon of dried fruit\(^42,43\)) | 1995 National Nutrition Survey\(^2\) \(1997/1998\) NSW Health Survey\(^3\) \(2001\) National Health Survey\(^5\) \(2001\) Victorian Population Health Survey\(^3\) \(2001\) Queensland Omnibus Survey\(^9\) \(2003\) Queensland Child Health Survey\(^41\) \(2003\) Queensland Infant Nutrition Survey\(^42\) \(1999 – 2000\) AusDiab study (Queensland component)\(^3\) SAMSS\(^7\) South Australian Health and Wellbeing Survey 2000\(^3\) \(2000\) Western Australia Health and Wellbeing Survey\(^4\) \(2000\) Northern Territory Health and Wellbeing Survey\(^49\) \(1999 – 2000\) AusDiab study\(^48\) |
| Proportion usually consuming at least two serves of fruit per day |                                                                                                                                                                                                            |                                                                                             |
| Proportion who don’t eat fruit | • In the past 12 months, how many pieces of fresh fruit do you usually eat per day? (Count ½ cup of diced fruit, berries or grapes as one piece.) | 1999 – 2000 AusDiab study\(^2\)                                                              |

Questions in bold represent questions that have been recommended for use in population studies by the Australian Food and Nutrition Monitoring Unit\(^1\)
### Table 2: Fruit Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Proportion usually consuming the recommended serves of fruit per day</td>
<td>• In a typical week in October to March, how many serves of fruit would you have at the following meals on weekdays and weekends: &lt;br&gt; o Breakfast &lt;br&gt; o Morning snack &lt;br&gt; o Lunch &lt;br&gt; o Afternoon snack &lt;br&gt; o Dinner &lt;br&gt; o Evening snack &lt;br&gt; • In a typical week in April to September, how many serves of fruit would you have at the following meals on weekdays and weekends: &lt;br&gt; o Breakfast &lt;br&gt; o Morning snack &lt;br&gt; o Lunch &lt;br&gt; o Afternoon snack &lt;br&gt; o Dinner &lt;br&gt; o Evening snack</td>
<td>Benchmark Vegetable and Fruit Consumption Survey 2002&lt;sup&gt;48&lt;/sup&gt;</td>
</tr>
<tr>
<td>Proportion usually consuming at least two serves of fruit per day</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion who don’t eat fruit (cont)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Proportion who consumed the recommended serves of fruit on the previous day</td>
<td>• How many pieces of fruit did you eat yesterday?</td>
<td>1998 and 2001 Nutrition Monitoring Survey&lt;sup&gt;77&lt;/sup&gt;</td>
</tr>
<tr>
<td>4. Percentage who rarely or never consume fruit juice</td>
<td>• How often do you drink fruit juices such as orange grapefruit or tomato?</td>
<td>NH&amp;MRC 1996 Dietary Key Indicators&lt;sup&gt;44&lt;/sup&gt;</td>
</tr>
<tr>
<td>Percentage who usually consume fruit juice once a day or more</td>
<td></td>
<td>BRFSS&lt;sup&gt;52&lt;/sup&gt;</td>
</tr>
<tr>
<td>5. Percentage who rarely or never eat fruit</td>
<td>• Not counting juice, how often do you eat fruit</td>
<td>NH&amp;MRC 1996 Dietary Key Indicators&lt;sup&gt;43&lt;/sup&gt;</td>
</tr>
<tr>
<td>Percentage who usually consume fruit once a day or more</td>
<td></td>
<td>BRFSS&lt;sup&gt;52&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Questions in bold represent questions that have been recommended for use in population studies by the Australian Food and Nutrition Monitoring Unit<sup>1</sup>
Table 2: Fruit Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Knowledge of fruit and vegetable consumption requirements</td>
<td>• For a well balanced diet, how often should adults eat fruit?</td>
<td>1999 – 2000 AusDiab study&lt;sup&gt;26&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• Can you tell me what the recommended daily intake of fruit is for adults?</td>
<td>Central West Nutrition Survey&lt;sup&gt;27&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• What is the recommended intake of fruit for adults?</td>
<td>Nutrition Monitoring Survey 1998 and 2001&lt;sup&gt;47&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• How important do you think eating fruit is for health?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What do you think are the recommended number of serves of vegetables/ fruit that should be eaten each day?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What health problems do you think are associated with the following behaviour:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Not eating enough fruit and vegetables?</td>
<td></td>
</tr>
<tr>
<td>6. Knowledge of fruit and vegetable consumption requirements (cont)</td>
<td>• How many serves of vegetables/ fruit do you think you should eat per day?</td>
<td>Benchmark Vegetable and Fruit Consumption Survey 2002&lt;sup&gt;48&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• Imagine that you reduced the amount of fruit and vegetables that you now eat by half for a year or more. What health problems, if any, do you think you would experience if you did this?</td>
<td></td>
</tr>
<tr>
<td>7. Proportion of South Australians with a good knowledge of a balanced diet</td>
<td>• For a well balanced diet;</td>
<td>South Australian Health Goals and Targets Health Monitoring Indicators Survey 1998&lt;sup&gt;32&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>o How many serves of fruit should adults eat per day?</td>
<td></td>
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</table>
### Table 2: Fruit Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Attitudes and intention to change dietary intake</td>
<td>• Are you trying at present to make any changes to your choice of foods?</td>
<td>New Zealand National Nutrition Survey^54</td>
</tr>
<tr>
<td></td>
<td>• About fruit, in what way are you trying to change?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Are you intending to change the amount you eat of any of these groups of foods?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Fruits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Vegetables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breads or cereals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Foods such as butter, margarine, oils and other foods high in fat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• About fruit, in what way are you intending to change?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• In the past 12 months, have you tried to change the amount of vegetables/fruit you eat?</td>
<td>Nutrition Monitoring Survey 1998 and 2001^48</td>
</tr>
<tr>
<td></td>
<td>Increase or decrease</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What influenced you to try and eat more vegetables/fruit?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What steps have you taken to try and increase the amount of vegetables/fruit you eat?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Do you feel you eat more, less or about the same amount of vegetables/fruit as you did 12 months ago?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Which of the following best currently describes you?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o I am currently trying to eat more vegetables/fruit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o I am thinking about trying to eat more vegetables/fruit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o I am not thinking about increasing the amount of vegetables/fruit I eat</td>
<td></td>
</tr>
</tbody>
</table>
## Table 2: Fruit Consumption (cont…)

| Indicator                                                      | Question Asked                                                                 | Survey                                           |
|                                                               |                                                                                | 2002 Benchmark Vegetable and Fruit Consumption Survey<sup>ab</sup> |
| 8. Attitudes and intention to change dietary intake (cont)     | • How confident are you that you could increase your vegetable/ fruit intake if you wanted to? |                                              |
|                                                               | • Overall what would you say are the best things for you about including vegetables/ fruit in your diet? |                                              |
|                                                               | • Overall, what would you say are the worst things for you about including vegetables/ fruit in your diet? |                                              |
|                                                               | • In the past 12 months, have you made any changes to your intake of fruit and/ or vegetables? |                                              |
|                                                               |   o Please indicate why you made these changes                                   |                                              |
|                                                               |   o When did you make these changes?                                             |                                              |
|                                                               | • If you eat more fruit and/ or vegetables, which types do you eat more of than you did 12 months ago? |                                              |
|                                                               | • Do you intend to increase your intake of fruit and/ or vegetables?             |                                              |
|                                                               | • Of the following, which three things do you think would improve your overall diet? |                                              |
|                                                               |   o Less fat                                                                      |                                              |
|                                                               |   o Less sugar                                                                    |                                              |
|                                                               |   o More fibre                                                                    |                                              |
|                                                               |   o More vitamins and minerals                                                    |                                              |
|                                                               |   o Less salt                                                                     |                                              |
|                                                               |   o Less alcohol                                                                  |                                              |
|                                                               |   o Less cholesterol                                                              |                                              |
|                                                               |   o Less carbohydrate                                                             |                                              |
|                                                               |   o More fruit and vegetables                                                     |                                              |
|                                                               |   o Less red meat                                                                 |                                              |
|                                                               | • How do you feel about the amount of vegetables and fruit you currently eat?     |                                              |
Table 2: Fruit Consumption (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 9. Barriers to dietary change      | ● People often find it hard to increase the amount of fruit and vegetables they eat. We’re interested in the sorts of things that people find most difficult about making this change. Here is a list of thing that people have found difficult about eating more fruit. Would any apply to you?  
  o Cost too much  
  o I don’t like fruit  
  o Can’t store fruit for long  
  o It’s a hassle to try and eat more  
  o Often of poor quality  
  o Fruit causes stomach upset or indigestion  
  o It’s hard to chew  
  o Causes allergy or other bad reaction  
  o Not enough time  
  o Don’t always have fruit at home  
  o Contains too much sugar  
  o Fruit is not good for me  
  o Would need more willpower to eat more  
  o Pesticides or chemical on fruit  
  o I would not find it hard to eat more  | New Zealand National Nutrition Survey\(^5^4\)                                      |
|                                   | ● Would you like to change the amount you eat of any of these foods?  
  o Fruit and vegetables  
  o Breads and cereals  
  o Food high in fat  | 1995 National Nutrition Survey\(^4^9\)                                          |
|                                   | ● Would you like to eat more or less?  
  ● What is stopping you from making this change  
  ● What are the main things that make it more difficult for you to eat more vegetables/fruit? | Nutrition Monitoring Survey 1998 and 2001\(^4^7\)                              |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Asked</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Barriers to dietary change (cont)</td>
<td>- How confident are you that you could increase your vegetable/fruit intake if</td>
<td>2002 Benchmark Vegetable and Fruit Consumption Survey&lt;sup&gt;48&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>you wanted to?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- What stops you from eating more vegetables/fruit?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Overall, what would you say are the best things for you about including</td>
<td></td>
</tr>
<tr>
<td></td>
<td>vegetables/fruit in your diet?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Overall what would you say are the worst things for you about including</td>
<td></td>
</tr>
<tr>
<td></td>
<td>vegetables/fruit in your diet?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- In the past 12 months, have you made any changes to your intake of fruit and/</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or vegetables?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Please indicate why you made these changes?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- When did you make these changes?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- If you eat more fruit and/or vegetables, which types do you eat more of than</td>
<td></td>
</tr>
<tr>
<td></td>
<td>you did 12 months ago?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Do you intend to increase your intake of fruit and/or vegetables?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Of the following, which three things do you think would improve your overall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>diet?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less fat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less sugar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o More fibre</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o More vitamins and minerals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less salt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less alcohol</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less cholesterol</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less carbohydrate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o More fruit and vegetables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less red meat</td>
<td></td>
</tr>
</tbody>
</table>
Fruit and vegetable consumption
CHAPTER 5: HEALTHY WEIGHT
5.1 Relevance of Healthy Weight

Overweight and obesity are risk factors for a number of diseases, including hypertension, hyperlipidaemia, cardiovascular disease and Type II diabetes\(^57\). In particular, coronary heart disease, stroke, Type II diabetes mellitus and hypertension are associated with abdominal obesity\(^58\).

Measurements of height and weight in order to calculate body mass index (BMI) are simple, unobtrusive and relatively inexpensive\(^58\). However, it should be noted that self reported BMI is inaccurate to some degree. Height is usually overestimated and weight is usually underestimated, resulting in an underestimation of BMI\(^57\).

Waist circumference measurement and waist-to-hip ratio are simple determinants of abdominal obesity. The WHO suggests that waist circumference alone may provide a more practical indication of abdominal obesity\(^59\). It has also been identified as one of the best indicators of changes in intra-abdominal fat during weight loss\(^57\).

5.2 International Indicators

5.2.1 World Health Organization

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m(^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;18.50</td>
</tr>
<tr>
<td>Grade 3 thinness</td>
<td>&lt;16.0</td>
</tr>
<tr>
<td>Grade 2 thinness</td>
<td>16.0-16.99</td>
</tr>
<tr>
<td>Grade 1 thinness</td>
<td>17.0-18.49</td>
</tr>
<tr>
<td>Normal range</td>
<td>18.50-24.99</td>
</tr>
<tr>
<td>Overweight:</td>
<td>≥25.00</td>
</tr>
<tr>
<td>Preobese</td>
<td>25.00-29.99</td>
</tr>
<tr>
<td>Obese class I</td>
<td>30.00-34.99</td>
</tr>
<tr>
<td>Obese class II</td>
<td>35.00-39.99</td>
</tr>
<tr>
<td>Obese class III</td>
<td>≥40.00</td>
</tr>
</tbody>
</table>

The World Health Organization (WHO) recommends the following cut-off points for measuring BMI in adults\(^59\):
The Centers for Disease Control and Prevention\textsuperscript{60} recommend the following cut-offs for measuring BMI in adults:

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m(^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>≤18.5</td>
</tr>
<tr>
<td>Overweight</td>
<td>≥25 - 30</td>
</tr>
<tr>
<td>Obese</td>
<td>≥30</td>
</tr>
</tbody>
</table>

**Waist Circumference**

The following measurements for waist circumference are recommended by the WHO in predicting increased risk of morbidity\textsuperscript{59}.

<table>
<thead>
<tr>
<th>Risk of Complications</th>
<th>Waist Circumference (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
</tr>
<tr>
<td>Increased risk</td>
<td>≥94</td>
</tr>
<tr>
<td>Substantially increased risk</td>
<td>≥102</td>
</tr>
</tbody>
</table>

**Waist to Hip Ratio**

Waist-hip ratio (WHR) has also become accepted as a method of identifying those with increased abdominal fat accumulation. A high WHR in males is considered to be > 1.0 and in women it is considered to be > 0.85\textsuperscript{59}.

**5.2.2 United States**

**Self-reported BMI**

The National Health and Nutrition Examination Survey (NHANES)\textsuperscript{51} has asked respondents for their height and weight in order to establish BMI in adults (Table 3, Section 1).

**Personal assessment of weight status**

Respondents have been asked in the NHANES\textsuperscript{51} whether they considered themselves to be overweight, underweight or an acceptable weight (Table 3, Section 5).
Respondents in the NHANES\textsuperscript{51} have been asked about their desired weight, their weight history, what they have done in the past to control their weight and their current weight control behaviours and attitudes (Table 3, Section 6).

Questions in the BFRSS\textsuperscript{53} relate to current weight status and weight control behaviours (Table 3, Section 6).

\section*{5.3 Australian Indicators}

\subsection*{5.3.1 Body Mass Index}

The National Health Data Dictionary\textsuperscript{2} classifies adult BMI for use in public health and health care as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m\textsuperscript{2})</th>
<th>Risk of comorbidities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Not overweight or obese</td>
<td>&lt; 25.00</td>
<td>Low (but risk of other clinical problems increased)</td>
</tr>
<tr>
<td>1.1 Underweight</td>
<td>&lt; 18.50</td>
<td></td>
</tr>
<tr>
<td>1.2 Normal range</td>
<td>18.50 – 24.99</td>
<td>Average</td>
</tr>
<tr>
<td>2 Overweight</td>
<td>&gt; or 25.00</td>
<td></td>
</tr>
<tr>
<td>2.1 Overweight</td>
<td>&gt; or = 25.00</td>
<td></td>
</tr>
<tr>
<td>2.2 Pre Obese</td>
<td>25.00 – 29.99</td>
<td>Increased</td>
</tr>
<tr>
<td>3 Obese</td>
<td>&gt; = 30</td>
<td></td>
</tr>
<tr>
<td>3.1 Obese class 1</td>
<td>30.00 – 34.99</td>
<td>Moderate</td>
</tr>
<tr>
<td>3.2 Obese class 2</td>
<td>35.00 – 39.99</td>
<td>Severe</td>
</tr>
<tr>
<td>3.3 Obese class 3</td>
<td>&gt; or = 40.00</td>
<td>Very severe</td>
</tr>
<tr>
<td>9 Not stated/ adequately described</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following indicators are suggested as potential indicators in \textit{Eat Well Australia: An Agenda for Action for Public Health Nutrition 2000-2010}\textsuperscript{3}.

\textbf{Prevalence of overweight and obesity by target group}

\begin{center}
\textbf{BMI}
\end{center}

The following cut-offs for BMI measurement are recommended by the NH&MRC\textsuperscript{5}.
Healthy weight

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt;20</td>
</tr>
<tr>
<td>Normal</td>
<td>≥20 to ≤25</td>
</tr>
<tr>
<td>Overweight</td>
<td>&gt;25 to ≤30</td>
</tr>
<tr>
<td>Obese</td>
<td>&gt;30</td>
</tr>
</tbody>
</table>

The following cut-offs for BMI measurement were used in the 1999 – 2000 AusDiab Study26.

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Overweight</td>
<td>&lt;25.0</td>
</tr>
<tr>
<td>Overweight</td>
<td>Pre-obese</td>
</tr>
<tr>
<td></td>
<td>Obese</td>
</tr>
</tbody>
</table>

The following cut-offs for BMI measurement were used as the classification in the 1995 NNS24.

