



Australian Aboriginal and Torres Strait Islander Health Survey: Consumption of Food Groups from the Australian Dietary Guidelines

Australia
2012-13

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MEDIA RELEASE

2 NOVEMBER 2016

Embargo 11.30am (Canberra time)

Indigenous Australian diets fail to meet guidelines

Aboriginal and Torres Strait Islanders consume too little of the five major food groups and too much sugar and other discretionary foods, according to figures released by the Australian Bureau of Statistics (ABS) today.

Like the rest of the population, Aboriginal and Torres Strait Islander peoples' diets fail to meet the 2013 Australian Dietary Guidelines, which recommend minimum serves for vegetables, fruit, dairy products, lean meats and alternatives, and grain-based foods.

ABS Director of Health, Louise Gates said the latest results showed Aboriginal and Torres Strait adults consumed an average of 2.1 serves of vegetables per day, which is less than half of the 5-6 serves recommended by the Guidelines.

"Aboriginal and Torres Strait Islander adults consumed almost one serve (or 30 per cent) less vegetables than non-Indigenous people," said Ms Gates.

"They also consumed just one serve of fruit on average, half the recommended two serves per day."

In remote Australia, Aboriginal and Torres Strait Islander people consumed less than one serve (0.9) of fruit (e.g. less than one medium sized apple) and less than one serve (0.9) of dairy products (e.g. less than one cup of milk) per day, which was lower than those living in urban areas (1.3 serves for both fruit and dairy products).

However, Aboriginal and Torres Strait Islander people living in remote areas consumed around half a serve more of grain foods and lean meats and alternatives than people living in urban areas.

"The data also shows that 41 per cent of the population's total daily energy intake came from energy-dense, nutrient-poor 'discretionary foods', such as sweetened beverages, alcohol, cakes, confectionery and pastry products," said Ms Gates.

On average, this equates to over six serves of discretionary foods per day, triple the number of vegetable serves consumed. The Australian Dietary Guidelines recommend limiting discretionary foods to occasional, small amounts.

More details are available in [Australian Aboriginal and Torres Strait Islander Health Survey: Consumption of food groups from Australian Dietary Guidelines](#) (cat. no. 4727.0.55.008), available for free download from the ABS website, <http://www.abs.gov.au>.

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IN THIS RELEASE

This publication is the second release of information from the nutrition component of the 2012-13 National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS). It is intended to complement the Australian Aboriginal and Torres Strait Islander Health Survey: Nutrition Results – Foods and Nutrients, 2012-13 (cat. no. 4727.0.55.005) publication with newly developed information from Food Standards Australia and New Zealand (FSANZ) about consumption of the Five Food Groups, based on the 2013 Australian Dietary Guidelines (ADG) from the National Health and Medical Research Council (NHMRC). This publication includes analysis on the average consumption of the five ADG food groups. Additionally, it describes the contribution of food sub-groupings to the total number of serves of the five food groups as well as the most common food/beverage sources for each food group.

Unlike the analysis conducted on the total population in the May 2016 release of [Australian Health Survey: Consumption of food groups from the Australian Dietary Guidelines](#), this release does not provide modelled estimates of usual intake. Therefore, the data cannot be used to estimate the proportions of people who would meet the ADG recommendations on a usual basis. See Explanatory Note 5.

Analysis of the 2012-13 NATSINPAS suggests that, like other nutrition surveys, the results are affected (biased) by some under-reporting of food intake by participants in the survey. Therefore, estimates of the amounts of food groups consumed in this publication may be an underestimate of the true amounts consumed. More information on under-reporting is provided in the following section and the [Australian Aboriginal and Torres Strait Islander Health Survey User's Guide](#).

MEASURING THE CONSUMPTION OF FOOD GROUPS FROM THE AUSTRALIAN DIETARY GUIDELINES

INTRODUCTION

The 2013 Australian Dietary Guidelines (ADG) provide evidence-based guidance for all Australians on the amounts and types of foods and dietary patterns required for optimal health and wellbeing.¹ Whilst the ADG consist of five Guidelines (see [Appendix 1](#)), the major focus of this publication was to analyse consumption of foods groups within Guideline 2, referred to as the 'Five Food Groups' comprising:

- Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties
- Vegetables and legumes/beans
- Fruit
- Milk, yoghurt, cheese and/or other alternatives, mostly reduced fat
- Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans

In addition to the recommendations of servings from the Five Food Groups, the ADG recommend drinking plenty of water and include small allowances for unsaturated spreads and oils.

The 2013 Australian Dietary Guidelines noted a lack of data relating to dietary intakes of Aboriginal and Torres Strait Islander peoples. This publication aims to fill this need and provide evidence to support policies designed to reduce health inequalities between Aboriginal and Torres Strait Islander and non-Indigenous people.

Using 2012-13 NATSINPAS data, this publication presents the population mean (average) consumption from each of the five food groups on a given day. The mean daily consumption of each food group is presented alongside the ADG recommended minimum servings for each age and sex group. While this comparison gives relevant context, it does not provide an indication of the proportion of people who would usually consume above or below the recommended minimum serves. Such an analysis requires modelled usual intake distributions, which have not been produced for this survey (see [Explanatory Note 5](#)).

A further objective is to break the Five Food Groups into sub-groups to examine the relative contribution of those groups and also look at the form in which the foods were consumed.

METHODS

Because many foods recorded within the 2012-13 NATSINPAS were mixed foods (e.g. a lasagne may contain meat, vegetables, cereal and dairy foods), it was necessary to create a new database specifying the amounts of each of the Five Food Groups for each of the approximately 5,700 unique foods in the NATSINPAS. Development of the ADG database was undertaken by Food Standards Australia New Zealand (FSANZ) who designed the protocol and classification for assigning proportions of foods to food groups. This database complements the underlying nutrient database (known as AUSNUT 2011-13) and may be accessed along with the detailed explanatory notes from the FSANZ website.²

Treatment of discretionary foods

The ADG (Guideline 3 in particular) provides clear advice that Australians should limit their intake of discretionary foods which are characterised as nutrient-poor and energy-dense and are often high in saturated fat, salt or added sugars.¹ Therefore, in order to be consistent with the Guidelines only foods that were classified as non-discretionary³ were included when reporting intakes of ADG food groups (regardless of whether those discretionary foods have ingredients that would otherwise be considered as belonging to the Five Food Groups). However, the ADG database distributed all AUSNUT foods into the Five Food Groups irrespective of whether the food was classified as non-discretionary or discretionary, and this information is used for some supplementary analyses estimating how many extra serves were consumed if the Five Food Group components within discretionary food were counted.