<table>
<thead>
<tr>
<th>Classification</th>
<th>BMI (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>≤18.5</td>
</tr>
<tr>
<td>Overweight</td>
<td>≥25-30</td>
</tr>
<tr>
<td>Obese</td>
<td>≥30</td>
</tr>
</tbody>
</table>

Measurements for height and weight were measured by trained interviewers in the 1995 NNS24 and the 1999 – 2000 AusDiab study26 (Table 3, Section 2). Measurements for height and weight were self-reported in the 1995 NHS23, 2001 NHS25, the Australian Longitudinal Study on Women’s Health27, (Table 3, Section 1).

5.3.2 Waist Circumference

The National Health Data Dictionary2 defines waist circumference as an indicator of risk of metabolic complications associated with obesity and overweight in the following manner.

1  Not at risk (male waist circumference < 94 cm, female waist circumference < 80 cm).
2 Increase (male waist circumference $\geq 94$ cm, female waist circumference $\geq 80$ cm).
3 Substantially increased (male waist circumference $\geq 102$ cm, female waist circumference $\geq 88$ cm).
9 Not stated/ inadequately described.

### Waist circumference

The following measures for waist circumference were used for classification in the 1999 – 2000 AusDiab Study\(^{26}\) (Table 3, Section 3).

<table>
<thead>
<tr>
<th>Classification</th>
<th>Waist Circumference (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
</tr>
<tr>
<td>Not overweight</td>
<td>$&lt;94.0$</td>
</tr>
<tr>
<td>Overweight</td>
<td></td>
</tr>
<tr>
<td>Pre-obese</td>
<td>94.0 - 101.9</td>
</tr>
<tr>
<td>Obese</td>
<td>$\geq 102.0$</td>
</tr>
</tbody>
</table>

#### 5.3.3 Waist to Hip Ratio

The National Health Data Dictionary\(^{2}\) defines waist to hip ratio as an indicator of body fat distribution and as a result a predictor of obesity-related mortality and morbidity. Waist-to-hip ratio = waist circumference/hip circumference. The cutoffs described in the Data Dictionary\(^{2}\) for Australia are those used in the 1995 NNS\(^{23}\), that is male: $> 0.9$ and female: $> 0.8$.

### Waist-to hip ratio

The following classification for abdominal obesity was used in the 1995 NNS\(^{24}\) (Table 3, Section 4):
- Male: $> 0.9$
- Female: $> 0.8$
5.3.4 Weight Beliefs and Attitudes

**Weight control beliefs and attitudes**

The 1995 NNS\(^{24}\) included questions relating to weight gain or loss over the previous twelve month period, and reasons for this weight change (Table 3, Section 6).

Questions relating to self assessed body mass, that is, questions asking whether the respondent considers themselves to be underweight, normal weight, overweight or obese, were asked in the 1995 NHS\(^{23}\) and 2001 NHS\(^{25}\) (Table 3, Section 5).

The 2000 Australian Longitudinal Study on Women’s Health\(^{27}\) and the 1999 - 2000 AusDiab study\(^{26}\) included questions on past weight history and current weight control habits of respondents (Table 3, Section 6).

**Personal assessment of weight status**

The 1999 – 2000 AusDiab study\(^{26}\) asked respondents about their personal assessment of their weight status (Table 3, Section 5).

5.4 Other Australian States’ Indicators

5.4.1 New South Wales

**Self-reported BMI**

The 1997/1998 NSW Health Survey\(^{35}\) asked respondents for their height and weight in order to establish BMI in adults.

*Recommendations for Food and Nutrition Monitoring in NSW\(^{41}\)* recommends both using the WHO and the NH&MRC categories in order to remain consistent with past surveys. The following indicators are recommended by NSW Centre for Public Health Nutrition\(^{11}\), using the same ratio as defined in NNS 1995\(^{24}\).

**Proportion of population by BMI category**

**Waist-to-hip ratio**
**Weight related attitudes and practices**

The *Recommendations for Monitoring Overweight and Obesity*\(^5\) recommends monitoring the following areas:

2. Weight loss behaviours and intentions.
3. Weight goals (not necessarily loss only).
4. Actions pursued for weight maintenance, loss or gain.
5. Barriers to healthy weight management.

### 5.4.2 Victoria

**BMI**

The Victorian Population Health Survey\(^3\) asked respondents for their height and weight in order to establish BMI (Table 3, Section 1).

### 5.4.3 Queensland

**BMI**

The 2001 Omnibus Survey\(^3\) asked respondents for their height and weight in order to establish BMI (Table 3, Section 1).

### 5.4.4 Tasmania

**Incidence of overweight**

This indicator is listed in the Tasmanian Food and Nutrition Policy\(^6\).

**BMI**

Measurements of height and weight were taken in the 1996 NH&MRC Dietary Key Indicators Study\(^4\) in order to calculate BMI (Table 3, Section 2).

**Waist circumference**
The waist circumference of respondents was measured in the 1996 NH&MRC Dietary Key Indicators Study\textsuperscript{44} by trained interviewers (Table 3, Section 3).

5.4.5 Western Australia

<table>
<thead>
<tr>
<th>BMI</th>
</tr>
</thead>
</table>

The Nutrition Monitoring Survey 1998 and 2001\textsuperscript{47}, the Benchmark Fruit and Vegetable Survey\textsuperscript{48} and the Health and Wellbeing Survey\textsuperscript{46} asked respondents for their height and weight in order to calculate BMI (Table 3, Section 1).

<table>
<thead>
<tr>
<th>Personal assessment of weight status</th>
</tr>
</thead>
</table>

The Nutrition Monitoring Survey\textsuperscript{47} and the Benchmark Vegetable and Fruit Consumption Survey\textsuperscript{48} asked respondents to assess their own weight status (Table 3, Section 5).

<table>
<thead>
<tr>
<th>Weight control behaviours and attitudes</th>
</tr>
</thead>
</table>

The Nutrition Monitoring Survey\textsuperscript{47} asked respondents about their past weight history and current weight control habits (Table 3, Section 6).

5.4.6 Northern Territory

<table>
<thead>
<tr>
<th>Self-reported BMI</th>
</tr>
</thead>
</table>

The Northern Territory Health and Wellbeing Survey\textsuperscript{49} asked respondents about their height and weight in order to determine self reported BMI.

The Northern Territory Government\textsuperscript{18} is examining issues such as:

<table>
<thead>
<tr>
<th>Proportion of adults who are overweight/obese</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Proportion of adults who are underweight</th>
</tr>
</thead>
</table>
5.5 South Australian Indicators

Self-reported BMI

The following surveys asked respondents about their height and weight in order to calculate BMI:
- SAMSS\textsuperscript{28};
- South Australian Health and Wellbeing Survey 2000\textsuperscript{33};
- Health Monitor September 2002\textsuperscript{29}; and
- 1997 and 1998 Health Goals and Targets Health Priority Areas Survey\textsuperscript{31}.

For details see Table 3, Section 1.

Personal assessment of weight status

The 1997 and 1998 Health Goals and Targets Health Priority Areas Survey\textsuperscript{31} and the Health Monitor September 2002\textsuperscript{29} asked respondents to assess their own weight status (Table 3, Section 5).

Weight control beliefs and attitudes

The Health Monitor September 2002\textsuperscript{29} asked respondents about their current weight concerns and weight control habits of the past month (Table 3, Section 6).

The following indicator is suggested in SA Health Goals and Targets\textsuperscript{32}.

Proportion of adults who are overweight
### Table 3: Healthy Weight

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-reported BMI</td>
<td>• How tall are you without shoes?</td>
<td>National Health and Nutrition Examination Survey(^5)</td>
</tr>
<tr>
<td></td>
<td>• How much do you weigh without clothes or shoes?</td>
<td>1995 National Health Survey(^2)</td>
</tr>
<tr>
<td></td>
<td>• How much do you weigh?</td>
<td>2001 National Health Survey(^2)</td>
</tr>
<tr>
<td></td>
<td>• How tall are you, without shoes?</td>
<td>2000 Australian Longitudinal Study on Women’s Health(^7)</td>
</tr>
<tr>
<td></td>
<td>• What is you height without shoes?</td>
<td>1997/1998 NSW Health Survey(^3)</td>
</tr>
<tr>
<td></td>
<td>• What is your weight? (undressed in the morning)</td>
<td>2001 Queensland Omnibus Survey(^3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Victorian Population Health Survey(^8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nutrition Monitoring Survey 1998 and 2001(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benchmark Vegetable and Fruit Consumption Survey 2002(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SAMSS(^5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000 South Australian Health and Wellbeing Survey(^3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000 Western Australian Health and Wellbeing Survey(^4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000 Northern Territory Health and Wellbeing Survey(^5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health Monitor September 2002(^5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1997 and 1998 Health Goals and Targets Health Priority Areas Survey(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1999 – 2000 AusDiab study(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1996 NH&amp;MRC Dietary Key Indicators Study(^4)</td>
</tr>
<tr>
<td>3. Waist circumference</td>
<td>• Measured</td>
<td>1999 – 2001 AusDiab Study(^2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1996 NH&amp;MRC Dietary Key Indicators Study(^4)</td>
</tr>
</tbody>
</table>
## Table 3: Healthy Weight (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 5. Personal assessment of weight status | Do you consider yourself now to be:  
  - Overweight?  
  - Underweight?  
  - About the right weight? | National Health and Nutrition Examination Survey[^21] |
| | With regard to your weight, do you consider yourself to be:  
  - Underweight?  
  - The right weight?  
  - Slightly overweight?  
| | How would you consider your weight? Would you say you are:  
  - Very overweight?  
  - Somewhat overweight?  
  - Only a little overweight?  
  - About right?  
  Benchmark Vegetable and Fruit Consumption Survey 2002[^18]  
  1997 and 1998 Health Goals and Targets Health Priority Areas Survey[^22]  
  Health Monitor September 2002[^3]  
  1995 National Health Survey[^23]  
  2001 National Health Survey[^25] |
### Table 3: Healthy Weight (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Weight control behaviours and</td>
<td>• Would you like to weigh:</td>
<td>National Health and Nutrition Examination Survey(^{31})</td>
</tr>
<tr>
<td>attitudes</td>
<td>o More</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o About the same</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How much did you weigh a year ago?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Was the change between your current weight and you weight a year ago</td>
<td></td>
</tr>
<tr>
<td></td>
<td>intentional?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• During the past 12 months, have you tried to lose weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How did you try to lose weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• During the last 12 months, have you done anything to keep from gaining</td>
<td></td>
</tr>
<tr>
<td></td>
<td>weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What did you do to keep from gaining weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How much did you weigh ten years ago? (If you don’t know your exact</td>
<td></td>
</tr>
<tr>
<td></td>
<td>weight, please make your best guess)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How much did you weigh at age 25? (If you don’t know your exact weight,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>please make your best guess)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How tall were you at age 25? (If you don’t know your exact height,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>please make your best guess)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Up to the present time, what is the most you have ever weighed?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How old were you then?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What is the least you have ever weighed since you were 18?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How old were you then?</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3: Healthy Weight (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 6.        | Are you now trying to lose weight?  
|           | Are you now trying to maintain your current weight, that is to keep from gaining weight?  
|           | Are you eating fewer calories or less fat either to:  
|           | o Lose weight?  
|           | o Keep from gaining weight?  
|           | How much would you like to weigh  
|           | In the past 12 months, has a doctor, nurse or other health professional given you advice about your weight?  
|           | Compared to the same time last year, has you weight increased, decreased or stayed the same?  
|           | What do you think were the reasons for this weight change?  
|           | Have you been overweight in the past?  
|           | Do you find it hard to keep your weight steady?  
|           | Are you the kind of person who never puts on weight?  
|           | Do you consider your current weight to be harmful to your health?  
|           | Which of the following best describes you at the moment?  
|           | o I am actively doing things to try to gain weight at the moment  
|           | o I am actively doing things to try to avoid gaining weight at the moment  
|           | o I am actively doing things to try to lose weight at the moment  
|           | o I am not doing anything in particular for my weight at the moment  
|           | Have you tried to lose weight in the past?                                                                                                                                                                                                                                                                                                                                                      | BRFSS<sup>53</sup>                                                                 |
**Table 3: Healthy Weight (cont…)**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 6. Weight control behaviours and attitudes (cont) | - Are you concerned about your current weight?  
  - Do you think that weight can be harmful to health?  
    - Not harmful at all  
    - Not very harmful  
    - Harmful  
    - Quite harmful  
    - Very harmful  
  - In the past month, have you been actively trying to lose weight?  
  - In the past month have you been actively trying not to gain weight?  
  - Are you seriously trying to lose weight to reach your goal in the next six months?  
  - Have you maintained your desired weight from more than six months?  
  - How much would you LIKE to weigh NOW?  
  - How often have you gone on a diet (that is, limited how much you ate) in order to lose weight DURING THE LAST YEAR?  
  - Excluding pregnancy, in the last FOUR YEARS, how many times have you:  
    - Lost 5 kg or more on purpose  
    - Lost 5 kg or more for any other reason  
    - Gained 5 kg or more which was previously lost on purpose  
  - In the PAST MONTH, how dissatisfied have you felt about:  
    - Your weight  
    - Your shape  
  - Have there been times when you felt that you have eaten what other people would regard as an unusually large amount of food GIVEN THE CIRCUMSTANCES?  
  - During these times of overeating, did you have a sense of having lost control over your eating, that is, feeling that you could not stop once you had started?  
  - During the PAST MONTH, how often would you have overeaten and experienced loss of control?  
  - How long have you been doing this? | Health Monitor September 2002\(^{27}\)  
2000 Australian Longitudinal Study on Women’s Health\(^{27}\) |
Table 3: Healthy Weight (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Weight control behaviours and attitudes (cont)</td>
<td>* In THE LAST 12 MONTHS, have you used any of these methods to control your weight or shape?</td>
<td>2000 Australian Longitudinal Study on Women’s Health&lt;sup&gt;27&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Vigorous exercise</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Vomited on purpose after eating</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Used laxatives, diuretics or diet pills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Attended commercial weight loss program (eg Weight Watchers, Jenny Craig)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Meal replacements ore slimming products (eg Limmits, Herbalife)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Cut down on size of meals or between meal snacks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Cut down on fats and/ or sugars</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Cut out meals (fasted)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Smoking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* How often in the LAST MONTH did you use each of these methods to control your weight or shape?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Do you exclude any of the following food groups from you diet?</td>
<td>Nutrition Monitoring Survey 1998 and 2001&lt;sup&gt;17&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Red meat (beef, lamb, pork)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fish</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Poultry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Eggs, milk and milk products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* If YES, how long have you been excluding this food group?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* In the past 12 months have you tried to lose/ gain weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* What influenced you to try to lose/ gain weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* What steps have you taken to try to lose/ gain weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* And how does your current weight compare with your weigh 12 months ago?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* Which of the following best currently describes you?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- I am currently trying to lose or gain weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- I am thinking about trying to lose or gain weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- I am not thinking about trying to lose or gain weight</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* What are the main things that make it difficult for you to control your weight?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>* What health problems do you think are associated with:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Eating too much fat or fatty foods?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Being overweight?</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 6: BREASTFEEDING
6.1 Relevance of Breastfeeding Indicators

The NH&MRC Dietary Guidelines for Children and Adolescents incorporating the Infant Feeding Guidelines\(^6\) have been revised to concur with recent WHO guidelines, which recommend exclusive breastfeeding for 6 months.

Consistent definitions of breastfeeding practices (e.g. exclusive breastfeeding) are required in order to accurately monitor and compare practices over time\(^1\).

The small sample size of infants less than six months of age typically recruited in population surveys can be a limitation of such surveys. In the last National Health Survey\(^25\), the number of infants aged less than six months was 400. This can reduce the accuracy of data and patterns of change over time\(^1\).

It is suggested that mothers are able to accurately recall over several years whether they ever breastfed and the duration of breastfeeding. It is therefore recommended by Webb et al\(^62\) that the three indicators listed below are measured based on recalled practices, and be taken from samples of children less than four years of age. The indicators are:

- Percent ever breast fed;
- Percent breastfeeding at each completed month of age to 12 months (Prevalence of breastfeeding during the first 12 months);
- Median duration of breastfeeding among ‘ever breastfed’ children\(^62\).

However, evidence suggests that mothers are less likely to recall with precision the age at which solids and other complementary foods were introduced, and therefore it is recommended that the remaining four indicators listed below, be measured based on current practices (i.e. the previous 24 hours) and be sampled from children aged less than six months.

- Percent exclusively breastfeeding in the previous 24 hours among infants at each completed month of age to six months;
- Percent fully breastfeeding the previous 24 hours among infants at each completed month of age to six months;
- Percent receiving solid foods in the previous 24 hours among infants at each completed month of age to six months;
- Percent receiving breastmilk substitutes in the previous 24 hours among infants at each completed month of age to six months\(^62\).
The following definitions are taken from Webb et al\textsuperscript{62} and define key breastfeeding terms:

- **Ever breastfed**: Includes infants who have ever been put to the breast, if only once, and infants who have received expressed breastmilk, but have never been put to the breast.
- **Exclusively breastfed**: Includes infants who have only ever received breastmilk, with no other liquids or solids, excluding vitamins, mineral supplements or medicines.
- **Predominantly breastfed**: Includes infants whose main source of nourishment is breastmilk, that is, with or without water, water based drinks (sweetened or flavoured water, teas, infusions etc), fruit juice and Oral Rehydration Salts Solution. This definition does not include any other liquids, such as breastmilk substitutes or food-based fluid, or solids.
- **Fully breastfed**: Includes infants who receive breastmilk as their main source of nourishment. This definition includes infants who are either exclusively breastfed or predominantly breastfed.
- **Solid foods**: Any nutrient containing food (solid or semi solid).
- **Breastmilk substitute**: Any milk, other than breast milk, or food-based fluid given to the infant as a replacement for breastmilk. May include infant formula, cow’s milk and other milks.
- **Complementary foods/feeding**: Any nutrient-containing foods (solids or liquids other than breastmilk) given to infants who are breastfeeding.

### 6.2 International Indicators

#### 6.2.1 World Health Organization

The WHO developed key breastfeeding indicators in 1991\textsuperscript{63}, in order to establish international standards for monitoring the status of breastfeeding in children according to age. These indicators have since been updated\textsuperscript{64} and include:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding rate</td>
<td>Proportion of infants less than 4 months of age who are exclusively breastfed (period increased to 6 months in 2001)</td>
</tr>
<tr>
<td>Predominant breastfeeding rate</td>
<td>Proportion of infants less than 4 months of age who are predominantly breastfed</td>
</tr>
</tbody>
</table>
Timely complementary feeding rate: Proportion of infants 6-9 months of age who are receiving breast milk and complementary foods

Continued breastfeeding rate (1 year): Proportion of children 12-15 months of age who are breastfeeding

Continued breastfeeding rate (2 years): Proportion of children 20-23 months of age who are breastfeeding

Bottle-feeding rate: Proportion of infants less than 12 months of age who are receiving any food or drink from a bottle

In addition, WHO developed optional additional breastfeeding indicators, as listed below:

Ever breastfed: Proportion of infants less than 12 months of age who were ever breastfed

Timely first suckling rate: Proportion of infants less than 12 months of age who were first suckled within one hour of birth

Exclusive breastfeeding rate by mother: Proportion of infants up to 4 months of age who are exclusively breastfed by their natural mother

Median duration of breastfeeding: The age (in months) when 50% of children are no longer breastfed

Based on a systematic review, WHO increased the recommended duration of exclusive breastfeeding to six months in 2001.

In order to monitor key breastfeeding indicators, WHO developed sample questions for use in determining breastfeeding rates. These questions can be found in Table 4, Section 1.
6.2.2 United States

Breastfeeding rate

Questions about breastfeeding were asked in the NHANES\textsuperscript{51} about children less than six years old. Questions related to whether the child was ever breastfed, the age of the child when other fluids including infant formula were introduced and when the child was first fed solid foods. The questions are detailed in Table 4, Section 1.

6.3 Australian Indicators

The following indicators are recommended by Webb et al\textsuperscript{62} and are based on mothers’ recalled child feeding practices of children aged less than 4 years:

- Percent of infants ever breastfed
- Percent of infants breastfeeding at each completed month of age to 12 months (Prevalence of breastfeeding during the first 12 months)
- Median duration of breast feeding among “ever breastfed” children

The following indicators are based on mothers’ reported current child feeding practised in the previous 24 hours of infants aged less than 6 months, as recommended by Webb et al\textsuperscript{62}:

- Percent exclusively breastfeeding in the previous 24 hours among infants at each completed month of age to 6 months
- Percent fully breastfeeding in the previous 24 hours among infants at each completed month of age to 6 months
- Percentage of infants aged 6 months or less who have received solid foods in the previous 24 hours
- Percentage of infants at each completed month of age to 6 months who have received breast milk substitutes in the previous 24 hours
The status of breastfeeding of children aged less than 3 years was asked in the 2001 NHS\textsuperscript{25} and compared according to the age of the child (Table 4, Section 1). Degrees of breastfeeding were:

- Fully breastfed
- Partially breastfed
- Complementary breastfeeding
- Not currently breastfeeding
- Not breastfeeding.

The recently released \textit{Dietary Guidelines for Children and Adolescents in Australia incorporating the Infant Feeding Guidelines for Health Workers}\textsuperscript{6} encourages and supports breastfeeding as one of its primary guidelines. The guidelines also list factors associated with initiation and duration of breastfeeding. These may be useful in developing future indicators.

### 6.4 Other Australian States’ Indicators

#### 6.4.1 New South Wales

<table>
<thead>
<tr>
<th>Prevalence and duration of breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of introduction of formula, cow’s milk and solids</td>
</tr>
</tbody>
</table>

The above indicators were suggested in \textit{Recommendations for Food and Nutrition Monitoring in NSW}\textsuperscript{11}. These recommendations also suggest that at minimum, breastfeeding data should be collected on full and partial breastfeeding, at time of hospital discharge, and at 3 months and 6 months.

<table>
<thead>
<tr>
<th>Breastfeeding rate</th>
</tr>
</thead>
</table>

Questions relating to the above indicator were asked in the 2001 Child Health Survey\textsuperscript{37} about children aged less than two years. Questions related to whether the child was ever breastfed, whether the child is currently breastfeeding, the age of the child when other fluids including infant formula were introduced and when the child was first fed solid foods (Table 4, Section 1).
Reasons for and against breastfeeding

The 2001 Child Health Survey\(^37\) also asked questions about reasons for deciding to breastfeed (Table 4, Section 3).

6.4.2 Queensland

Prevalence and duration of breastfeeding

Age of introduction of formula, cow’s milk and solids

The Perinatal Data Report\(^65\) provides mean birth weights and the proportion of infants breast fed at discharge from hospital by Aboriginal or Torres Strait Islander designations and other demographic data such as the age of the mother.

Questions relating to the rate of breastfeeding were asked in the 2003 Infant Nutrition\(^42\) Survey and the 2003 Child Health Survey\(^43\), for children less than five years of age. Questions included whether the child had ever been breastfed, whether the child was currently breastfeeding, reasons to breastfeed, the total period of breastfeeding, age at introduction of solid foods by type of food, age of introduction of other milk and other beverages, use of drinks and beverages and other oral intake the child received in the past 24 hours. For question details see Table 4, Section 1. Questions regarding the information received about breastfeeding were asked in the 2003 Child Nutrition Survey\(^43\) (Table 4, Section 5).

6.4.3 Tasmania

The Tasmanian Food and Nutrition Draft Policy\(^61\) lists the following indicators of breastfeeding rates:

Rates of breastfeeding on discharge from hospital

Rates of breastfeeding (full or partial) at 6 months of age
6.4.4 Western Australia

**Attitudes towards breastfeeding**

The 1998 and 2001 Nutrition Monitoring Survey\(^47\) asked several questions related to the above indicator, including questions about the importance and known benefits of breastfeeding, recommended duration, perceived supports and barriers to breastfeeding and acceptance of public breastfeeding (Table 4, Section 2).

6.4.5 Northern Territory

The Northern Territory Government\(^18\) is examining issues such as:

- Proportion of low birth weight in Aboriginal population
- Mean birth weight of aboriginal infants
- Breastfeeding rates at discharge from hospital
- Percentage of women fully and partially breastfeeding at 3 months and 12 months

6.5 South Australian Indicators

**Breastfeeding rate**

Questions relating to the rate of breastfeeding were asked in SAMSS\(^28\) about children aged less than four years of age. Questions included whether the child had ever been breastfed, whether the child is currently breastfeeding, the total period of breastfeeding and any other oral intake the child had received in the past 24 hours. For question details see (Table 4, Section 1).

The 1997 and 1998 Health Goals and Targets Health Priority Areas Surveys\(^31\) asked questions about the type of milk children aged between six months and three years were fed at six months of age. In addition, the 1998 survey\(^31\) asked whether the child was ever breastfed and how long the child was breastfed for (Table 4, Section 1).
Breastfeeding

Attitudes towards breastfeeding

The Health Monitor survey conducted in September 2002\textsuperscript{29} asked questions about attitudes towards breastfeeding, including the importance of breastfeeding, and opinions on when infants should first be fed fluids and solids and the length infants should be breastfed, and whether the respondent had ever breastfed an infant for longer than six months. The questions are presented in Table 4, Section 2.

The Infant Feeding Survey 1997\textsuperscript{30} also asked an extensive number of questions relating to attitudes to breastfeeding and bottle feeding (Table 4, Section 2) and experience of infant feeding (Table 4, Section 4).

Reasons for and against breastfeeding

The 1998 Health Goals and Targets Health Priority Areas Survey\textsuperscript{31} asked several questions relating to this indicator, including reasons for cessation of breastfeeding, what would have encouraged breastfeeding, reasons for not attempting to breastfeed, reasons for breastfeeding and influences on the decision to breastfeed (Table 4, Section 3).
Table 4: Breastfeeding