Age standardising

The Aboriginal and Torres Strait Islander population has a significantly younger age structure than the non-Indigenous population, which means that comparisons of characteristics which are strongly age-related (such as health conditions) will be influenced by the differing age structures. While age standardisation is commonly used in comparisons of the two populations' health status, it may not be appropriate to apply to characteristics that are less clearly age related such as dietary behaviours (see [Explanatory Note 6](#)).

Reporting for persons aged 71 years and over

While the Guidelines provide recommendations for males and females aged 71 years and over, estimates for this age group are not presented separately in this publication due to the high sampling error associated with the limited number of Aboriginal and Torres Strait people in the 71 years and over age group. However, people this age contribute to all applicable totals in text and tables, including within the accompanying data cube.

Reporting for pregnant and breastfeeding women

Unlike the analysis conducted on the total population in the April 2016 release of [Australian Health Survey: Consumption of food groups from the Australian Dietary Guidelines](#), this release does not exclude pregnant and breastfeeding women as this information was not collected in the 2012-13 NATSINPAS.

Under-reporting

Analysis of the 2012-13 NATSINPAS suggests that, like other nutrition surveys, the results are affected by under-reporting. Therefore, estimates of the amounts of food groups consumed in this publication may be an underestimate of the true amounts consumed.

In order to assist in the interpretation of data from the 2012-13 NATSINPAS, particularly in comparisons with non-Indigenous estimates from the 2011-12 National Nutrition and Physical Activity Survey (NNPAS), there are a few key points that should be noted.

- It is likely that under-reporting is present in both surveys.
- There appears to be a greater level of under-reporting in the NATSINPAS than in the NNPAS.
- The proportion of Aboriginal and Torres Strait Islander people who were classed as Low Energy Reporters (LERs) increased with Body Mass Index (BMI) for both males and females, with females more likely to be LERs than males.

Given the association of under-reporting with overweight/obesity and consciousness of socially acceptable/desirable dietary patterns, under-reporting is unlikely to affect data for all foods and nutrients equally. As a result, no adjustment to the estimates has been applied and the results within this publication will be affected by under-reporting to differing degrees. Therefore, care should be taken when interpreting results in this publication. For more information on under-reporting, please see the [Australian Aboriginal and Torres Strait Islander Health Survey Users' Guide](#).

ENDNOTES

1. National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.
https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf, Last accessed 27/10/2016
2. For more information see *Assessing the 2011-13 AHS against the Australian Dietary Guidelines - Classification System and Database Development Explanatory notes*, available from:
<http://www.foodstandards.gov.au/science/monitoringnutrients/ausnut/>
3. For more information on the development of the discretionary foods classification see the 4363.0.55.001 - Australian Health Survey: Users' Guide, 2011-13 available from:
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12-Main%20Features~Discretionary%20foods~700>

KEY FINDINGS

The 2013 [Australian Dietary Guidelines](#) (ADG or the Guidelines) recommend that Australians “Enjoy a wide variety of nutritious foods from the Five Food Groups every day and drink plenty of water”.¹

This publication provides analysis on the consumption of the Five Food groups from the Australian Dietary Guidelines using nutrition data collected in the 2012-13 National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS).

FIVE FOOD GROUPS

In 2012-13, Aboriginal and Torres Strait Islander people consumed an average total of 10 serves of foods from the Five Food Groups per day.

Vegetables and legumes/beans group

- Aboriginal and Torres Strait Islander people aged two years and over consumed an average of 1.8 serves of *vegetables and legumes/beans* per day compared with 2.7 among non-Indigenous people.
- The number of vegetable serves consumed increased with age, with children aged 2-18 years consuming 1.4 serves per day on average compared with 2.1 among adults aged 19 years and over.
- The average daily consumption of *vegetable and legumes/beans* serves for each age-sex group of Aboriginal and Torres Strait Islander people was considerably less than the respective recommendations.

Fruit group

- Around 1.2 serves of *fruit* (including fruit juice and dried fruit) were consumed per day on average by Aboriginal and Torres Strait Islander people aged two years and over, compared with 1.5 serves per day in the non-Indigenous population.
- Fresh or canned fruit made up 62% and one-third (34%) came from fruit juice.
- Children consumed more serves of *fruit* than adults, averaging 1.6 serves per day compared with 1.0 respectively.
- Aboriginal and Torres Strait Islander people living in non-remote areas consumed more serves of *fruit* on average than those living in remote areas (1.3 serves compared with 0.9).
- The average daily consumption of 1.0 serves of *fruit* by Aboriginal and Torres Strait Islander adults was half the recommended two serves.

Milk, yoghurt, cheese and alternatives group

- Aboriginal and Torres Strait Islander people aged two years and over consumed an average of 1.2 serves of *milk, yoghurt, cheese and alternatives* per day, compared with 1.5 serves among non-Indigenous people.
- Dairy milk made up almost two-thirds (65%) of this food group, followed by cheese (30%).
- The average daily consumption of *milk, yoghurt, cheese and alternatives* for each age-sex group of Aboriginal and Torres Strait Islander people, with the exception of children aged 2-3 years and girls 4-8 years, was considerably lower than the respective recommend number of serves.

Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans group

- The average consumption of *lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* was around 1.6 serves per day for Aboriginal and Torres Strait Islander people aged two years and over, slightly less than for non-Indigenous Australians (1.7 serves).
- People living in remote areas consumed more serves of *lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* than those living in non-remote areas (2.0 serves compared with 1.4).
- Lean red meats made up almost half (49%) of the serves of *lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans*. The contribution of lean red meats was higher for people living in remote areas compared with non-remote (61% compared with 44%)
- The average daily consumption of *lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* for each age-sex group of Aboriginal and Torres Strait Islander people, with the exception of girls 2-3 years, was considerably less than the respective recommendations.

Grain (Cereal) foods group

- On average, Aboriginal and Torres Strait Islander people aged two years and over consumed around 4.1 serves of *grain (cereal)* foods per day, compared with 4.5 serves among non-Indigenous Australians.
- Aboriginal and Torres Strait Islander people in remote areas consumed more serves of grain (cereal) foods on average than those in non-remote areas (4.6 serves compared with 4.0 serves)
- One-quarter (25%) of *grain (cereal)* foods consumed were from wholegrain and/or high fibre varieties.
- The average number of serves of *grain (cereal)* foods consumed by Aboriginal and Torres Strait Islander boys aged 4-13 years and girls aged 4-11 was equal to or greater than the recommendation.

WATER

The Guidelines also include the recommendation that Australians drink plenty of water. In 2012-13, the average amount of plain water, including both bottled and tap, consumed by Aboriginal and Torres Strait Islander people was around one litre per day (997 ml), 76 ml less than the average for non-Indigenous people (1,073 ml). An additional 262 ml of water was consumed from other non-discretionary beverages such as tea and coffee. Plain water contributed just under half (48%) of Aboriginal and Torres Strait Islander peoples' total beverage consumption, slightly less than that of non-Indigenous Australians (50%).