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Breastfeeding rate</td>
<td></td>
<td>WHO sample question for use on breastfeeding indicators&lt;sup&gt;63&lt;/sup&gt;</td>
</tr>
<tr>
<td>Including questions relating to:</td>
<td></td>
<td>2003 Infant Nutrition Survey&lt;sup&gt;42&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Rate ever breastfed</td>
<td></td>
<td>2003 Child Health Survey&lt;sup&gt;43&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Current breastfeeding habits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Breastfeeding at discharge from hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Duration of breastfeeding (exclusive and partial)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Complementary feeding</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• For each child less than 24 months old ask the respondent:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Can you tell me how old the child is today?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o If possible the exact date is...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Since this time yesterday, has (name) been breastfed?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o If yes, was this (name’s) main source of food?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Since this time yesterday, did (name) receive any of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Vitamins, mineral supplements, medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Plain water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Sweetened or flavoured water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Fruit juice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Tea or infusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Infant formula</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Tinned, powdered or fresh milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Solid or semi-solid food</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Oral rehydration salts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• I am going to read you a list of various drinks and foods that [child] may consume. I would like you to tell me if he/she has been fed any of these things since this time yesterday?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Vitamins, mineral supplements, medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Plain water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Cordial or other sweetened or flavoured water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Fruit juice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Tea herbal tea or infusion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastmilk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Infant formula</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Cow’s milk — either fresh, tinned or powdered</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Other milk such as goat, soy or rice milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Any solid or semi-solid foods such as mashed fruit or veges, baby cereal or other baby food (ask if child under 10 months)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Fizzy soft drink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Anything else (specify) (ask if child under 10 months)</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4: Breastfeeding (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Breastfeeding rate (cont)</td>
<td>- Was [child] ever breastfed or fed breastmilk?</td>
<td>National Health and Nutrition Examination Survey&lt;sup&gt;31&lt;/sup&gt; - Asked about children less than 6 years old</td>
</tr>
<tr>
<td></td>
<td>- How old was [child] when he/ she was first fed something other than breastmilk or water?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- How old was [child] when he/ she completely stopped breastfeeding or being fed breastmilk</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- How old was [child] when he/ she was first fed formula on a daily basis?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- How old was [child] when he/ she completely stopped drinking formula?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- How old was [child] when he/ she was first fed milk on a daily basis?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- What type of milk was [child] first fed on a daily basis?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- How old was [child] when he/she started eating solid foods (such as strained foods like baby food or any other non-liquid foods) on a daily basis?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>If respondent mother or father</td>
<td>- Has [child] ever been breastfed?</td>
<td>2001 Child Health Survey&lt;sup&gt;37&lt;/sup&gt; - Asked about children aged 0-2 years</td>
</tr>
<tr>
<td></td>
<td>- Is [child] currently being breastfed?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- Was [child] breastfed when he/ she first came home from the hospital?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- Including times of weaning, what is the total time [child] was breastfed?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>If respondent mother</td>
<td>- What was the main reason you decided to breast feed?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>- Has [child] ever been given infant formula regularly (‘regularly’ means at least once a day)</td>
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<tr>
<td></td>
<td>- At what age was [child] first given infant formula?</td>
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<td></td>
<td>- Has [child] ever been given cow’s milk regularly?</td>
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<td></td>
<td>- At what age was [child] first given cow’s milk regularly?</td>
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<td></td>
<td>- Has [child] ever been given any other type of milk substitute on a regular basis?</td>
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<td></td>
<td>- What type of milk substitutes did [child] have?</td>
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<td></td>
<td>- At what age was [child] first given [this/ any of these] milk substitutes regularly?</td>
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<tr>
<td></td>
<td>- Has [child] ever been given solid food?</td>
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<tr>
<td></td>
<td>- At what age was [child] first given solid good regularly?</td>
<td>----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Indicator</td>
<td>Question</td>
<td>Survey</td>
</tr>
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</tr>
</tbody>
</table>
| 1. Breastfeeding rate (cont) | • Has [child’s name] ever been breastfed?  
• Since this time yesterday, has [child’s name] been breastfed?  
• Since this time yesterday, did [child’s name] receive any of the following:  
  o Vitamins, mineral supplements, medicine  
  o Sweetened or flavoured water eg cordial, soft drinks, “fruit box”, Ribena  
  o Fruit juice  
  o Tea or infusion  
  o Infant formula  
  o Tinned, powdered or fresh milk  
  o Solid or semi-solid food eg “farex”, baby cereal, home prepared or bought baby food  
  o Oral rehydration salts  
  o Other (specify)  
  • Including time of weaning, what is the total time that [child’s name] was breastfed?  
• What kind of milk was your youngest child, who is aged six months or older, fed at six months of age?  
  o Fully breast milk  
  o Fully bottle milk  
  o Breast and bottle milk  
  • What kind of milk was used to bottle feed?  
  o Cow  
  o Goat  
  o Formulae (specify brand)  
  o Soya milk  
  o Other (specify)  
• Did you start to breastfeed your youngest child?  
• How long did you breastfeed for? | SAMSS<sup>28</sup>  
- Asked if child under 4  
1997 and 1998 Health Goals and Targets Health Priority Areas Survey<sup>31</sup>  
- Asked of mothers in relation to her youngest child who was aged between six months and three years  
1998 Health Goals and Targets Health Priority Areas Survey<sup>31</sup>  
- Asked of mothers in relation to her youngest child who was aged between six months and three years |
Table 4: Breastfeeding (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Breastfeeding rate (cont) | | 1995 National Health Survey<sup>23</sup>  
2001 National Health Survey<sup>25</sup> |
| | Has…ever breastfed? | |
| | Is…currently being breastfed? | |
| | Was…breastfed when…first came home from hospital? | |
| | Has…ever been given infant formula regularly? | |
| | At what age was…first given infant formula regularly? | |
| | Has…ever been given cow’s milk regularly? | |
| | At what age was…first given cow’s milk regularly? | |
| | Apart from breast milk/ infant formula/ cow’s milk has…ever been given any other type of milk substitute on a regular basis? | |
| | What type of milk substitute did…have? | |
| | At what age was…first given (this/ any of these) milk substitute regularly? | |
| | (If less than six months) Has…ever been given solid food? | |
| | At what age was…first given solid food regularly? | |
| | Including time of weaning, what is the total time…was breastfed? | |
| | What was the main reason you stopped breastfeeding…? | |
| | Has [child] ever been fed any breast milk? | |
| | Can I ask you to comment on the MAIN reasons why you chose to feed [child] breast milk? | |
| | o Breast milk better for baby | |
| | o Breastfeeding better for Mum | |
| | o Breastfeeding cheaper | |
| | o More convenient | |
| | o It is the "right"/ normal/ natural thing to do | |
| | o Child’s father wanted you to breastfeed | |
| | o Family and friends advised breastfeeding | |
| | o Hospital staff pressured me into it | |
| | o Bonding with baby | |
| | o Other (specify) | |
| | o Can’t remember | |
| | o Refused to answer | |
| | 2003 Infant Nutrition Survey<sup>42</sup>  
2003 Child Health Survey<sup>43</sup>  
2003 Infant Nutrition Survey<sup>47</sup> | |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• How old was he/she when he/she was last fed breastmilk?</td>
<td>2003 Child Health Survey(^4^3)</td>
</tr>
<tr>
<td></td>
<td>• Can I ask you to comment on the MAIN reasons why you stopped feeding [child] breastmilk when you did?</td>
<td>2003 Infant Nutrition Survey(^4^4)</td>
</tr>
<tr>
<td></td>
<td>o Returned to work</td>
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<tr>
<td></td>
<td>o Child old enough to stop</td>
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<tr>
<td></td>
<td>o Child self-weaned – prefers bottle/ cup</td>
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<td></td>
<td>o Child teething</td>
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<td></td>
<td>o Sore/ cracked nipples, painful breasts</td>
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<tr>
<td></td>
<td>o Baby health reasons (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Mother health reason incl. Mastitis (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Pregnant with next child</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o No milk or not enough milk</td>
<td></td>
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<tr>
<td></td>
<td>o Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Can’t remember</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Refused to answer</td>
<td></td>
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<tr>
<td></td>
<td>• Have you had any problems with breastfeeding [child] as any time?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What sort of problems did you experience?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Sore/ cracked nipples/ painful breasts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o No milk or not enough milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Problems with attachment</td>
<td></td>
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<tr>
<td></td>
<td>o Too much milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Low weight gain baby</td>
<td></td>
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<td></td>
<td>o Baby poor or fussy feeder/ breast refusal</td>
<td></td>
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<tr>
<td></td>
<td>o Baby health reason eg short tongue/ tongue-tie etc (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Mother health reason incl. Mastitis (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Can’t remember</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Refused to answer</td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Breastfeeding (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Breastfeeding rate (cont) | • Has [child] ever regularly gone to bed or to sleep at night with a bottle? By regularly I mean at least several times per week.  
• What is or was usually in the bottle?  
  o Formula  
  o Plain cow’s milk/ soy milk  
  o Breast milk  
  o Flavoured, condensed, sweetened milk or milo  
  o Fruit juice  
  o Cordial  
  o Soft drink  
  o Water  
  o Other (specify)  
  o Nothing in bottle  
  o Don’t know  
  o Refused to answer  
• At what aged did [child] stop going to bed at night with a bottle? | 2003 Infant Nutrition Survey[^42]  |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Breastfeeding rate (cont) | - Has [child] ever been given infant formula at least once a day, either solely or in addition to breastmilk?  
- From what age was [child] given infant formula at least once a day?  
- How do you or did you normally warm the formula? Was it…  
  - In a pot of boiled water  
  - In a pot of hot water from the tap  
  - In the microwave or did you  
  - Make it using hot water just before giving it to him/her  
  - Didn’t/ don’t heat formula  
  - Other  
  - Can’t remember  
  - Refused  
- Had you decided whether you wanted to breastfeed or formula feed [child] before he/she was born?  
- Can I ask you to comment on the MAIN reason why [child] was formula fed?  
  - Too busy to breastfeed  
  - Formula just as good for baby  
  - Bottle feeding easier  
  - Don’t like breastfeeding  
  - Child’s father prefers bottle feeding  
  - Friends/ relatives advised bottle feeding  
  - Needed to return to work  
  - Previous problems with breastfeeding  
  - Medical advice  
  - Other  
  - Can’t remember  
  - Refused to answer  
- And what was your decision, breastfeeding or formula feeding?  
  - Breastfeed  
  - Formula feed  
  - Can’t remember  
  - Refused                                                                                                                                                                                                                                                                   | 2003 Infant Nutrition Survey\(^4\)  
  2003 Child Health Survey\(^5\)  
  2003 Infant Nutrition Survey\(^4\) |
Table 4: Breastfeeding (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Attitudes towards breastfeeding | - How important do you think it is for mothers to breastfeed their babies? Do you think it is:  
  o Not at all important  
  o Not very important  
  o Somewhat important  
  o Very important  
 - What do you think are the benefits of breastfeeding for babies?  
 - How long do you think mothers should breastfeed their babies?  
 - What things do you think make it difficult for women to continue to breastfeed their babies for at least six months?  
 - Do you think it is acceptable for women to breastfeed their babies in public places such as:  
  o Shopping centres  
  o Workplaces  
  o Restaurants  
  o On public transport  
 - (If not acceptable) Would it be acceptable if a room was provided for women to breastfeed their babies in:  
  o Shopping centers  
  o Workplaces  
  o Restaurants  
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2. Attitudes towards breastfeeding (cont)</strong></td>
<td></td>
<td>Health Monitor September 2002&lt;sup&gt;29&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• How important do you think it is for babies to be breastfed?</td>
<td></td>
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<tr>
<td></td>
<td>o Not at all important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Not very important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Somewhat important</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Very important</td>
<td></td>
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<tr>
<td></td>
<td>• What age do you think a breastfed baby should be when they are first given fluids (apart from breastmilk, for example water, juice, formula)?</td>
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<td></td>
<td>• What aged do you think a breastfed baby should be when they are first given solids (for example rice cereal, mashed pumpkin)?</td>
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<td></td>
<td>• For what length of time do you think a baby should be breastfed?</td>
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<td></td>
<td>• Have you ever breastfed a baby for longer than 6 months?</td>
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<tr>
<td></td>
<td>• Strongly agree/ slightly agree/ neither/ slightly disagree/ strongly disagree:</td>
<td>Infant Feeding Survey 1997&lt;sup&gt;30&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>o Bottle feeding is more convenient for the mother</td>
<td></td>
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<tr>
<td></td>
<td>o Bottle feeding means that anyone can feed the baby</td>
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<td></td>
<td>o Men in particular are bothered by breastfeeding in public</td>
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<td></td>
<td>o A mother’s partner will influence the feeding choice</td>
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<td></td>
<td>o Bottle feeding is more acceptable in public places.</td>
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<td></td>
<td>o There’s not always a place to breastfeed when outside the home</td>
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<td>o Health professionals look down at a mother if she bottle feeds her baby</td>
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<td></td>
<td>o A mother will need to bottle feed her baby which she returns to work</td>
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</table>
### Table 4: Breastfeeding (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Attitudes towards breastfeeding (cont)</td>
<td>• How old is your youngest child?</td>
<td>Infant Feeding Survey 1997[^30] - For mothers only of children under the age of 12 months</td>
</tr>
<tr>
<td></td>
<td>• Is the child a twin, triplet or quad?</td>
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<tr>
<td></td>
<td>• Before you actually fed this baby how did you plan to feed your baby during the first six months?</td>
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<tr>
<td></td>
<td>○ Fully/ mainly bottle fed</td>
<td></td>
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<tr>
<td></td>
<td>○ Fully/ mainly breastfed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Equal breast and bottle</td>
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<tr>
<td></td>
<td>• What was your MAIN reason for deciding to bottle feed your baby?</td>
<td></td>
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<tr>
<td></td>
<td>• What was your MAIN reason for deciding to breastfeed your baby?</td>
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<td></td>
<td>• When did you finally decide on how to feed your baby in the first 6 months?</td>
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<td></td>
<td>○ Before becoming pregnant</td>
<td></td>
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<tr>
<td></td>
<td>○ At the beginning of the pregnancy</td>
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<tr>
<td></td>
<td>○ In the middle of the pregnancy</td>
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<tr>
<td></td>
<td>○ Towards the end of the pregnancy</td>
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<tr>
<td></td>
<td>○ At the birth</td>
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<tr>
<td></td>
<td>○ After the birth</td>
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<tr>
<td></td>
<td>• Who or what was the MAIN influence that helped you decide how you would feed you baby?</td>
<td></td>
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<tr>
<td></td>
<td>• How was your youngest child actually fed during the first 6 months?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Fully/ mainly bottle fed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Fully/ mainly breastfed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Equal breast and bottle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Where or from whom did you seek help or advice about feeding that was useful?</td>
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<tr>
<td></td>
<td>• In the first six months (or less) did you have any problems feeding your baby that made you seek help or advice?</td>
<td></td>
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<tr>
<td>Indicator</td>
<td>Question</td>
<td>Survey</td>
</tr>
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</tr>
</tbody>
</table>
| 2. Attitudes towards breastfeeding (cont) | - Could you please tell me in general, how comfortable did you feel (or would you feel) while breastfeeding in the following situations:  
  o In front of others in your own home?  
  o In someone else’s home?  
  o In front of other female friends/relatives?  
  o In front of male friends/relatives?  
  o In a public eating place?  
  o In a park/ at the beach?  
  o On public transport?  
  o In a shopping mall?  
  - What is the main alternative you could have used instead of breastfeeding in front of others?  
  - Are you still breastfeeding?  
  - At what age was your child when breastfeeding stopped?  
  - What was the MAIN reason for stopping breastfeeding?  
  - How successful do you feel about your breastfeeding?  
    o Very successful  
    o Successful  
    o Not successful  
  - Other than the youngest child how many other children do you have?  
  - How was the second youngest child fed during the first six months?  
    o Fully/mainly bottle fed  
    o Fully/mainly breastfed  
    o Equal breast and bottle | Infant Feeding Survey 1997[^10]  
- For mothers only of children under the age of 12 months |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Attitudes towards breastfeeding (cont)                                 | • Other than this pregnancy, how many children do you have?  
  • How was your youngest child fed during the first six months?  
    o Fully/ mainly bottle fed  
    o Fully/ mainly breastfed  
    o Equal breast and bottle  
  • How successful did you feel about your breastfeeding?  
    o Very successful  
    o Successful  
    o Not successful  
  • The following questions relate to your current pregnancy. How many months pregnant are you?  
  • Have you decided how you would like to feed the new baby?  
  • At this stage how do you plan to feed your baby during the first six months?  
    o Fully/ mainly bottle fed  
    o Fully/ mainly breastfed  
    o Equal breast and bottle  
  • What is your MAIN reason for deciding to bottle feed your baby?  
  • What is your MAIN reason for planning to breastfeed your baby?  
  • When did you decide on how to feed this new baby during the first six months?  
    o Before becoming pregnant  
    o At the beginning of the pregnancy  
    o In the middle of the pregnancy  
    o Towards the end of the pregnancy  
    o At the birth  
    o After the birth                                                                                                    | Infant Feeding Survey 1997<sup>30</sup>  
  - For women pregnant with her first or subsequent child                                                                  |
Table 4: Breastfeeding (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| Breastfeeding (cont) | - Who or what was the MAIN influence that helped you decide how you would feed your baby?  
- Where or from whom would you seek help or advice about feeding?  
- I am now going to read out a list of places or situations.  
  - Firstly, in front of others in your own home?  
  - In someone else’s home?  
  - In front of other female friends/relatives?  
  - In front of male friends/relatives?  
  - In a public eating place?  
  - In a park/at the beach?  
  - On public transport?  
  - In a shopping mall?  
  - What is the MAIN alternative you would use instead of breastfeeding in front of others?  
- Have you ever breastfed?  
- How successful did you feel about your breastfeeding?  
  - Very successful  
  - Successful  
  - Not successful  
- How do you think babies should be fed during the first six months?  
  - Fully/mainly bottle fed  
  - Fully/mainly breastfed  
  - Equal breast and bottle  
- I am now going to ask some questions about your grandchild who is aged less than 12 months. If you have more than one grandchild aged less than 12 months please answer the question in relation to the grandchild who lives closest to you.  
  - How old is this grandchild?  
  - Is this your daughter’s child or your son’s child?  
  - Were you involved in discussing how your grandchild would be fed during the first six months? | Infant Feeding Survey 1997<sup>30</sup>  
- For women pregnant with her first or subsequent child  
Infant Feeding Survey 1997<sup>30</sup>  
- For grandmothers only |
Table 4: Breastfeeding (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Attitudes towards breastfeeding (cont) | - How did you daughter’s/ son’s partner plan to feed your grandchild during the first six months?  
  o Fully/ mainly bottle fed  
  o Fully/ mainly breastfed  
  o Equal breast and bottle  
 - What was the MAIN reason for your daughter/ son’s partner deciding to bottle feed your grandchild?  
 - What was the MAIN reason for your daughter/ son’s partner deciding to breastfeed your grandchild?  
 - How is or was your youngest grandchild actually fed during the first six months?  
 - How did you daughter’s/ son’s partner plan to feed your grandchild during the first six months?  
  o Fully/ mainly bottle fed  
  o Fully/ mainly breastfed  
  o Equal breast and bottle  
 - Where or from whom did you suggest to your daughter/ son’s partner to seek help or advice about feeding that was useful?  
 - Did your daughter/ son’s partner have any problems feeding your grandchild that made her seek help or advice?  
 - In general, how comfortable do you feel about your daughter or son’s partner breastfeeding in each of the following situations:  
  o In front of others in your own home?  
  o In someone else’s home?  
  o In front of other female friends/ relatives?  
  o In front of male friends/ relatives?  
  o In a public eating place?  
  o In a park/ at the beach?  
  o On public transport?  
  o In a shopping mall? | Infant Feeding Survey 1997  
- For grandmothers only |
### Table 4: Breastfeeding (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Attitudes towards breastfeeding (cont)</td>
<td></td>
<td>Infant Feeding Survey 1997&lt;sup&gt;30&lt;/sup&gt; - For grandmothers only</td>
</tr>
<tr>
<td></td>
<td>● What is the MAIN alternative you would suggest to breastfeeding in front of others?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Is your grandchild still being breastfed?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● At what age was your grandchild when breastfeeding stopped?</td>
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<tr>
<td></td>
<td>● What was the MAIN reason for stopping breastfeeding?</td>
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<td></td>
<td>● Overall, how would you describe your relationship with this daughter/ son’s partner?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Very good</td>
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<td></td>
<td>o Good</td>
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<tr>
<td></td>
<td>o Average</td>
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<td></td>
<td>o Not good</td>
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<tr>
<td></td>
<td>● Have you ever breastfed?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● How successful did you feel about your breastfeeding?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● How do you think babies should be fed during the first six months?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Fully/ mainly bottle fed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Fully/ mainly breastfed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Equal breast and bottle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● I am now going to ask some questions about your approaching grandchild. If you have more than one daughter or son’s partner who is pregnant please answer the question in relation to the pregnancy which is geographically closest to you.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Is this your daughter’s child or your son’s child?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● The following questions relate to your daughter’s/ son’s partner’s pregnancy. How many months pregnant is she?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Have you been involved in discussing how your grandchild would be fed during the first six months?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● How does our daughter/ son’s partner plan to feed your grandchild during the first six months?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● What is the MAIN reason for your daughter/ son’s partner deciding to bottle feed your grandchild?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● What is the MAIN reason for your daughter/ son’s partner deciding to breastfeed your grandchild?</td>
<td></td>
</tr>
</tbody>
</table>

Infant Feeding Survey 1997<sup>30</sup> - For grandmothers-to-be only
Table 4: Breastfeeding (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Attitudes towards breastfeeding (cont) | - Where or from whom would you suggest to your daughter/son’s partner to seek help or advice about feeding?  
- I am now going to read out a list of places or situations. Could you please tell me in general, how comfortable would you feel about your daughter or son’s partner breastfeeding in each of the following situations:  
  o In front of others in your own home?  
  o In someone else’s home?  
  o In front of other female friends/relatives?  
  o In front of male friends/relatives?  
  o In a public eating place?  
  o In a park/at the beach?  
  o On public transport?  
  o In a shopping mall?  
- What is the MAIN alternative you would suggest to breastfeeding in front of others?  
- Overall how would you describe your relationship with this daughter/son’s partner?  
  o Very good  
  o Good  
  o Average  
  o Not good  
- The following questions relate to your youngest child. If you have twins or triplets the following questions relate to the last born. How old is your youngest child?  
- How do you think babies should be fed during the first six months?  
- Were you involved in deciding how your baby would be fed during the first six months?  
- Before this baby was actually fed, how did you plan your youngest child would be fed during the first 6 months?  
- What was your MAIN reason for deciding your baby would be bottle fed?  
- What was your MAIN reason for deciding your baby would be breastfed?  
- When did you finally decide on how your youngest child would be fed during the first 6 months?  
- Who or what was the MAIN influence that helped you decide how your baby would be fed? This could be from any source. | Infant Feeding Survey 1997[^30]  
- For grandmothers-to-be only                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

[^30]: Infant Feeding Survey 1997 - For fathers of children aged under 12 months only
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Attitudes towards breastfeeding (cont) | - How is (or was) your baby actually fed during the first six months?  
- Where or from whom did you suggest she seek help or advice about feeding that was useful? This could be from any source.  
- Did your partner have any problems feeding your baby that made her seek help or advice?  
- I am now going to read out a list of places or situations. Could you please tell me in general, how comfortable would you feel (or you would feel) about your partner breastfeeding in each of the following situations:  
  - In front of others in your own home?  
  - In someone else’s home?  
  - In front of other female friends/relatives?  
  - In front of male friends/relatives?  
  - In a public eating place?  
  - In a park/at the beach?  
  - On public transport?  
  - In a shopping mall?  
- What is the MAIN alternative you would suggest to breastfeeding in front of others?  
- Is your child still being breastfed?  
- At what age was your child when breastfeeding stopped?  
- What was the MAIN reason for stopping breastfeeding?  
- Overall how would you describe your relationship with your partner? | Infant Feeding Survey 1997  
- For fathers of children aged under 12 months only |
### Table 4: Breastfeeding (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Attitudes towards breastfeeding (cont) | - Other than this pregnancy how many other children do you have? (own children only)  
- How was the youngest child fed during the first six months?  
- How do you think babies should be fed during the first six months?  
- The following questions relate to your partner’s current pregnancy.  
  o How many months pregnant is she?  
- Are you involved in deciding how your baby will be fed during the first six months?  
- When did you decide on how this new baby would be fed?  
- Who or what was the MAIN influence that helped you decide how your baby would be fed? This could be from any source.  
- How does your partner plan to feed your baby during the first six months?  
- What is the MAIN reason for deciding your baby would be bottle fed?  
- What is the MAIN reason for deciding your baby would be breastfed?  
- Where or from whom would you suggest your partner seek help or advice about feeding? This could be from any source.  
- I am now going to read out a list of places or situations. Could you please tell me in general, how comfortable would you feel (or you would feel) about your partner breastfeeding in each of the following situations:  
  o In front of others in your own home?  
  o In someone else’s home?  
  o In front of other female friends/relatives?  
  o In front of male friends/relatives?  
  o In a public eating place?  
  o In a park/at the beach?  
  o On public transport?  
  o In a shopping mall?  
- What is the MAIN alternative you would suggest to breastfeeding in front of others?  
- Overall how would you describe your relationship with your partner? | Infant Feeding Survey 1997[^10]  
- For fathers-to-be |
### Table 4: Breastfeeding (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Attitudes towards breastfeeding (cont)</td>
<td></td>
<td>Infant Feeding Survey 1997&lt;sup&gt;30&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>• Strongly agree/ slightly agree/ neither/ slightly disagree/ strongly disagree:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A mother needs lots of support to breastfeed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastfeeding doesn’t come naturally – it needs to be learned</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A mother’s decision to breastfeed her second child is based on her breastfeeding experience with her first child</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A mother can get sore breasts and nipples from breastfeeding</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A mother feels uncomfortable breastfeeding in front of others</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A mother’s decision to breastfeed in influenced by what she sees others do</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A mother’s mother has a lot of influence on the feeding management of the baby</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A father can join in more with the care of a bottle fed baby</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A father can feel left out if the mother breastfeeds their baby</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A father does not like his partner to breastfeed in front of others</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o There’s not enough time to learn how to breastfeed while still in hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Health professionals don’t always support a mother in what she wants to do</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Health professionals are very rigid in what they tell another about feeding their baby</td>
<td></td>
</tr>
<tr>
<td>3. Reasons for and against breastfeeding</td>
<td></td>
<td>NSW 2001 Child Health Survey&lt;sup&gt;37&lt;/sup&gt; - Aged 0-2 years</td>
</tr>
<tr>
<td></td>
<td>• What were the main reasons you decided to breastfeed [child]?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breast milk is better for the baby</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastfeeding is more convenient</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastfeeding is cheaper</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastfeeding helps prevent allergies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastfeeding helps prevent weight loss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Breastfeeding is the right thing to do</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o [Child’s] father wanted you to breast feed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Other people advised you to breastfeed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Any other reason (specify)</td>
<td></td>
</tr>
</tbody>
</table>

1998 Health Goals and Targets Health Priority Areas Survey<sup>31</sup> - Asked of mothers who had given birth in the last three years in relation to her youngest child who was aged six months or older
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 4. Experience of infant feeding | - Do you see or visit (once a month or more) any family members or friends who have babies less than 6 months old?  
- How are they fed?  
- In the last 12 months have you ever seen or heard any media articles about breastfeeding?  
- Overall, do you think they were for or against breastfeeding?  
| 5. Information on breastfeeding | - Overall, how satisfied were you with the practical support and assistance with feeding your baby given to you at the hospital when [child] was born?  Were you…  
  - Very satisfied  
  - Satisfied  
  - Dissatisfied  
  - Very dissatisfied  
  - Neither satisfied or dissatisfied  
  - No support/ assistance given  
  - Can’t remember  
  - Refused  
- Did any health worker offer you information about who to contact if you had problems with feeding your baby when you went home?  
- Was this information given to you while you were in hospital after the birth, at antenatal classes or both?  
  - Antenatal classes  
  - While in hospital  
  - Both  
  - Can’t remember  
  - Refused | 2003 Child Health Survey[^21] |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 5. Information on breastfeeding (cont..) | After you left hospital, did you seek help or support for breastfeeding from any of the following?  
  o Hospital where baby was born  
  o Local Community or Child Health Centre  
  o GP or specialist  
  o During home visit by nurse or midwife  
  o Nursing Mother Assoc or the Aust Breastfeeding Assoc  
  o Private lactation counselor  
  o Pharmacy/ pharmacist  
  o Family or friends  
  o Anywhere else (specify) | 2003 Child Health Survey\(^{43}\) |
CHAPTER 7: HEALTHY PREGNANCY
7.1 Relevance of Healthy Pregnancy

A range of factors influence successful pregnancy. These include folate, iron and calcium intakes as well as weight gain and smoking. It has been found that an adequate folate intake during the month before pregnancy and the first three months of pregnancy can significantly reduce the risk of neural tube defects\textsuperscript{66}. Evidence suggests that folate intake may also reduce the risk of low birth weight, cleft palate, Downs Syndrome and congenital heart disease\textsuperscript{3}.

Iron and calcium are also important nutritional requirements during pregnancy and lactation\textsuperscript{3}. Iron deficiency anaemia is associated with a higher risk of preterm births, low birth weight and delays in infant and child development\textsuperscript{20}. However, the iron and calcium intakes of women of childbearing age have not been monitored beyond analysing the dietary intakes from food frequency questionnaires and 24 hour dietary records in surveys such as the 1995 NNS\textsuperscript{24}.

7.2 International Indicators

7.2.1 United States

| Folate intake |

Questions relating to the above indicator have been asked in the BRFSS\textsuperscript{53}, and include intake of vitamin supplements, frequency of intake and the folic acid content of the supplements. The relevant questions are presented in Table 5, Section 1.

| Awareness of folate recommendations |

The BRFSS\textsuperscript{53} also asked questions relating to awareness of the recommendations for folate intake. The questions are in Table 5, Section 3.

7.3 Australian Indicators

The following indicators are recommended by Abraham and Webb\textsuperscript{67} as indicators of folate intake in women of childbearing age.
The intentional intake of folate by women aged 18-49 was surveyed in the 2001 NHS 25. Women were questioned about their folate intake in the previous two weeks, concerning the following areas:
Healthy pregnancy

- Consumption of folate-enriched foods;
- Consumption of folate-enriched beverages; and
- Consumption of vitamins/minerals containing folate. (Table 5, Section 2)

7.4 Other Australian States’ Indicators

7.4.1 New South Wales

**Folate intake**

The 2001 Child Health Survey\(^{37}\) asked several questions of mothers with children aged less than twelve months, relating to folate intake in pregnancy. These questions included supplementary and natural intake during the previous month and first three months of pregnancy and the motive for folate intake during this period (Table 5, Section 1).

**Awareness of folate recommendations**

Questions relating to an awareness of the recommendations for folate intake were asked in the 2001 Child Health Survey\(^{37}\) (Table 5, Section 3).

7.4.2 Queensland

The 2001 Omnibus Survey\(^{39}\) asked questions relating to vitamin supplement intake, although these questions were not asked specifically of women of child bearing age, and did not have a specific focus on folate intake (Table 5, Section 1).

7.4.3 Western Australia

The 2002 Benchmark Vegetable and Fruit Consumption Survey\(^{48}\) asked two questions on vitamin supplement intake, including folate supplements, and reasons for consumption (Table 5, Section 1).
7.5 South Australian Indicators

**Folate intake**

SAMSS$^{28}$, the Folate Survey in 2001$^{34}$ and the 1998 Health Goals and Targets Health Priority Areas Survey$^{31}$ asked questions relating to folate intake in the month before becoming pregnant and the first three months of pregnancy. In particular, these questions asked about intake of folate supplements, cereals enriched with folic acid and foods rich in folic acid. These questions were asked of female respondents who were pregnant or had given birth in last three years (Table 5, Section 1).

**Awareness of folate recommendations**

SAMSS$^{28}$, the Folate Survey in 2001$^{34}$, the 1998 Health Goals and Targets Health Priority Areas Survey$^{31}$ and the Health Monitor$^{29}$ in October 1999 asked questions relating to awareness of folate intake recommendations and the prevention of spina bifida. In addition, the Health Monitor$^{29}$ in October 1999 asked about how the information had influenced behaviour and sources of folate information (Table 5, Section 3).

**Alcohol and pregnancy**

SAMSS$^{28}$ and the Folate Survey in 2001$^{34}$ asked one question relating to the safety of drinking alcohol during pregnancy, including how many drinks the respondent considers to be safe for pregnant women to consume. The questions are presented in Table 5, Section 4.

**Proportion of low birth-weight babies**

SA Health Goals and Targets – Health Monitoring Indicators$^{56}$ recommends the above as an indicator of healthy pregnancy.


**Table 5: Healthy Pregnancy**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Folate intake | • Do you currently take any vitamin pills or supplements?  
• Are any of these a multivitamin?  
• Do any of the vitamin pills or supplements you take contain folic acid?  
• How often do you take this pill or vitamin supplement?  
• Did you take tablets or capsules containing folate or folic acid in the month immediately before and/or in the first three months of pregnancy?  
• What prompted you to take folate or folic acid tablets or capsules?  
• Thinking back to when you were pregnant with [child], did you change the food you ate to increase folate or folic acid intake in the month immediately before and/or in the first three months of pregnancy?  
• Did you take any vitamin or mineral supplement yesterday, in tablet, capsule or drop form?  
• What type of supplement did you take?  
• Do you take any of the following vitamins and/or minerals on a regular basis?  
  o Multivitamins  
  o Vitamin C  
  o Calcium  
  o Vitamin B Complex  
  o Iron  
  o Folate (folic acid)  
  o Other  
• If so, why do you take these supplements | BRFSS\(^{53}\)  
NSW Child Health Survey 2001\(^{37}\)  
- Asked if child aged 0-11 months and respondent is mother  
2001 Omnibus Survey\(^{39}\)  
2002 Benchmark Vegetable and Fruit Consumption Survey\(^{48}\) |
### Table 5: Healthy Pregnancy (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Folate intake (cont) | ● In the month before you became pregnant the last time, did you do any of the following:  
  ○ Took folic acid tablets every day  
  ○ Ate cereal specially enriched with folic acid every day  
  ○ Increased your intake of foods rich in folate or folic acid, such as green leafy vegetables, cereal and fruits  
  ○ None  
  ○ Not sure  
  ● In the first three months of your current or most recent pregnancy, did you do any of the following:  
  ○ Took folic acid tablets every day  
  ○ Ate cereal specially enriched with folic acid every day  
  ○ Increased your intake of foods rich in folate or folic acid, such as green leafy vegetables, cereal and fruits  
  ○ None  
  ○ Not sure  
  ● If you ate cereals specially enriched with folic acid, what was the brand name?  
  ○ Weetbix  
  ○ Sultana Bran  
  ○ Allbran  
  ○ Nutrigrain  
  ○ Cornflakes  
  ○ Special K  
  ○ Other (specify) | SAMSS²⁸  
Folate and Spina Bifida 2001³⁴  
1998 Health Goals and Targets Health Priority Areas Survey²¹ |
| 2. The intentional intake of folate by women aged 18-49 | ● In the last 2 weeks have you eaten any food products because they had folate added to them?  
● In the last 2 weeks did you drink any beverages because they had folate added to them?  
● In the last 2 weeks have you taken any vitamin or mineral supplements because they contained folate or folic acid? | 2001 National Health Survey²⁵ |
### Table 5: Healthy Pregnancy (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Some health experts recommend that women take 400μ of the B vitamin folic acid, for which one of the following reasons:</td>
<td>BRFSS³³</td>
</tr>
<tr>
<td></td>
<td>o To make strong bones</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o To prevent birth defects</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o To prevent high blood pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Some other reason</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Did you take tablets or capsules containing folic acid in the month immediately before and/or in the first three months of this pregnancy?</td>
<td>NSW Child Health Survey 2001³⁷</td>
</tr>
<tr>
<td></td>
<td>What prompted you to take folate or folic acid tablets or capsules?</td>
<td>- Asked if child aged 0-11 months and respondent is mother</td>
</tr>
<tr>
<td></td>
<td>Thinking back to when you were pregnant with (child), did you change the food you ate in the month immediately before and/or in the first three months of this pregnancy?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What foods do you think contain folic acid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Women are advised to take additional folic acid prior to and during pregnancy. Do you know the main reason for this?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spina bifida is a spinal defect present at birth. Can you tell me which ONE of the following may prevent spina bifida if enough is taken by the mother:</td>
<td>SAMSS²⁸</td>
</tr>
<tr>
<td></td>
<td>o Vitamin A</td>
<td>2001 Folate and Spina Bifida³⁴</td>
</tr>
<tr>
<td></td>
<td>o Folate (folic acid, a B group vitamin)</td>
<td>1998 Health Goals and Targets Health Priority Areas Survey³¹</td>
</tr>
<tr>
<td></td>
<td>o Other B group vitamins (B1, B2, B5, B6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Vitamin C (ascorbic acid)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Vitamin D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do you know when folic acid needs to be taken by a woman to reduce her chance of having a baby with spina bifida</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o During the menstrual period</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Before pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Before pregnancy and in the first three months of pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o In the first three months of pregnancy only</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o In the first six months of pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Throughout pregnancy</td>
<td></td>
</tr>
<tr>
<td>Indicator</td>
<td>Question</td>
<td>Survey</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------</td>
</tr>
</tbody>
</table>
| 3. Awareness of folate recommendations (cont)  | - Have you heard of folic acid or folate?  
- Do you know why it is important for women of childbearing age to consume foods or supplements containing folic acid or folate?  
- How did you find out about folic acid or folate and its benefits?  
- How has this information you received about folate influenced the foods you choose to eat?  
  ○ It has encouraged me to eat foods containing folate  
  ○ It has discouraged me to eat foods containing folate  
  ○ It has had no effect on the foods I choose to eat  
  ○ It has encouraged me to take a supplement  
- If this information has encouraged you to eat more foods containing folate, please rank the following sources of information from 1-3 in terms of which has influenced your eating behaviour the most:  
  ○ Education (pamphlet, magazine, poster, doctor, chemist, radio, school)  
  ○ Advertising in supermarkets or elsewhere on food products  
  ○ Messages on food labels  
- There are three types of messages that may appear on food labels. We are interested to know which ones you have noticed.  
  ○ Have you seen a message about whether the food has added folate?  
  ○ Which foods did you see it on?  
  ○ Did it influence your purchase of the food?  
- Have you seen a message about the amount of folate the food contains?  
  ○ Which foods did you see it on?  
  ○ Did it influence your purchase of the food?  
- Have you seen health messages linking folate to reduced risk of birth defects like spina bifida?  
  ○ Which foods did you see it on?  
  ○ Did it influence your purchase of the food? |
<p>|                                               |                                                                                                                                                                                                                                                                                                                                       | Health Monitor October 1999 [29]                    |</p>
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 4. Alcohol and pregnancy          | • Which of the following statements best describes the amount of alcohol that you consider is safe for pregnant women to drink?  
  o Pregnant women shouldn’t drink any alcohol  
  o Pregnant women should not drink more than one standard drink on any one day  
  o Pregnant women should not drink more than two standard drinks per day on five days of the week  
  o Pregnant women can drink more than two standard drinks per day on five days or more of the week  
  o Other | SAMSS<sup>28</sup>  
2001 Folate and Spina Bifida Survey<sup>34</sup> |
8.1 Relevance of Nutrition for Infants and Young Children

8.1.1 Nutrition

The nutritional requirements for children differ from those of adults. It is therefore necessary to develop questions that relate to the specific needs of children, rather than including children in surveys that have been developed for adults. Recommendations for healthy eating are made in the NH&MRC Dietary Guidelines for Children and Adolescents and are listed in Chapter 2.

8.1.2 Weight status

Growth is an indicator of nutritional status in infancy and childhood. Growth stunting and wasting are uncommon in the general population, but more common in populations such as Aboriginal children and those of low socioeconomic status. Monitoring these populations would give an indication of their nutritional status. The Health Information Centre recommends that growth assessment in children is the most effective definition of child health and nutritional status.

Childhood obesity is becoming increasingly prevalent in Australia. The 1995 National Nutrition Survey found that the prevalence of obesity in children aged 12-15 was 6.8%, and that 23% of children in the age group were at risk of becoming overweight. Obesity in childhood leads to an increased risk of overweight and obesity in adulthood, as well as an increase in the risk of developing diseases such as cardiovascular disease, diabetes and hypertension.