UNSATURATED SPREADS AND OILS

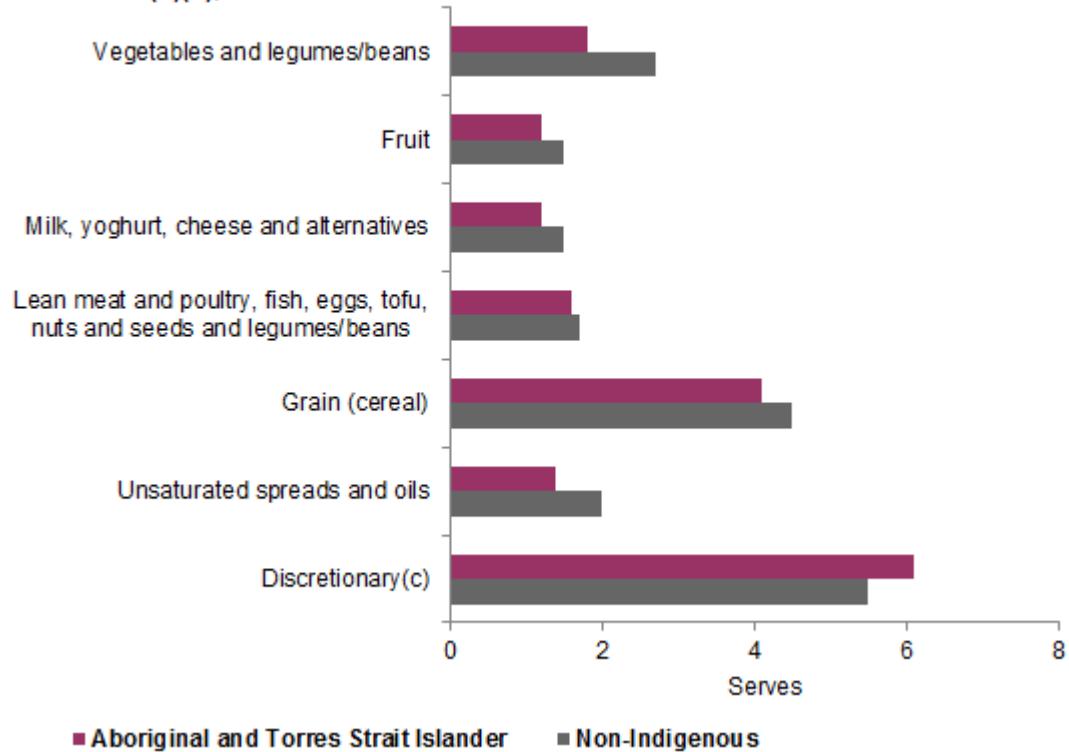
The Guidelines also recommend a daily allowance for unsaturated fats, oils and spreads. In 2012-13, Aboriginal and Torres Strait Islander people aged 2 years and over consumed an average 1.4 serves of *unsaturated spreads and oils* from non-discretionary sources.

DISCRETIONARY FOODS

The Guidelines recommend that discretionary foods (i.e. those not necessary for nutrients but are often high in saturated fat, salt, sugar or alcohol) are only consumed sometimes and in small amounts. However, over two-fifths (41%) of total daily energy in 2012-13 came from foods and beverages classified as discretionary.²

According to the Guidelines, a serve of discretionary food is around 500-600 kJ. Based on this, Aboriginal and Torres Strait Islander people consumed an average of 6.1 serves of discretionary foods per day, which was higher than the non-Indigenous population average of 5.5 serves. The leading contributors to serves of from discretionary foods were alcoholic beverages (10%), soft drinks (9.1%), potato products such as chips and fries (8.2%), pastries (7.1%), cakes and muffins (6.4%) and confectionary (6.3%).

Persons 2 years and over - Average serves of Australian Dietary Guidelines food groups and discretionary foods by Indigenous status(a)(b), 2011-13



■ Aboriginal and Torres Strait Islander ■ Non-Indigenous

(a) Based on Day 1. See Glossary for definition.

(b) From non-discretionary sources unless otherwise specified.

(c) A discretionary serve is defined as 500-600 kJ. Discretionary serves were derived by summing energy from discretionary foods and dividing by 550 kJ. Does not include meats that do not meet the ADG criteria but are not flagged as discretionary.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

ENDNOTES

1. National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.

<https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf>, Last accessed 27/10/2016

2. See discussion of Discretionary foods from 4364.0.55.007 - *Australian Health Survey: Nutrition First Results - Foods and Nutrients*, 2011-12,

<<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Main%20Features~Discretionary%20foods~700>>

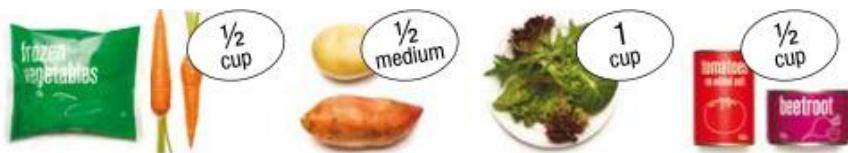
VEGETABLES AND LEGUMES/BEANS

The ADG advice to “enjoy plenty of vegetables, including different types and colours, and legumes/beans” is a long standing message supported by an accumulating body of evidence.¹ In addition to being a vital source of vitamins, minerals and fibre, *vegetables and legumes/beans* can help reduce a person’s risk of developing chronic conditions such as cardiovascular disease, diabetes and certain cancers. A further and related benefit of a diet rich in *vegetables and legumes/beans* is to help to maintain healthy body weight when consumed in place of energy-dense foods.^{1,2}

How much is a serve of vegetables?*

A standard serve is about 75 g (100-350 kJ) or:

- $\frac{1}{2}$ cup cooked green or orange vegetables (for example, broccoli, spinach, carrots or pumpkin)
- $\frac{1}{2}$ cup cooked dried or canned beans, peas or lentils**
- 1 cup green leafy or raw salad vegetables
- 1 medium tomato