Standard measures of adult weight status do not apply to children, because in childhood BMI changes with age. It is therefore necessary to determine a measure that is applicable for children. Age-related reference charts are used in general practice, hospitals and clinics, to assess BMI in children aged over the age of 2 years and adolescents (Figure 1). These charts are derived from measurements of United States children. A BMI greater than the 85th percentile is considered overweight and a BMI greater than the 95th percentile is classified as obese.
When used on a population basis, the classification developed by Cole et al\textsuperscript{70} is recommended for children aged 2 years and over. The use of the Cole et al\textsuperscript{70} is also described by the National Health Data Dictionary\textsuperscript{2} and both the use of charts\textsuperscript{69} and the classification of Cole et al\textsuperscript{70} are supported by the NH&MRC Dietary Guidelines for Children and Adolescents\textsuperscript{6}.
### Body Mass Index classification for children\textsuperscript{70}

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Males</th>
<th>Females</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>18.41</td>
<td>18.02</td>
<td>20.09</td>
<td>19.81</td>
</tr>
<tr>
<td>3</td>
<td>17.89</td>
<td>17.56</td>
<td>19.57</td>
<td>19.36</td>
</tr>
<tr>
<td>4</td>
<td>17.55</td>
<td>17.28</td>
<td>19.29</td>
<td>19.15</td>
</tr>
<tr>
<td>5</td>
<td>17.42</td>
<td>17.15</td>
<td>19.30</td>
<td>19.34</td>
</tr>
<tr>
<td>6</td>
<td>17.55</td>
<td>17.34</td>
<td>19.78</td>
<td>19.65</td>
</tr>
<tr>
<td>7</td>
<td>17.92</td>
<td>17.75</td>
<td>20.63</td>
<td>20.51</td>
</tr>
<tr>
<td>8</td>
<td>18.44</td>
<td>18.35</td>
<td>21.60</td>
<td>21.57</td>
</tr>
<tr>
<td>9</td>
<td>19.10</td>
<td>19.07</td>
<td>22.77</td>
<td>22.81</td>
</tr>
<tr>
<td>10</td>
<td>19.84</td>
<td>19.86</td>
<td>24.00</td>
<td>24.11</td>
</tr>
<tr>
<td>11</td>
<td>20.55</td>
<td>20.74</td>
<td>25.10</td>
<td>25.42</td>
</tr>
<tr>
<td>12</td>
<td>21.22</td>
<td>21.68</td>
<td>26.02</td>
<td>26.67</td>
</tr>
<tr>
<td>13</td>
<td>21.91</td>
<td>22.58</td>
<td>26.84</td>
<td>27.76</td>
</tr>
<tr>
<td>14</td>
<td>22.62</td>
<td>23.34</td>
<td>27.63</td>
<td>28.57</td>
</tr>
<tr>
<td>15</td>
<td>23.29</td>
<td>23.94</td>
<td>28.30</td>
<td>29.11</td>
</tr>
<tr>
<td>16</td>
<td>23.90</td>
<td>24.37</td>
<td>28.88</td>
<td>29.43</td>
</tr>
<tr>
<td>17</td>
<td>24.46</td>
<td>24.70</td>
<td>29.41</td>
<td>29.69</td>
</tr>
<tr>
<td>18</td>
<td>25</td>
<td>25</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

#### 8.2 International Indicators

- **Low weight-for-height (wasting or thinness)**
- **High weight-for-height (overweight)**
- **Low height-for-age (stunting)**
- **Low weight-for-age**

The World Health Organization recommends the above indicators of child nutrition, in the *WHO Global Database of Child Growth and Malnutrition* for children under 5 years old\textsuperscript{71}.
8.2.1 United States

NHANES\textsuperscript{51} has asked several questions about the supply of food in school or about children aged 4-19 years old. Questions include frequency of consumption of school lunches, the cost of lunches, supply and cost of breakfast in schools and frequency of consumption of school breakfasts (Table 6, Section 10). A core food security module has also been developed in the United States by the US Drug Administration\textsuperscript{72}. These questions have been used across a variety of cultures and are further described in Chapter 10.

8.3 Australian Indicators

The NH&MRC Dietary Guidelines for Children and Adolescents\textsuperscript{6} and the Recommendations for Monitoring Overweight and Obesity in NSW\textsuperscript{57} recommends the regular monitoring of child growth and weight status. However, monitoring should not be based on self reported data, as this is likely to be unreliable in children\textsuperscript{2,57}.

**Weight status**

The 1995 National Nutrition Survey\textsuperscript{24} measured the weight status of children in terms of z-scores (Table 6, Section 2). A z-score is a derived value which enables comparisons between populations, where $z$-score = (observed value) – (median reference value).

Thus z-scores are standard deviations above or below a mean. As a result, a population can be described statistically and the z-scores can be used as cut-offs.

The Australian Longitudinal Study on Women’s Health\textsuperscript{27} also attempts to determine weight at birth as an indicator of nutrition (Table 6, Section 1).

Potential indicators suggested in *Eat Well Australia: An Agenda for Action for Public Health Nutrition 2000-2010*\textsuperscript{3}:

**Extent children’s diets meet dietary guidelines for children and adolescents**
8.4 Other Australian States’ Indicators

8.4.1 New South Wales

Consumption of vegetables

Questions relating to the number of serves of vegetables the child normally eats per day were asked in the 2001 Child Health Survey and included salad and raw vegetables, cooked vegetables including potatoes and hot chips or french fries (Table 6, Section 3).

Consumption of fruit

Questions relating to the number of serves of fruit the child normally eats per day were asked in the 2001 Child Health Survey and included fresh, canned and dried fruit and consumption of fruit juice (Table 6, Section 4).

Consumption of milk

The 2001 Child Health Survey asked one question on the number of serves of cow’s milk the child has per day (Table 6, Section 5).

Consumption of fruit juice

A question relating to the consumption of fruit juice was asked in the 2001 Child Health Survey (Table 6, Section 7).

Weight status
The NSW Centre for Public Health Nutrition\textsuperscript{57} recommends measuring the weight status of children aged 0-8 in terms of z-scores. It recommends measuring adolescents using age and sex specific percentiles of BMI, using the following cutpoints:

<table>
<thead>
<tr>
<th>Thinness</th>
<th>&lt; 5\textsuperscript{th} percentile BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>At risk of overweight</td>
<td>≥ 85\textsuperscript{th} percentile BMI and &gt; 95\textsuperscript{th} percentile for age and sex (when BMI ≤ 30)</td>
</tr>
<tr>
<td>Overweight</td>
<td>≥ 95\textsuperscript{th} percentile for age and sex or BMI &gt; 30.</td>
</tr>
</tbody>
</table>

**Food security**

The 2001 Child Health Survey\textsuperscript{37} asked questions about food security including whether there were times in the past twelve months that the respondent ran out of food and could not afford to buy any more and how they coped with feeding their child when that happened. In addition, the respondent was asked to respond to several true or false statements regarding food security. See Table 6, Section 12 for details of questions. Food security questions are also detailed in Chapter 10.

**Food service in institutions e.g. child care centers**

**Menus/recipes and catering practices consistent with criteria**

The above indicator is suggested in *Recommendations for Food and Nutrition Monitoring in NSW*\textsuperscript{11} as an indicator of child nutrition. The *Dietary Guidelines for Children and Adolescents in Australia* supports the studies undertaken in NSW, which have suggested that the current recommendation that children receive 50% of recommended dietary intakes while they are in day care should remain\textsuperscript{6}. Thus the food supplied in day care settings must fulfill these criteria.

**8.4.2 Queensland**

**Consumption of vegetables**

Questions relating to the number of serves of vegetables the child normally eats per day were asked in the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42} and included salad, raw vegetables and cooked vegetables including potatoes (Table 6, Section 3).

**Consumption of fruit**
Questions relating to the number of serves of fruit the child normally eats per day were asked in the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42} and included fresh, canned and dried fruit (Table 6, Section 4).

### Consumption of milk

The consumption of cow’s milk and other types of milk were asked in both the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42}. The questions are presented in Table 6, Section 5.

### Consumption of solids

The consumption of solids for children less than five years of age was asked in the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42}. The questions are detailed in Table 6 Section 6.

### Consumption of drinks

The consumption of various drinks other than milk was examined in the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42} (Table 6 Section 7).

### Consumption of junk food

The consumption of junk food was examined in the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42} (Table 6, Section 8).

### Consumption of various other foods

The consumption of various other food and drink items was asked in the 2003 Child Health Survey\textsuperscript{43} and the 2003 Infant Nutrition Survey\textsuperscript{42}. These questions are presented in Table 6, Section 11.

### 8.4.3 Northern Territory

#### Prevalence of wasting, stunting and underweight in children 0-5 years

#### Prevalence of iron deficiency in children 0-5 years

Proportion of children with weights within normal range

The Northern Territory Government have highlighted issues such as those listed above for inclusion in indicator development.18

8.5 South Australian Indicators

Consumption of vegetables

Questions relating to the number of serves of vegetables the child normally eats per day are asked in the SAMSS28 and includes salad and cooked vegetables (Table 6, Section 3).

Consumption of fruit

Questions relating to the number of serves of fruit the child normally eats per day are asked in the SAMSS28 (Table 6, Section 4).

Consumption of junk food

The SAMSS survey28 also asks a question relating to the amount of “junk” food children ate during the week. Foods included were: burgers, pizza, chicken and chips (Table 6, Section 8).

Consumption of water

One question is asked in SAMSS28 relating to the amount of water consumed by children in the past four weeks. The question is detailed in (Table 6, Section 9).

Food security

The SAMSS28 asks questions about food security including whether the respondent had run out of food and could not afford to buy any more, how often this had happened and
how they coped with feeding their child when that happened (Table 6, Section 12). Food security questions are also described in Chapter 10.

### Weight Status

Height and weight information has been collected on four year old children in South Australia. Using the cutoff values developed by Cole et al\textsuperscript{70} as described above, a significant proportion of these children have been shown to be overweight and obese\textsuperscript{73}.
### Table 6: Infants and Young Children

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Birth weight</td>
<td>If you know your weight at birth or can find out (eg ask your mother, or from you full birth certificate), write it here</td>
<td>2000 Australian Longitudinal Study on Women’s Health&lt;sup&gt;27&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. Measured weight status in terms of z-scores</td>
<td>Measured</td>
<td>1995 National Nutrition Survey&lt;sup&gt;24&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
| 3. Consumption of vegetables         | - How many serves of salad vegetables or raw vegetables does [child] usually eat in a day?  
- How many serves of cooked vegetables (including potato) does [child] usually eat in one day?  
- How many serves of hot chips or French fries does [child] usually eat in one day/week  
- How many serves of vegetables does [child’s name] usually eat each day? A ‘serve’ is ½ cup cooked vegetables or 1 cup of salad.  
- How many serves of vegetables, including potato, does [child] usually eat each day, where a ‘serve’ us a quarter cup of cooked vegetables or salad vegetables or 4 vegetable sticks? This included all fresh, dried, frozen and tinned vegetables. | 2001 Child Health Survey<sup>37</sup>  
SAMSS<sup>28</sup>  
2003 Infant Nutrition Survey<sup>42</sup>  
2003 Child Health Survey<sup>43</sup> |
| 4. Consumption of fruit              | - How many serves of fruit does [child] usually eat in a day, including fresh, canned and dried fruit?  
- How many serves of fruit does [child’s name] usually eat each day? A ‘serve’ is 1 medium piece or 2 small pieces of fruit or 1 cup of diced pieces.  
- How many serves of fruit does [child] usually eat each day, where a ‘serve’ is 1 medium piece or 2 small pieces of fruit, a third of a cup of diced pieces or a tablespoon of dried fruit. This included all fresh, dried, frozen and tinned fruit. | 2001 Child Health Survey<sup>37</sup>  
SAMSS<sup>28</sup>  
2003 Infant Nutrition Survey<sup>42</sup>  
2003 Child Health Survey<sup>43</sup> |
- Firstly, has [child] ever been given cow’s milk daily or almost daily? This could be fresh, long-life or powdered milk?  
- From what age was [child] given cow’s milk daily or almost daily?  
- From what age was [child] given fresh, long-life or powdered cow’s milk daily or almost daily? | 2001 Child Health Survey<sup>37</sup>  
2003 Infant Nutrition Survey<sup>42</sup>  
2003 Child Health Survey<sup>43</sup> |
### Table 6: Infants and Young Children (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o Whole or full cream milk</td>
<td>2003 Child Health Survey&lt;sup&gt;43&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>o Low or reduced fat milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Skim milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Soya milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Evaporated/sweetened condensed milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Some other type of milk (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Doesn’t drink milk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Don’t know</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Refused</td>
<td></td>
</tr>
<tr>
<td>6. Consumption of solids</td>
<td>Has [child] ever been given solid food daily or almost daily?</td>
<td>2003 Infant Nutrition Survey&lt;sup&gt;42&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>From what age was [child] given solid food daily or almost daily?</td>
<td>2003 Child Health Survey&lt;sup&gt;43&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Which of the following best describes the first solid food that [child]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>was given daily or almost daily?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Rusks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Rice cereal like farex</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Pureed fruit or vegetables</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Custard</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Pureed meat and vegetable meals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Something else</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Can’t remember</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Refused</td>
<td></td>
</tr>
<tr>
<td>7. Consumption of drinks</td>
<td>How many cups of fruit juice does [child] usually drink in a day?</td>
<td>2001 Child Health Survey&lt;sup&gt;37&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Has [child] ever been given any sweet drinks such as fruit juice,</td>
<td>2003 Infant Nutrition Survey&lt;sup&gt;42&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>cordial or soft drink daily or almost daily?</td>
<td>2003 Child Health Survey&lt;sup&gt;43&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>From what age was [child] given sweet drinks such as fruit juice,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cordial or soft drink daily or almost daily?</td>
<td></td>
</tr>
</tbody>
</table>
Table 6: Infants and Young Children (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 7. Consumption of drinks | ● What type of drink does [child] usually have at each of the following times:  
  ○ Firstly during meal times at home  
  ● Water  
  ● Milk (cows’ or other)  
  ● Tea or coffee  
  ● Flavoured milk or Milo, Quik etc  
  ● Soft drink or sports drink  
  ● Fruit juice  
  ● Cordial/ flavoured mineral water  
  ● Other (specify)  
  ● Doesn’t have a drink  
  ● Don’t know  
  ● Refused to answer  | 2003 Child Health Survey⁴³ |

The next question relates to soft drinks and sports drinks. By soft drink we mean fizzy drinks such as Coke and Lemonade, and sports drink are energy drinks such as Gatorade, Sportsade and Lucozade, whether they are fizzy or not. We are excluding all mineral waters and cordial mixed with water.

● How often does [child] drink soft drink or sports drinks? Would it be…..  
  ○ Daily or almost daily  
  ○ Several times per week  
  ○ About once a week  
  ○ About once a fortnight  
  ○ About once a month  
  ○ Less often than once per month  
  ○ Never  
  ○ Don’t know  
  ○ Refused to answer  

● On average, how many cans of soft drink or sports drink does [child] have every day?  
● On average, how many cans of soft drink or sports drink does [child] have every week?
## Table 6: Infants and Young Children (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Consumption of drinks (cont)</td>
<td></td>
<td>2003 Child Health Survey&lt;sup&gt;43&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>○ And at school or childcare with lunch (not morning tea)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Milk (cows’ or other)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tea or coffee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Flavoured milk or Milo, Quik etc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Soft drink or sports drink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Fruit juice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cordial/ flavoured mineral water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Doesn’t have a drink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Don’t know</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Refused to answer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ And between meals at home during the day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Milk (cows’ or other)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tea or coffee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Flavoured milk or Milo, Quik etc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Soft drink or sports drink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Fruit juice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cordial/ flavoured mineral water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Other (specify)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Doesn’t have a drink</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Don’t know</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Refused to answer</td>
<td></td>
</tr>
<tr>
<td>Indicator</td>
<td>Question</td>
<td>Survey</td>
</tr>
<tr>
<td>-----------</td>
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<td>--------</td>
</tr>
</tbody>
</table>
| 7. Consumption of drinks (cont) | o And at school or childcare between meals including at morning and afternoon tea or recess  
  • Water  
  • Milk (cows’ or other)  
  • Tea or coffee  
  • Flavoured milk or Milo, Quik etc  
  • Soft drink or sports drink  
  • Fruit juice  
  • Cordial/flavoured mineral water  
  • Other (specify)  
  • Doesn’t have a drink  
  • Don’t know  
  • Refused to answer  
  o And lastly, after tea at night  
  • Water  
  • Milk (cows’ or other)  
  • Tea or coffee  
  • Flavoured milk or Milo, Quik etc  
  • Soft drink or sports drink  
  • Fruit juice  
  • Cordial/flavoured mineral water  
  • Other (specify)  
  • Doesn’t have a drink  
  • Don’t know  
  • Refused to answer | 2003 Child Health Survey⁴³ |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Consumption of junk food</td>
<td>How many times a week on average does [child’s name] have meals or snacks such as burgers, pizza, chicken or chips from places like McDonalds, Hungry Jacks, Pizza Hut or Red Rooster?</td>
<td>SAMSS&lt;sup&gt;28&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>How often on average does [child’s name] have meals or snacks such as burgers, pizza, chicken or chips from places like McDonalds, Hungry Jacks, Pizza Hut, Red Rooster or local takeaway food places?</td>
<td>2003 Infant Nutrition Survey&lt;sup&gt;42&lt;/sup&gt;</td>
</tr>
<tr>
<td>9. Consumption of water</td>
<td>During the last four weeks, on average, how many glasses of water [do you / does child’s name] usually have in a day?</td>
<td>SAMSS&lt;sup&gt;28&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>During the school year, approximately how many times a week do you usually eat a complete school lunch?</td>
<td></td>
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<tr>
<td></td>
<td>Do you get these lunches free, at a reduced price or do you pay full price?</td>
<td></td>
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<tr>
<td></td>
<td>Does your school serve a complete breakfast that costs the same every day?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>During the school year, approximately how many times a week do you usually eat a complete school breakfast?</td>
<td></td>
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<tr>
<td></td>
<td>Do you get these breakfasts free, at a reduced price or do you pay full price?</td>
<td></td>
</tr>
</tbody>
</table>
Table 6: Infants and Young Children (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 11. Consumption of various foods | 1. I am going to read you a list of various drinks and foods that [child] may consume. I would like you to tell me if he/she has been fed any of these things since this time yesterday?  
   - Vitamins, mineral supplements or medicine  
   - Plain water  
   - Cordial or other sweetened or flavoured water  
   - Fruit juice  
   - Tea, herbal tea or infusion  
   - Breastmilk  
   - Infant formula  
   - Cow’s milk – either fresh, tinned or powdered  
   - Other milk such as goat, soy or rice milk  
   - Any solid or semi-solid foods such as mashed fruit or veges, baby cereal or other baby food (asked of children under 10 months)  
   - Fizzy soft drink  
   - Anything else (asked of children under 10 months)  

2. Firstly, cola soft drinks like Coke and Pepsi. Would you be comfortable for [child] to drink cola soft drinks daily, weekly, on the odd occasion or not at all?  
   - Daily  
   - Weekly  
   - Odd occasion  
   - Not at all  
   - Don’t know  
   - Refused to answer  

3. Same question as above but for:  
   - Traditional black tea  
   - Chocolate  
   - Energy drinks such as Red Bull or V  
   - Viking bars  
   - Coffee flavoured milk  
   - Chocolate breakfast cereals like coco pops  
   - Coffee  | 2003 Infant Nutrition Survey
2003 Child Health Survey
2003 Child Health Survey

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### Table 6: Infants and Young Children (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 12. Food security    | - In the last 12 months, were there any times that you ran out of food and couldn’t afford to buy any more?  
- How did you cope with feeding [child/ your children] when this happens?  
- Often true/ Sometimes true/ Never true:  
  o We eat the same thing for several days in a row because we only have a few different kinds of food on hand and don’t have money to buy more  
  o I cannot feed my child/ children a balanced meal because I can’t afford that  
  o My child/ children are not eating enough because I just can’t afford enough food  
  o I know my child is/ children are hungry sometimes, but I just can’t afford more food  
- In the last twelve months, were there any times that the food you have bought just didn’t last, and you didn’t have money to get more?  
- How often did this happen?  
- How do you cope with feeding your [child / children] when this happens? | 2001 Child Health Survey<sup>37</sup> |
CHAPTER 9: OLDER PEOPLE
9.1 Relevance of Nutrition in Older People

There are very few surveys that are designed for older people. This age group is often incorporated into population-wide surveys. Questions that are effective for the broader population may not perform as effectively for sub-groups such as older people. Marks et al\(^1\) recommend that specific indicators and questions relating to nutrition should be developed to address particular sub-groups of the population, such as older people.

Institutionalised older people, such as those living in nursing homes, are at particular risk of poor nutrition. However, most surveys select random telephone numbers from the Electronic White Pages. Consequently, people from this sub-group are likely to be excluded from nutrition-related surveys, as they would not be listed in the directory.

Older people are at a higher risk of poor nutritional status for a number of reasons, including disease, polypharmacy, loss of senses (such as taste and smell), inability to chew and swallow, deteriorating ability to purchase and cook foods, social isolation and loss of income. In addition, research has found that older people who receive meals from services such as Meals on Wheels have poorer nutritional status than the wider population\(^74,75\).

9.2 International Indicators

9.2.1 United States

<table>
<thead>
<tr>
<th>Nutritional intake</th>
</tr>
</thead>
</table>

NHANES\(^51\) asked people over the age of 60 about their nutritional intake, including questions relating to the frequency of vegetables and fruit (Table 7, Section 1).

<table>
<thead>
<tr>
<th>Meal Assistance programs</th>
</tr>
</thead>
</table>

NHANES\(^51\) asked people over the age of 60 about the frequency of consuming meals received from Meal Assistance programs, such as Meals on Wheels and meals from community centers (Table 7, Section 2).


### 9.3 Australian Indicators

The Australian Nutrition Screening Initiative\textsuperscript{74} can be used as a predictive tool in assessing nutritional risk in older people. The checklist includes the following items:

- Having an illness or condition resulting in changes in the kind or amount of food eaten.
- Do not have at least three meals per day.
- Not eating fruit or vegetable most days.
- Not eating dairy products most days.
- Have three or more glasses of beer, wine or spirits almost every day.
- Less than 6-8 cups of fluid most days.
- Teeth, mouth or swallowing problems that make it difficult to eat.
- Do not have enough money.
- Eating alone most of the time.
- Taking three or more medications a day.
- Involuntary weight change of 5kg in the last six months.
- Not always able to shop, cook and feed self.

The checklist is also included in the *Dietary Guidelines for Older Australians*\textsuperscript{7} as is the Victorian Home and Community Care Program: Nutritional Risk Screening and Monitoring Checklist\textsuperscript{7}. The areas relating to nutritional risk screening and monitoring are:

- Obvious underweight – frailty?
- Unintentional weight loss?
- Reduced appetite or food and fluid intake?
- Mouth or teeth or swallowing problems?
- Follows a special diet?
- Unable to shop for food?
- Unable to prepare food?
- Unable to feed self?
- Obvious overweight affecting quality of life?
- Unintentional weight gain?

A “yes” to one or more of these areas indicates the existence of nutritional risk. The checklist also includes a variety of needs assessment factors, all of which are related to nutritional risk\textsuperscript{7}.
The Federal Government has also introduced Enhanced Primary Care (EPC) Medicare Items to provide a multidisciplinary approach to health care and to:

- Provide more preventive care for older Australians; and
- Improve care coordination between general practitioners and health and other professionals providing care for people of any age with chronic conditions and complex care needs.

As part of the EPC health assessment, available to older people aged 75 years and over, there are issues relating to body mass index and diet and nutritional status\textsuperscript{76,77}.

\textbf{Eating and swallowing difficulties}

The 1995 NNS\textsuperscript{24} asked respondents about difficulties they have in relation to eating which may lead them to avoid eating certain foods. The question was not asked specifically to older people, but relates to issues, which may be relevant to people in this age category (Table 7, Section 3).

Questions in National Surveys relating to fruit and vegetable consumption, healthy weight and food security as described in other chapters are also relevant to older people and have been asked of these age groups.

\textbf{9.4 Other Australian States’ Indicators}

While there have been no specific surveys of older people in other states except New South Wales\textsuperscript{36}, questions relating to consumption of fruit, vegetables and other foods, food security and healthy weight which are described in other sections all have relevance to older people and have been asked of older age groups within the appropriate survey.
9.4.1 New South Wales

**Consumption of vegetables**

**Consumption of fruit**

The 1999 Older People’s Health Survey\(^3\) asked respondents about their average daily intake of fruit and vegetables (Table 7, Section 1).

**BMI**

The 1999 Older People’s Health Survey\(^3\) asked respondents about their average daily intake of fruit and vegetables (Table 7, Section 1).

**Food Security**

The 1999 Older People’s Health Survey\(^3\) asked respondents whether there were times in the past twelve months when they had run out of food and had not been able to afford to buy more (Table 7, Section 4).

**Food service in institutions e.g. nursing homes:**

Menus/recipes and catering practices consistent with recommendations

The above indicator is suggested in *Recommendations for Food and Nutrition Monitoring in NSW*\(^1\) as an indicator to monitor nutrition in older people.

9.5 South Australian Indicators

Questions are asked in the SAMSS\(^2\), and were asked in the South Australian Health and Wellbeing Survey\(^3\), Health Goals and Targets Health Monitoring Indicators Survey\(^4\) and the Health Goals and Targets Health Priority Areas Survey\(^5\), as described in other chapters are also relevant to older people and have been asked of these age groups.
### Table 7: Older people

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Nutritional intake - Includes questions on fruit and vegetable consumption | - During the past 12 months, how often per day, per week, per month or per year did you eat dark green vegetables?  
- During the past 12 months, how often per day, per week, per month or per year did you eat cooked dried beans or peas?  
- On the average day, how many helpings of the following kinds of foods do you eat?  
  - Protein foods, such as meat, seafood, eggs, etc.  
  - Milk or dairy foods  
  - Fruits or fruit juices  
  - Vegetables, including vegetable salads  
  - Bread and other foods that are made from grains, such as cereals, pasta, rice or tortillas  
- How many serves of fruit do you usually eat each day? A ‘serve’ is 1 medium piece or 2 smaller pieces of fruit or one cup of diced pieces  
- How many serves of vegetables do you eat each day? A ‘serve’ is ½ cup of cooked vegetables or 1 cup of salad vegetables | National Health and Nutrition Examination Survey \(^51\) - Asked of people over the age of 60  
1999 NSW Older People’s Health Survey \(^36\) |
| 2. Meal Assistance programs | - In the past 12 months, did you receive any meals delivered to your home from community programs, “Meals on Wheels” or any other program?  
- In the past 30 days, how many days per week did you receive these meals?  
- When meals were delivered to your home, how many meals did you usually receive each day  
- In the past 12 months, did you go to a community program or senior center to eat prepared meals?  
- In the past 30 days, how many days per week did you go to a community program or senior centre to eat prepared meals? | National Health and Nutrition Examination Survey \(^51\) - Asked of people over the age of 60 |
| 3. Eating and swallowing difficulties | - Do you have teeth, mouth or swallowing problems that cause you to avoid certain foods? | 1995 National Nutrition Survey \(^24\) - Not asked specifically to older people but relates to issue which may be relevant to older people |
| 4. Food security | - In the last 12 months, were there times that you ran out of food and couldn’t afford to buy more? | 1999 NSW Older People’s Health Survey \(^76\) |
CHAPTER 10: FOOD SUPPLY, FOOD ACCESS AND FOOD SECURITY
10.1 Relevance of Food Supply, Food Access and Food Security Indicators

Food security has been defined by Quigley et al.\textsuperscript{54} as “the ready availability of nutritionally adequate and safe foods, and the assured ability to acquire personally acceptable foods in a socially acceptable way”. Survey sampling strategies must take into account that populations most likely to experience food insecurity are those in “hard to reach” populations, such as those with no telephone connected, homeless people and those in remote areas\textsuperscript{1}.

Food supply refers to the sufficient availability of affordable, quality food to meet the needs of the household or community, and can vary according to store management, transport, storage and consumer demand\textsuperscript{78}. The ability of people to acquire food either physically and/or financially can be regarded as food access. This can depend on household income, total household expenditure, employment, education and food preferences, as well as the physical ability to obtain the food\textsuperscript{78}. A recent report from NSW\textsuperscript{79} defines food security in relation to both food supply and food access. There are various components that comprise each of these factors. These include:

- Food supply:
  - Location of food outlets;
  - Availability in stores;
  - Price;
  - Quality;
  - Variety; and
  - Promotion.

- Access to food:
  - Financial resources;
  - Distance and transport to shops;
  - Knowledge, skills and preferences;
  - Storage facilities;
  - Preparation and cooking facilities;
  - Time and mobility; and
  - Social supports.

These aspects of food supply and food access can be monitored as indicators of food security and insecurity\textsuperscript{79}.
10.2 International Indicators

10.2.1 United States

Food security

NHANES\textsuperscript{51} has asked several questions that relate to food security, including questions concerning having enough food to eat; reasons for running out of food; concern about not having enough food; being able to provide a well balanced meal; hunger; weight loss due to not having enough money to buy food; children not having enough food; relying on charities for food; and receiving food stamps. See Table 8, Section 1 for details.

A core food security module has also been developed in the United States by the US Drug Administration\textsuperscript{72}. Responses provide a measure of food security and the module is available in both long and short forms. See Table 8, Section 1 for details.

Community food security has also been identified as an issue and is viewed as an extension of household food security. Community food insecurity encompasses issues such as: whether there are adequate resources from where to purchase food, the available resources from which to purchase food are not available to everyone, the food is not of sufficient variety or quantity, the food is not competitively priced, there is a lack of local food production, food produced locally is not available to everyone, there is no support of local food production and within the community there is significant household food insecurity\textsuperscript{80}. These issues may also be used as indicators of food insecurity however they will not be described in any further detail.

10.2.2 New Zealand

Lower socio-economic groups, are a particular focus of the Healthy Eating – Healthy Action\textsuperscript{22} strategic framework in New Zealand. These are groups often facing issues of food security.

Food security

The New Zealand National Nutrition Survey\textsuperscript{54} asked respondents several questions about food security in their household, including questions on the effect money has on the

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amount of food eaten, such as not having enough food, food running out and limited variety of food due to lack of money; relying on other to provide food or money for food; the use of food grants or food banks; and the level of stressed caused by not being able to provide food due to lack of money. The questions are detailed in Table 8, Section 1.

10.3 Australian Indicators

Proportion that ran out of food and could not afford to buy more at some point over the previous 12 months

The 1995 NNS\textsuperscript{24} asked respondents whether there were times in the past twelve months that they ran out of food and could not afford to buy any more (Table 8, Section 2).

Marks et al\textsuperscript{1} suggested that it is likely that this question will result in the underestimation of food insecurity, because it only covers some aspects of food security. However, until a better question is created, it is recommended that use of this question should be continued.

10.4 Other Australian States’ Indicators

10.4.1 New South Wales

Proportion that ran out of food and could not afford to buy more at some point over the previous 12 months

The 1999 Older People’s Health Survey\textsuperscript{36} asked respondents whether there were times in the past twelve months that they ran out of food and could not afford to buy any more (Table 8, Section 2).

Food security

The NSW 2001 Child Health Survey\textsuperscript{37} asked respondents whether there were times in the past twelve months that they ran out of food and could not afford to buy any more and how they coped with feeding their child when this happened. This survey also asked
respondents about how the variety of their diet was affected by lack of money, whether they had enough food to feed their children and whether their children ever experience hunger. The questions are presented in Table 8, Section 1.

10.4.2 Queensland

<table>
<thead>
<tr>
<th>Food supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability, variety, quality and relative costs of core foods</td>
</tr>
</tbody>
</table>

The Central West Nutrition Survey\(^40\) asked respondents several questions about changes in availability and quality of fresh vegetables and fruit in their local area over the past twelve months, and where they get the majority of their vegetables and fruit (Table 8, Section 5).

The Healthy Food Access Basket Project monitored and compared the price and availability of basic food items and healthy food options across Queensland\(^81\) (Table 8, Section 6).

10.4.3 Tasmania

<table>
<thead>
<tr>
<th>Food Security</th>
</tr>
</thead>
</table>

The NH&MRC 1996 Dietary Key Indicators study\(^44\) asked respondents whether there were times in the past twelve months that they ran out of food and could not afford to buy any more. A positive answer was then followed up with an additional question, asking respondents for the reason for this food shortage (Table 8, Section 2).

The 1998 Healthy Communities Survey\(^45\) asked respondents to rank certain statements regarding food security from “never true” to “always true.” Statements included subjects such as having enough money to buy more food, being able to afford enough food for the household and provide a variety of foods, and being able to provide enough food for children. The questions are presented in Table 8, Section 1.
10.4.4 Western Australia

Proportion that ran out of food and could not afford to buy more at some point over the previous 12 months

The 1998 and 2001 Nutrition Monitoring Survey\(^47\) asked respondents whether there were times in the past twelve months that people had eaten less than they should because they could not afford to buy any more food (Table 8, Section 2).

Food access

The Benchmark Vegetable and Fruit Consumption Survey\(^48\) asked respondents questions about how often they found the vegetables and fruit they wanted to buy were too expensive, and what they did when this occurred (Table 8, Section 3).

Ability to store food

The Benchmark Vegetable and Fruit Consumption Survey\(^48\) asked respondents several questions about their ability to store fresh vegetables and fruit and how much fresh fruit and vegetables they have to throw out because they were no longer fresh. The questions are described in Table 8, Section 4.

Food supply

The Benchmark Vegetable and Fruit Consumption Survey\(^48\) asked several questions relating to the above indicator. Questions included how often the fresh vegetables and fruit that they want to buy are not available where they usually shop, and what they do when this occurs (Table 8, Section 5).

10.4.5 Northern Territory

Availability, variety, quality and relative costs of core foods

Consumption of core foods in sentinel sites (modified store turnover)
The Market Basket Survey\textsuperscript{50} monitored food supply in community stores in the Northern Territory. A “basket” of foods containing the necessary nutritional requirements of a family of six (of varying ages from 4 – 60) for one fortnight is listed and the cost, availability, variety and quality of foods of these foods is determined and compared to other regions\textsuperscript{50} (Table 8, Section 6).

10.5 South Australian Indicators

**Food security**

The SAMSS\textsuperscript{28} asks respondents whether there were times in the past twelve months that they ran out of food and could not afford to buy any more. Respondents are then asked how often this occurred, how they coped with feeding their children when this occurred and whether they have felt stressed due to not having enough money for food. The questions are described in Table 8, Section 1.