*With canned varieties, choose those with no added salt

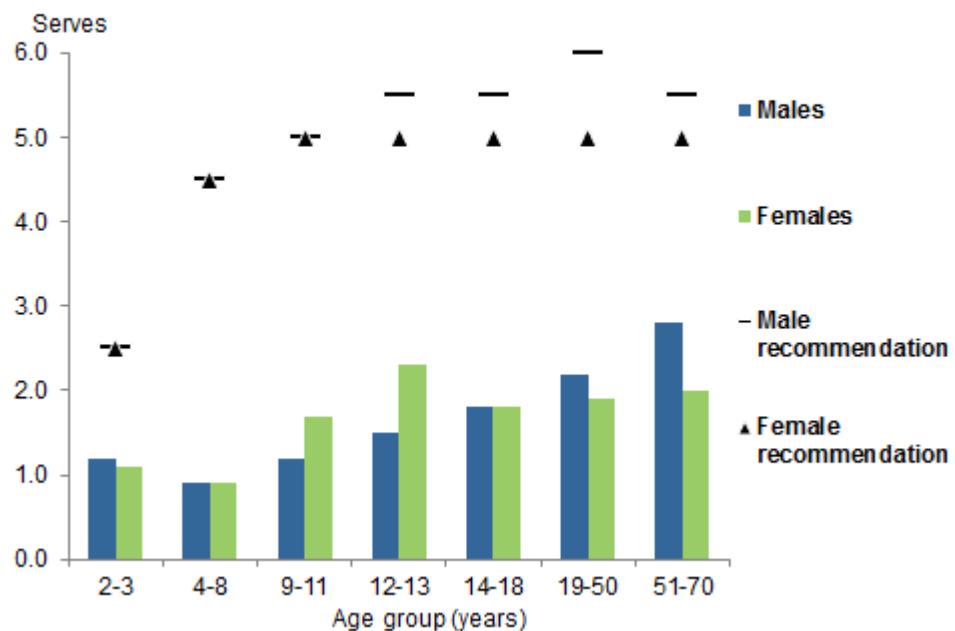
**Legumes/beans also contribute to serves within the Lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans group, see Glossary for more information

Source: National Health and Medical Research Council¹

CONSUMPTION OF VEGETABLES AND LEGUMES/BEANS

In 2012-13, Aboriginal and Torres Strait Islander people aged 2 years and over consumed an average 1.8 serves of *vegetables and legumes/beans* per day. The average number of serves consumed generally increased with age as 2-18 year olds consumed 1.4 serves of *vegetables and legumes/beans* and adults 19 years and over had 2.1 serves. The increase with age was greatest among males with men aged 19 years and over having an extra 1.0 serves of *vegetables and legumes/beans* on average compared with boys aged 2-18 years (2.3 and 1.3 serves respectively).

Persons 2-70 years - Average serves of vegetables and legumes/beans consumed by sex(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

The average serves of vegetables consumed was less than half the recommended number of usual serves for males and females in all age groups except for men 51-70 years, who consumed 2.8 serves which was around half the recommended serves for that group (5.5 serves).

Vegetables and legumes/beans: Recommended number of serves per day and average serves consumed

Age group (years)	Recommended minimum (a)		Average (b)	
	Serves		Serves	
	Males	Females	Males	Females
2-3	2½	2½	1.2	1.1
4-8	4½	4½	0.9	0.9
9-11	5	5	1.2	1.7
12-13	5½	5	1.5	2.3
14-18	5½	5*	1.8	1.8
19-50	6	5*	2.2	1.9
51-70	5½	5	2.8	2.0
71+	5	5	..	..
Total (c)	..	..	1.9	1.7

(a) National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*

https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf

(b) Daily average consumed from non-discretionary sources

(c) Includes persons aged 71 years and over

.. Not available

* For pregnant women of all ages, the Guidelines recommend 5 serves of vegetables and legumes/beans. For breastfeeding women up to 18 years the Guidelines recommend 5.5 serves, and for breastfeeding women 19-50 years 7.5 serves are recommended.

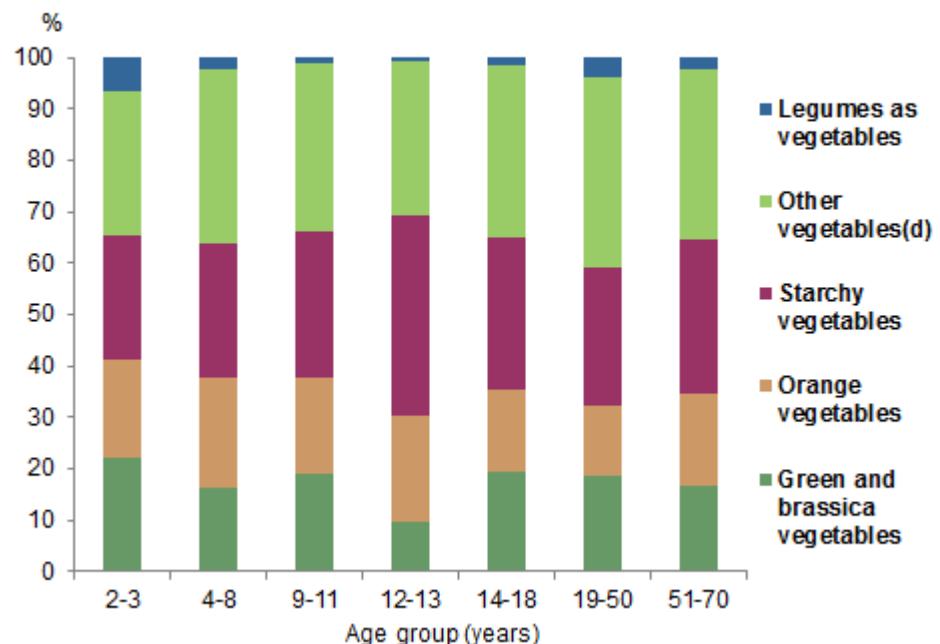
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

TYPES OF VEGETABLES

The vegetables and legumes/beans food group may be analysed by broad sub groups to show the types of vegetables contributing to overall consumption. These were starchy vegetables (contributing 28%), green and brassica vegetables (18%), orange vegetables such as carrot and pumpkin (16%) and legumes (3.1%). Other

vegetables (such as tomato, cucumber, capsicum, onion and vegetable juice) contributed the largest proportion of *vegetable and legumes/beans* serves at 35%.