**Food supply**

*Availability, variety, quality and relative costs of core foods*

Food supply, using a basket of food developed to reflect a healthy eating pattern and sufficient to feed a hypothetical family of six people, including the cost, quality and variety was examined in the Food Supply in Rural South Australia survey\textsuperscript{82} (Table 8, Section 6).
### Table 8: Food Supply, Food Access and Food Security

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Food security| • Which of these statements best describes the food eaten by you/in your household in the last 12 months?  
|                 |    o I always have enough to eat and the kinds of food I want  
|                 |    o I have enough to eat but not always the kinds of food I want  
|                 |    o Often I don’t have enough to eat  
|                 | • Here are some reasons why people don’t have enough to eat or don’t always have the kinds of foods they want or need. For each one, please tell me if that is a reason why you don’t or your household doesn’t always have enough to eat or have the kinds of food you want or need.  
|                 |    o Not enough money for food  
|                 |    o Too hard to get to the store  
|                 |    o On a diet  
|                 |    o No working stove available  
|                 |    o Not able to cook or eat because of health problems  
|                 |    o Kinds of foods I want not available  
|                 |    o Good quality food is not available  | National Health and Nutrition Examination Survey\(^{51}\)
Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Food security (cont) | • True/ False:  
  o I worried whether my food would run out before I got money to buy more  
  o The food that I bought just didn’t last, and I didn’t have enough money to buy more  
  o I couldn’t afford to eat balanced meals  
  o I relied on only a few kinds of low-cost food to feed the child/ children because I was running out of money to buy more  
  o I couldn’t afford to buy the child/ children a balanced meal because I couldn’t afford that  
  • In the past 12 months, did you ever cut the size of your meals or skip meals because there wasn’t enough money for food?  
  • How often did this happen?  
  • In the past 12 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food?  
  • In the past 12 months, did you lose weight because you didn’t have enough money for food?  
  • In the past 12 months, did you ever not eat for a whole day because there wasn’t enough money for food  
  • How often did this happen?  
  • In the past 12 months, did you ever cut the size of any the children’s meals or skip meals because there wasn’t enough money for food?  
  • In the past 12 months, did any of the children ever skip meals because there wasn’t enough money for food?  
  • How often did this happen?  
  • In the past 12 months, were any of the children ever hungry but you just couldn’t afford more food? | National Health and Nutrition Examination Survey |
### Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Food security (cont) | • In the past 12 months, did any of the children ever not eat for a whole day because there wasn’t enough money for food?  
• In the last 12 months, did you ever get emergency food from a church, a food pantry or a food bank or eat in a community kitchen?  
• In the last 12 months, did you receive benefits from the Women, Infants and Children program?  
• In the last 12 months, were you authorized to receive food stamps?  
• In the last 12 months, about how many months were you authorized to receive food stamps?  
• Are you authorized now to receive food stamps  
• Which of these statements best describes the food eaten in your household in the last 12 months:  
  o Enough of the kinds of food we want to eat  
  o Enough but not always the kinds of food we want  
  o Sometimes not enough to eat  
  o Often enough  
  o Don’t know/ refused  
• Here are some reasons why people don’t always have enough to eat. For each one, please tell me if that is a reason why you don’t always have enough to eat  
  o Not enough money for food  
  o Not enough time for shopping or cooking  
  o Too hard to get to the store  
  o On a diet  
  o No working stove available  
  o Not able to cook or eat because of health problems | National Health and Nutrition Examination Survey\(^{31}\)  
US Food and Drug Administration – Food Security Core Module (Long form)\(^{32}\) |
### Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Food security (cont)     | • Here are some reasons why people don’t always have the quality or variety of food they want. For each one, please tell me if that is a reason why you don’t always have the kinds of food you want to eat.  
  o Not enough money for food  
  o Kind of food I/we want not available  
  o Not enough time for shopping or cooking  
  o Too hard to get to the store  
  o On a special diet  
  • I/We worried whether my /our food would run out before I/ we got money to buy more (in the last 12 months):  
  o Often true  
  o Sometime true  
  o Never true  
  o Don’t know/ refused  
  • The food that I/ we bought just didn’t last and I/ we didn’t have money to get more (in the last 12 months).  
  o Often true  
  o Sometime true  
  o Never true  
  o Don’t know/ refused  
  • I/ we couldn’t afford to eat balanced meals (in the last 12 months).  
  o Often true  
  o Sometime true  
  o Never true  
  o Don’t know/ refused | US Food and Drug Administration – Food Security Core Module (Long form)⁷² |
### Table 8: Food Supply, Food Access and Food Security (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Food security (cont) | - I/we relied on only a few kinds of low-cost food to feed (my/ our) children/ the children because I was/we were running out of money to buy food (in the last 12 months).  
  - I/ We couldn’t feed my/ our children/ the children a balanced meal, because I/ we couldn’t afford that (in the last 12 months).  
  - My/ Our child was/ The children were not eating enough because I/e just couldn’t afford enough food (in the last 12 months).  
  - In the last 12 months, since last (month) did you/ you or other adults in your household eve cut the size of your meals or skip meals because there wasn’t enough money for food?  
  - How often did this happen? | US Food and Drug Administration – Food Security Core Module (Long form) ²² |
<p>| | | |
|           |          |        |
|           | o Often true |        |
|           | o Sometime true |        |
|           | o Never true |        |
|           | o Don’t know/ refused |        |
|           | o Often true |        |
|           | o Sometime true |        |
|           | o Never true |        |
|           | o Don’t know/ refused |        |
|           | o Often true |        |
|           | o Sometime true |        |
|           | o Never true |        |
|           | o Don’t know/ refused |        |
|           | o Almost every month |        |
|           | o Some months but not every month |        |
|           | o Only 1 or 2 months |        |
|           | o Don’t know |        |</p>
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Food security (cont)</td>
<td>In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food?</td>
<td>US Food and Drug Administration – Food Security Core Module (Long form)</td>
</tr>
<tr>
<td></td>
<td>In the last 12 months, were you ever hungry but didn’t eat because you couldn’t afford enough food?</td>
<td></td>
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<tr>
<td></td>
<td>In the last 12 months, did you lose weight because you didn’t have enough money for food?</td>
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<tr>
<td></td>
<td>In the last 12 months, did you/you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food?</td>
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<td></td>
<td>How often did this happen?</td>
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<tr>
<td></td>
<td>o Almost every month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Some months but not every month</td>
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</tr>
<tr>
<td></td>
<td>o Only 1 or 2 months</td>
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<tr>
<td></td>
<td>o Don’t know</td>
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<tr>
<td></td>
<td>In the last 12 months, since (current month) of last year, did you ever cut the size of your child’s/any of the children’s) meals because there wasn’t enough money for food?</td>
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<tr>
<td></td>
<td>In the last 12 months did (child/children) ever skip meals because there wasn’t enough money for food?</td>
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<td>How often did this happen?</td>
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<tr>
<td></td>
<td>o Don’t know</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In the last 12 months was your child/were the children ever hungry but you just couldn’t afford more food?</td>
<td></td>
</tr>
</tbody>
</table>
### Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Food security (cont)</td>
<td>- In the last 12 months, did your child/ any of the children ever not eat for a whole day because there wasn’t enough money for food?</td>
<td>US Food and Drug Administration – Food Security Core Module (Long form)</td>
</tr>
<tr>
<td></td>
<td>- The food that I/ we bought just didn’t last and I/ we didn’t have money to get more (in the last 12 months).</td>
<td>US Food and Drug Administration – Food Security Core Module (Short form)</td>
</tr>
<tr>
<td></td>
<td>o Often true</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Sometime true</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Never true</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Don’t know/ refused</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- In the last 12 months, since last (month) did you/ you or other adults in your household ever cut the size of your meals or skip meals because there wasn’t enough money for food?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- How often did this happen?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Almost every month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Some months but not every month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Only 1 or 2 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Don’t know</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money to buy food?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- In the last 12 months, were you ever hungry but didn’t eat because you couldn’t afford enough food?</td>
<td></td>
</tr>
</tbody>
</table>
### Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Food security (cont)</td>
<td>“I/ we can’t afford to eat properly”</td>
<td>New Zealand National Nutrition Survey&lt;sup&gt;54&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>“Food runs out in my/ our household due to lack of money”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“I/ we eat less because of lack of money”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“The variety of food I am (we are) able to eat is sometimes limited by lack of money”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“I/ we rely on others to provide food and/ or money for food, for my/ our household, when I/ we don’t have enough money”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“I/ we make use of special food grants or food banks when I/ we do not have enough money for food”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“I feel stressed because of not having enough money for food”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“I feel stressed because I can’t provide the food I want for social occasions”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o How often has this been true for you (or your household) over the past year?</td>
<td></td>
</tr>
</tbody>
</table>
### Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 1. Food security (cont) | - Respondents were asked to rank the following statements from “never true (category 1) to “always true” (category 5).  
  o I worry whether my food will run out before I get money to buy more  
  o I worry about whether the food that I can afford to buy for my household will be enough  
  o The food that I bought just didn’t last, and I didn’t have money to get more  
  o We eat the same thing for several days in a row because we only have a few different kinds of food on hand and don’t have money to buy more  
  o My child/ren is/ are not eating enough because I just can’t afford enough food  
  - In the last 12 months, were there any times that you ran out of food and couldn’t afford to buy any more?  
  - How often did you cope with feeding [child/ your children] when this happens?  
  - Often true/ sometimes true/ never true:  
    o We eat the same thing for several days in a row because we only have a few different kinds of food on hand and don’t have money to buy more  
    o I cannot feed my child/ children a balanced meal because I can’t afford that  
    o My child/ children are not eating enough because I just can’t afford enough food  
    o I know my child is/ children are hungry sometimes, but I just can’t afford more food  
  - In the last twelve months, were there any times that the food you have bought just didn’t last and you didn’t have any money to get more?  
  - How often did this happen? (days, weeks, months)  
  - How did you cope with feeding you child/ children when this happens?  
  - In the last twelve months, have you felt stressed because of not having enough money for food? | 1998 Health Communities Survey[^23]  
2001 Child Health Survey[^37]  
SAMSS[^28] |
| 2. Proportion that ran out of food and couldn’t afford to buy more at some point over the previous 12 months | - In the last 12 months, were there times that you ran out of food and couldn’t afford to buy more? | 1995 National Nutrition Survey[^24]  
1999 NSW Older People’s Health Survey[^36] |

Questions in bold represent questions that have been recommended for use in population studies by the Australian Food and Nutrition Monitoring Unit[^1].
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 2. Proportion that ran out of food and couldn’t afford to buy more at some point over the previous 12 months (cont) | • In the last 12 months, has anyone in your household eaten less than they should because you couldn’t afford enough food?  
• In the last 12 months, were there times that you ran out of food and couldn’t afford to buy more?  
• Did this occur because you were accidentally caught short of money or because of longer term problems? | 1998 and 2001 Nutrition Monitoring Survey[^47]  
NH&MRC 1996 Dietary Key Indicators[^46] |
| 3. Food access | • How often do you find that the fresh vegetables you want to buy are too expensive?  
• If the fresh vegetables you want to buy are too expensive, do you usually:  
  o Try other shops until you get them at the right price?  
  o Buy less?  
  o Buy another vegetable as a substitute?  
  o Buy another type of food as a substitute?  
  o Buy frozen, canned, or dried vegetables?  
  o Do without?  
• How often do you find that the fresh fruit you want to buy is too expensive?  
• If the fresh fruit you want to buy is too expensive, do you usually:  
  o Try other shops until you get it at the right price?  
  o Buy less?  
  o Buy another fruit as a substitute?  
  o Buy another type of food as a substitute?  
  o Buy frozen, canned, or dried fruit?  
  o Do without? | 2002 Benchmark Vegetable and Fruit Consumption Survey[^48] |
### Table 8: Food Supply, Food Access and Food Security (cont...)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 4. Ability to store food   | - How often do you decide against buying larger amounts of fresh vegetables because you are uncertain about how to store them?  
- About how much of the vegetables you buy do you throw out because they are not longer fresh?  
- How often do you decide against buying larger amounts of fresh fruit because you are uncertain about how to store them?  
- About how much of the fruit you buy do you throw out because they are no longer fresh | 2002 Benchmark Vegetable and Fruit Consumption Survey[^48]                                    |
| 5. Food supply             | - How often do you find that the fresh vegetables you want to buy are not available where you shop?  
- If the fresh vegetables you want to buy are not available where you shop, do you usually:  
  - Try other shops until you find them?  
  - Buy another vegetable as a substitute  
  - Buy another type of food as a substitute?  
  - Buy frozen, canned or dried vegetables?  
  - Do without?  
- How often do you find that the fresh fruit you want to buy are not available where you shop?  
- If the fresh fruit you to buy is not available where you shop, do you usually:  
  - Try other shops until you find it?  
  - Buy another fruit as a substitute  
  - Buy another type of food as a substitute?  
  - Buy frozen, canned or dried fruit?  
  - Do without? | 2002 Benchmark Vegetable and Fruit Consumption Survey[^48]                                    |
### Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question</th>
<th>Survey</th>
</tr>
</thead>
</table>
| 5. Food supply (cont) | • Have you noticed any change in the quality of fresh vegetables available in your local town over the past year or so?  
• Have you noticed a wider range of fresh vegetables available in your local town over the past year or so?  
• Where do you get your fresh vegetables from?  
  o Nearest local town  
  o Another town  
  o Longreach supermarket  
  o Other Longreach  
  o Country order  
  o Given it  
  o Grow it  
  o Other  
  o Don’t use fresh vegetables  
  o Don’t know  
• Which one of the above sources provides most of your fresh vegetables?  
• Have you noticed any change in the quality of fresh fruit available in your local town over the past year or so?  
• Have you noticed a wider range of fresh fruit available in your local town over the past year or so?  
• Where do you get your fresh fruit from?  
  o Nearest local town  
  o Another town  
  o Longreach supermarket  
  o Other Longreach  
  o Country order  
  o Given it  
  o Grow it  
  o Other  
  o Don’t use fresh vegetables  
  o Don’t know  
• Which one of the above sources provides most of your fresh fruit? | Central West Nutrition Survey[^30] |
Table 8: Food Supply, Food Access and Food Security (cont…)

<table>
<thead>
<tr>
<th>Indicator</th>
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<th>Survey</th>
</tr>
</thead>
</table>
| 6. Food Cost (including availability, variety, quality and relative costs of core foods) | ● A basket of food was developed to reflect a healthy eating pattern. The amount of food required was calculated based on a hypothetical family of six.  
○ Cost of the basket of food was calculated  
○ Assessment of quality of fruit and vegetables available  
○ Assessment of the variety of fruit and vegetables available | Northern Territory Market Basket Survey\(^{50}\)  
Queensland Healthy Food Access Basket Project\(^{81}\)  
Food Supply in Rural South Australia\(^{82}\) |
CHAPTER 11: OTHER INDICATORS
11.1 Australian Indicators

Examples of other possible Australian indicators not covered in previous sections are presented below.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion who usually use whole milk</td>
<td></td>
</tr>
<tr>
<td>Proportion who usually use a fat-reduced milk (low/reduced fat or skim)</td>
<td></td>
</tr>
<tr>
<td>Proportion who usually don’t use milk</td>
<td></td>
</tr>
</tbody>
</table>

“What type of milk do you usually consume?”

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion who consume less than 150ml milk per day</td>
<td></td>
</tr>
</tbody>
</table>

“How much milk (in total) do you usually have in a day?”

(less than 150mls, 150-300mls, 301-600mls, more than 600mls)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage who rarely or never eat red meat</td>
<td></td>
</tr>
<tr>
<td>Percentage who usually consume red meat less than 3 times a week</td>
<td></td>
</tr>
</tbody>
</table>

“How often do you eat red meat? (beef, lamb, liver and kidney but not pork or ham) (in this category include all minimally processed forms of red meat such as chops, roasts, rissoles, hamburgers, mince, stir fries and casseroles)”

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage who rarely or never eat meat products</td>
<td></td>
</tr>
<tr>
<td>Percentage who usually consume meat products less than 3 times a week</td>
<td></td>
</tr>
</tbody>
</table>

“How often do you eat meat products such as sausages, frankfurter, Belgium, devon, salami, meat pies, bacon or ham?”
Other indicators

**Percentage who rarely or never eat bread**

**Percentage who usually consume bread less than daily**

“How often do you eat bread? (Include bread rolls, flat breads, crumpets, bagels, English or bread type muffins)”

**Percentage who rarely or never eat cooked cereals**

**Percentage who usually consume cooked cereals less than daily**

“How often do you eat pasta, rice, noodles or other cooked cereals? (not including cooked breakfast cereals)”

**Level of calcium**

**Level of iron**

It is also possible that other nutrition indicators that may be used are measured. Examples of such indicators are measures of iron and calcium intakes particularly for children, young people and women. These indicators relate to dietary quality and may become easier to measure on a regular basis in the future.

**11.2 Other South Australian Indicators**

Examples of other possible South Australian indicators not covered in previous sections are presented below.

**Proportion who usually use whole milk**

**Proportion who usually use a fat-reduced milk (low/reduced fat or skim)**

**Proportion who consume other types of milk**

**Proportion who usually don’t use milk**
“What type of milk do you usually have?”

Proportion who eat chips

“How often do you eat chips, French fries, wedges, fried potatoes or crisps?”

Proportion who eat bread

“How often do you eat bread?” (include bread roll, flat breads, crumpets, bagels, English or bread type muffins, cooked breakfast cereals)

Proportion who eat cereal

“How often do you eat breakfast cereal?” (ready made, home made or cooked)

Proportion who eat pasta, rice, noodles

“How often do you eat pasta, rice, noodles or other cereals?” (not including cooked breakfast cereals)

Proportion who rarely or never eat meat products

“How often do you eat meat products such as sausages, frankfurters, devon (fritz), salami, meat pies, bacon or ham?”
CHAPTER 12: REFERENCE LIST


15 Statewide Health Promotion Unit. 2001. Queensland Statewide Vegetable and Fruit Promotion Action Plan (draft), unpublished.


References


71 World Health Organization. *WHO Global Database on Child Growth and Malnutrition*, [online]. Available: [http://www.who.int/nutgrowthdb/intro_text.htm#child](http://www.who.int/nutgrowthdb/intro_text.htm#child) [accessed 17/02/03].