Persons 2-70 years - Proportion of serves, types of vegetables and legumes/beans by age group(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

(d) Includes tomato, capsicum, mushroom, zucchini, squash and other vegetables. For a list of included vegetables in each category see Appendix 2.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

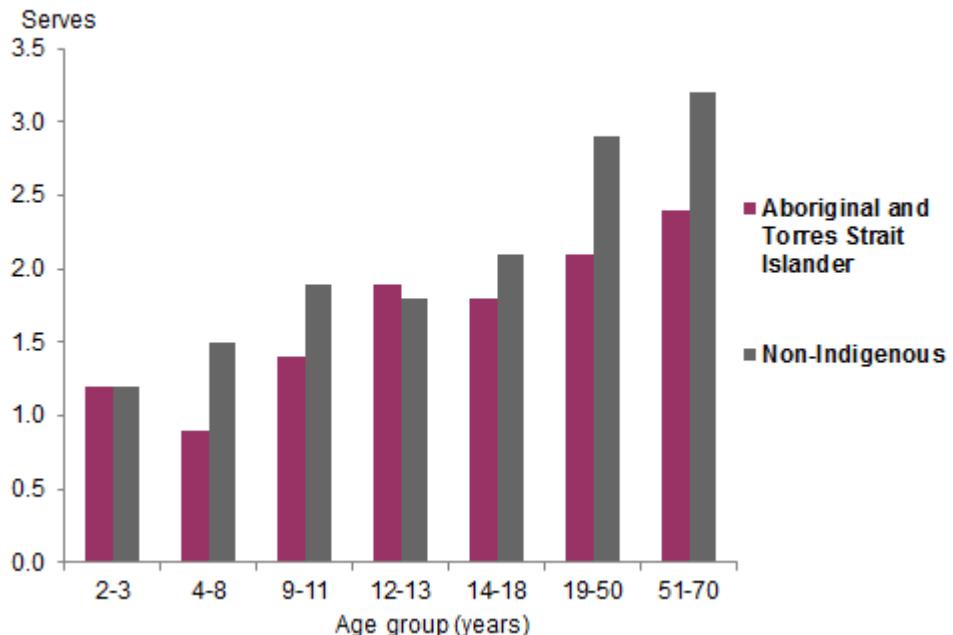
BY REMOTENESS

Overall, the average serves of *vegetable and legumes/beans* consumed was similar in remote and non-remote areas.

COMPARED WITH NON-INDIGENOUS PEOPLE

Aboriginal and Torres Strait Islander people 2 years and over consumed less serves of *vegetables and legumes/beans* on average than non-Indigenous people (1.8 serves compared with 2.7 serves).

Persons 2-70 years - Average serves of vegetables and legumes/beans consumed by Indigenous status(a)(b), 2011-13



(a) Based on Day 1. See Glossary for definition.

(b) From non-discretionary sources.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

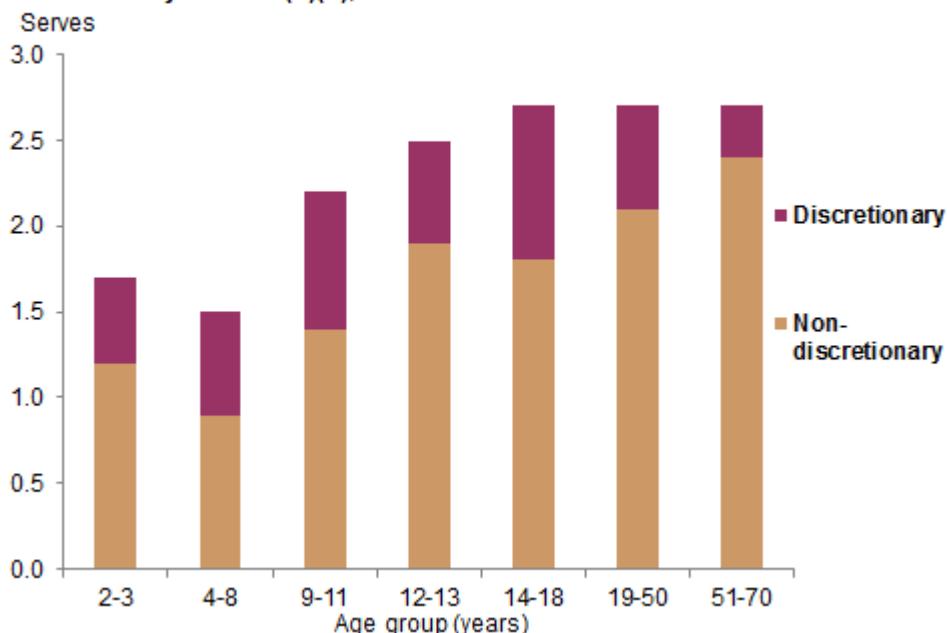
Overall, starchy vegetables contributed a higher proportion of serves of *vegetables and legumes/beans* for Aboriginal and Torres Strait Islander people when compared with non-Indigenous people (28% and 21% respectively).

VEGETABLES AND LEGUMES/BEANS FROM DISCRETIONARY SOURCES

The 'vegetables' food group in the ADG excludes all discretionary sources. For this reason, the above analysis also excludes vegetables from discretionary sources. However, if discretionary sources of vegetables were counted in the total consumption of this ADG food group, they would raise intakes by 0.6 serves from 1.8 to 2.4, which would increase the average intake by one-third. Adolescents 14-18 years had the highest intake of discretionary vegetables, consuming 0.9 serves on average.

Discretionary sources make a relatively greater contribution to vegetable intake among children and adolescents 2-18 years than adults aged 19 years and over. Among those aged 2-18 years, discretionary serves added 0.7 serves, raising the overall intake to 2.1 serves.

Persons 2-70 years - Average serves of vegetables and legumes/beans consumed from discretionary and non-discretionary sources(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Of discretionary serves of vegetables consumed, over half (52%) came from potato products such as potato chips and fries (49%), potato gems and hash browns (0.9%) and other deep fried potato dishes or snacks. Another 23% came from potato crisps, and 13% came from savoury sauces or condiments, including 7.3% from tomato sauces. A further 5.2% came from pastries (such as pies, pasties) and 3.2% came from mixed dishes where cereal is a major component, such as pizzas and burgers high in saturated fat.

ENDNOTES

1. National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.
<https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf>, Last accessed 27/10/2016
2. Legumes/beans also contribute to the lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans food groups. For more information about the food groups refer to Appendix 2.

FRUIT

Fruits, like vegetables, are rich in vitamins, minerals and fibre, and dietary patterns including daily *fruit* consumption can help prevent chronic conditions such as cardiovascular disease and certain cancers.¹ Other health benefits associated with consuming fruits include a reduced risk of obesity and weight gain.¹

Fruits in the form of fresh, frozen, canned, dried or juices are all suitable foods to be enjoyed as part of a healthy diet.¹

How much is a serve of fruit?

A standard serve is about 150 g (350 kJ) or:

- 1 medium apple, banana, pear or orange
- 2 small apricots, kiwi fruits or plums
- 1 cup diced or canned fruit (no added sugar)

Or only occasionally:

- $\frac{1}{2}$ cup fruit juice (no added sugar)
- 30 g dried fruit

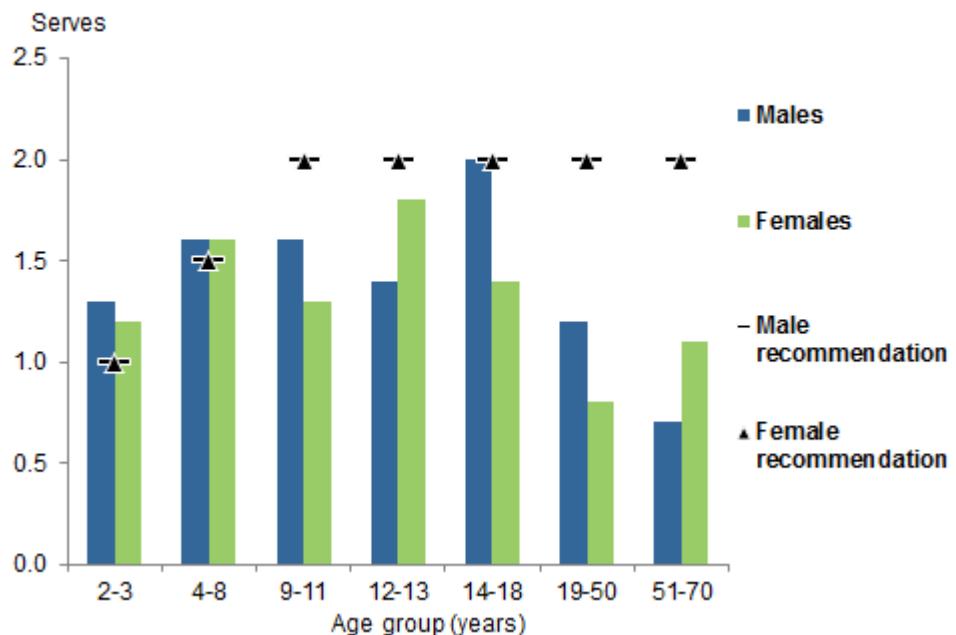


Source: National Health and Medical Research Council¹

CONSUMPTION OF FRUIT

Aboriginal and Torres Strait Islander people aged 2 years and over consumed an average of 1.2 serves of *fruit* per day in 2012-13. Children and teenagers aged 2-18 years consumed a greater amount than adults, with an average 1.6 serves per day compared with 1.0 serve among adults aged 19 years and over. The amount of serves consumed was similar between males and females of most age groups, although females aged 51-70 years consumed a greater number of serves on average than their male counterparts, with 1.1 serves compared with 0.7 serves.

Persons 2-70 years - Average serves of fruit consumed by sex(a)(b)(c), 2012-13



- (a) Aboriginal and Torres Strait Islander people.
- (b) Based on Day 1. See Glossary for definition.
- (c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

On average, children aged 2-8 years ate more *fruit* than the minimum daily recommended by the Australian Dietary Guidelines (ADG), with 1.2 serves and 1.6 serves for 2-3 year olds and 4-8 year olds respectively.²

Fruit: Recommended number of serves per day and average serves consumed

Age group (years)	Recommended minimum (a)		Average (b)	
	Serves		Serves	
	Males	Females	Males	Females
2-3	1	1	1.3	1.2
4-8	1½	1½	1.6	1.6
9-11	2	2	1.6	1.3
12-13	2	2	1.4	1.8
14-18	2	2*	2.0	1.4
19-50	2	2*	1.2	0.8
51-70	2	2	0.7	1.1
71+	2	2	..	..
Total (c)	..	..	1.3	1.1

- (a) National Health and Medical Research Council, 2013, *Australian Dietary Guidelines* https://www.nhmc.gov.au/_files_nhmc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf

- (b) Daily average consumed from non-discretionary sources

- (c) Includes persons aged 71 years and over

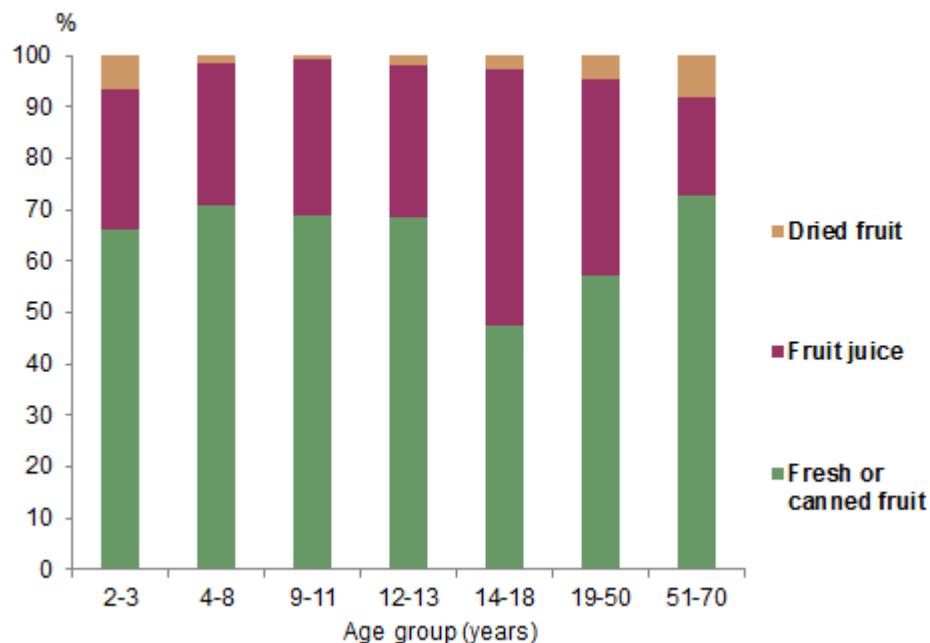
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* For pregnant and breastfeeding women of all ages, the Guidelines recommend 2 serves of *fruit* per day
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

FORMS OF FRUIT

Fresh or canned fruit made up the greatest proportion of the fruit consumed at 62%. Around one-third (34%) came from fruit juice with the remainder (3.7%) from dried fruit.

Persons 2-70 years - Proportion of serves, types of fruit by age group(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

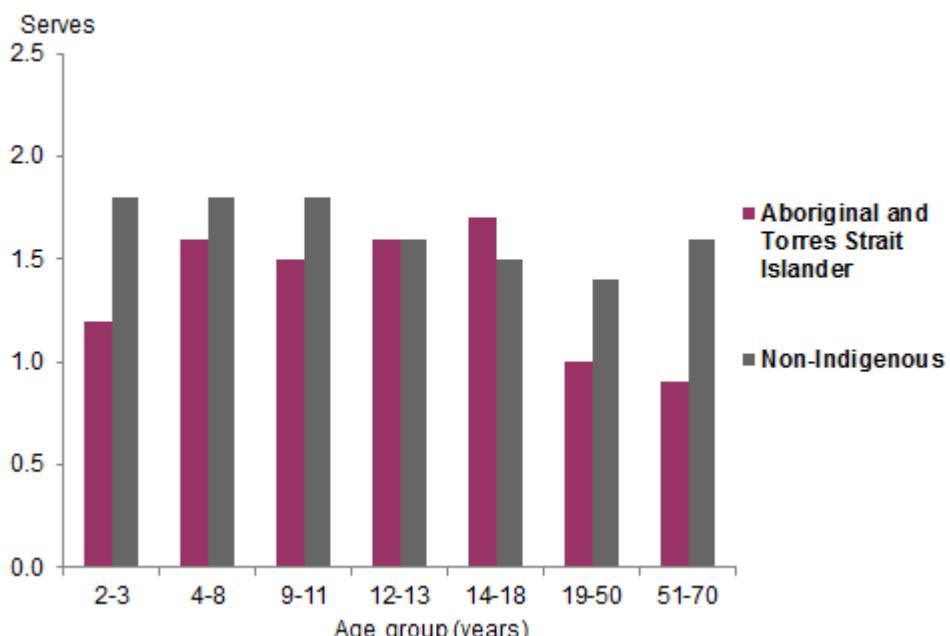
BY REMOTENESS

Aboriginal and Torres Strait Islander people living in non-remote areas consumed a greater number of serves of *fruit* than those in remote areas (1.3 serves compared with 0.9 serves).

COMPARED WITH NON-INDIGENOUS PEOPLE

Aboriginal and Torres Strait Islander people consumed fewer serves of *fruit* on average than non-Indigenous people (1.2 serves in comparison with 1.5 serves). Of the *fruit* serves consumed, Aboriginal and Torres Strait Islander people derived a greater share from fruit juice compared with non-Indigenous people (34% and 27% respectively).

Persons 2-70 years - Average serves of fruit consumed by Indigenous status(a)(b), 2011-13



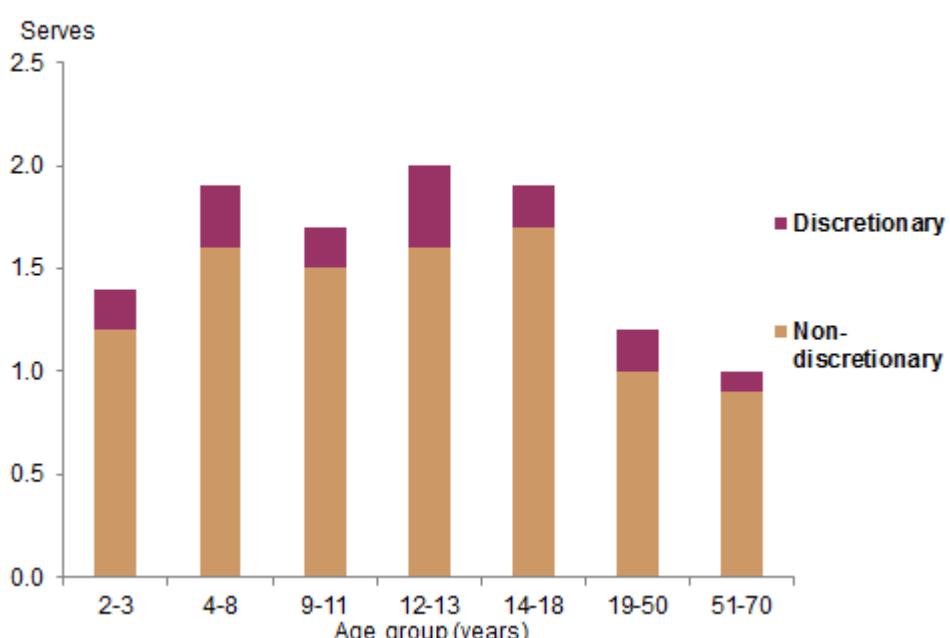
- (a) Based on Day 1. See Glossary for definition.
 (b) From non-discretionary sources.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

FRUIT FROM DISCRETIONARY SOURCES

The 'fruit' food group in the ADG excludes all discretionary sources. For this reason, the above analysis also excludes discretionary foods which contain *fruit*. However if discretionary sources of *fruit* were accounted for, they would account for an extra 0.2 serves across the population, lifting the average intake by 0.2 serves from 1.2 to 1.4 serves. Children aged 2-18 years consumed an extra 0.25 serves from discretionary sources, making up a 16% increase in *fruit* consumed.

Persons 2-70 years - Average serves of fruit consumed from discretionary and non-discretionary sources(a)(b), 2012-13



- (a) Aboriginal and Torres Strait Islander people.
 (b) Based on Day 1. See Glossary for definition.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Of discretionary sources of *fruit* consumed, the vast majority (83%) came from Non-alcoholic beverages, made up by fruit drinks (58%), cordials (20%) and soft drinks (4.6%). The other large contributor of discretionary fruit was cereal based products and dishes (9.2%), with cakes, muffins, scones and cake-type desserts being the major contributor (5.6%)

ENDNOTES

1. National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.
<https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf>, Last accessed 27/10/2016
2. Although the average number of serves for children aged 2-3 years and 4-8 years was greater than minimum recommended, this should not be interpreted as all (or even most) children this age had an adequate level of consumption. This is because the average cannot indicate the proportion of the population who had a usual intake above or below the recommendation. See Explanatory Note 5.

MILK, YOGHURT, CHEESE AND ALTERNATIVES

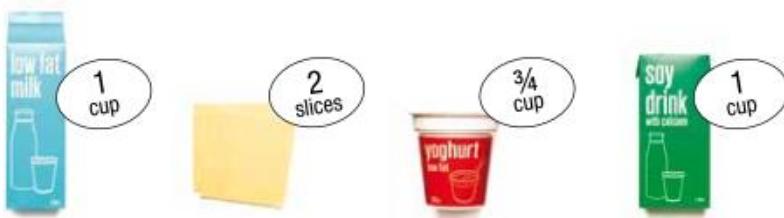
Certain dairy products and their non-dairy alternatives are an essential component of a healthy diet. Milk, cheese and yoghurt are rich sources of calcium, protein, vitamins and minerals. The Australian Dietary Guidelines (ADG) recommend choosing low fat varieties for everyone over two years of age as full fat varieties can increase the saturated fat content of the diet and reduced fat varieties enable nutrient guidelines to be met without exceeding energy requirements. Full fat varieties are recommended for children under two.¹

Alternatives are available for those who do not consume dairy. Products such as calcium-enriched soy or rice drinks count towards the serves in this food group. Other products high in calcium such as almonds, tofu, seafood, fish with bones and many plant foods may also be consumed as alternatives but are not included in this analysis for the *milk, yoghurt, cheese and alternatives* food group.²

How much is a serve of milk, yoghurt, cheese and alternatives?*

A standard serve is (500-600 kJ):

- 1 cup (250ml) fresh, UHT long life, reconstituted powdered milk or buttermilk
- $\frac{1}{2}$ cup (120ml) evaporated milk
- 2 slices (40 g) of hard cheese, such as cheddar
- $\frac{3}{4}$ cup yoghurt



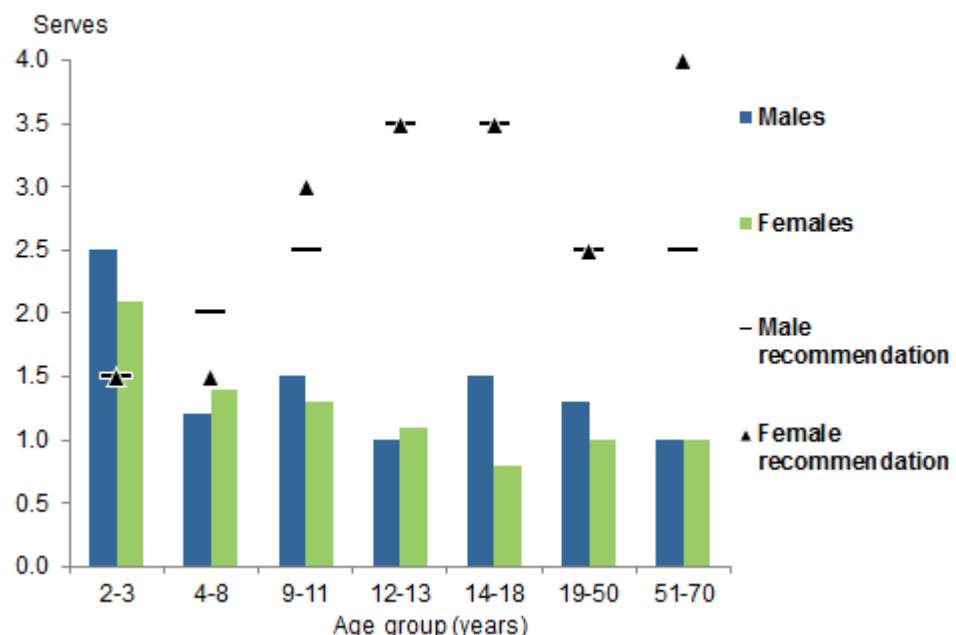
*Choose mostly reduced fat

Source: National Health and Medical Research Council¹

CONSUMPTION OF MILK, YOGHURT, CHEESE AND ALTERNATIVES

In 2012-13 Aboriginal and Torres Strait Islander people aged 2 years and over consumed an average 1.2 serves of *milk, yoghurt, cheese and alternatives* per day. On average, 2-18 year olds consumed a greater number of serves than those 19 years and over (1.4 serves compared with 1.1 serves), with the peak consumption occurring among 2-3 year olds with an average 2.3 serves per day.

Persons 2-70 years - Average serves of milk, yoghurt, cheese and alternatives consumed by sex(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

The average daily consumption of *milk, yoghurt, cheese and alternatives* for each age-sex group of Aboriginal and Torres Strait Islander people, with the exception of children aged 2-3 years and girls 4-8 years, was significantly lower than the respective recommend number of serves.

Milk, yoghurt, cheese and alternatives: Recommended number of serves per day and average serves consumed

Age group (years)	Recommended minimum (a)		Average (b)	
	Serves		Serves	
	Males	Females	Males	Females
2-3	1½	1½	2.5	2.1
4-8	2	1½	1.2	1.4
9-11	2½	3	1.5	1.3
12-13	3½	3½ *	1.0	1.1
14-18	3½	3½ *	1.5	0.8
19-50	2½	2½ *	1.3	1.0
51-70	2½	4	1.0	1.0
71+	3½	4	..	..
Total (c)	..	..	1.3	1.1

(a) National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*

https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf

(b) Daily average consumed from non-discretionary sources

(c) Includes persons aged 71 years and over

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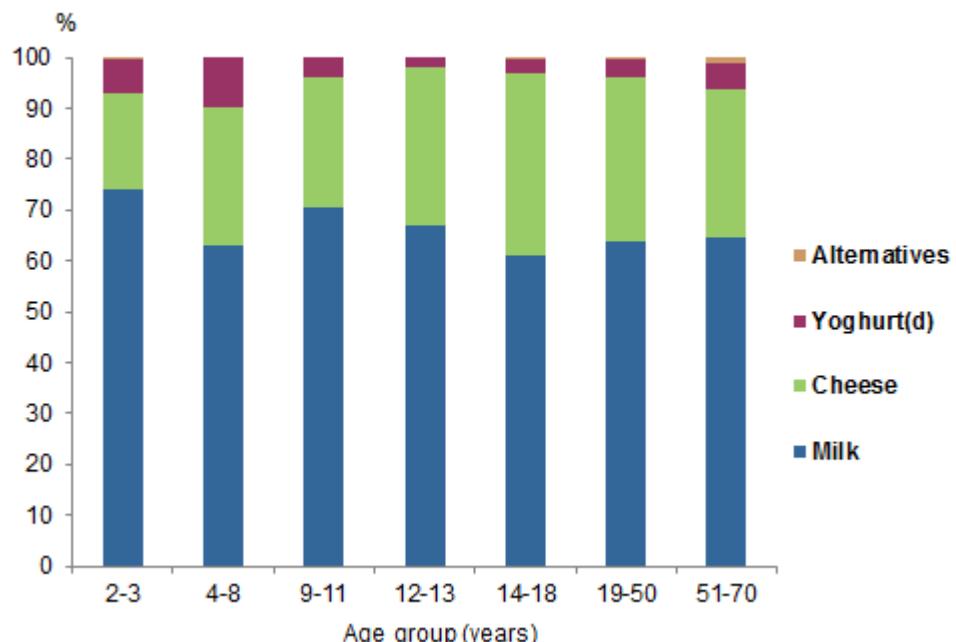
*The Guidelines recommend 3.5 serves of milk, yoghurt, cheese and alternatives for pregnant women up to 18 years, and 4 serves for breastfeeding women the same age. For breastfeeding and pregnant women 19-50 years the Guidelines recommend 2.5 serves.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

AMOUNT FROM MILK, YOGHURT, CHEESE AND ALTERNATIVES

Dairy milk provided almost two-thirds (65%) of the serves of this group. This was followed by cheese (30%), yoghurt and dairy snacks (4.9%) and 0.3% from dairy alternatives (such as calcium enriched soy and rice drinks).

Persons 2-70 years - Proportion of serves, milk, yoghurt, cheese and alternatives by age group(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

(d) Includes dairy snacks such as custard and fromage frais.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

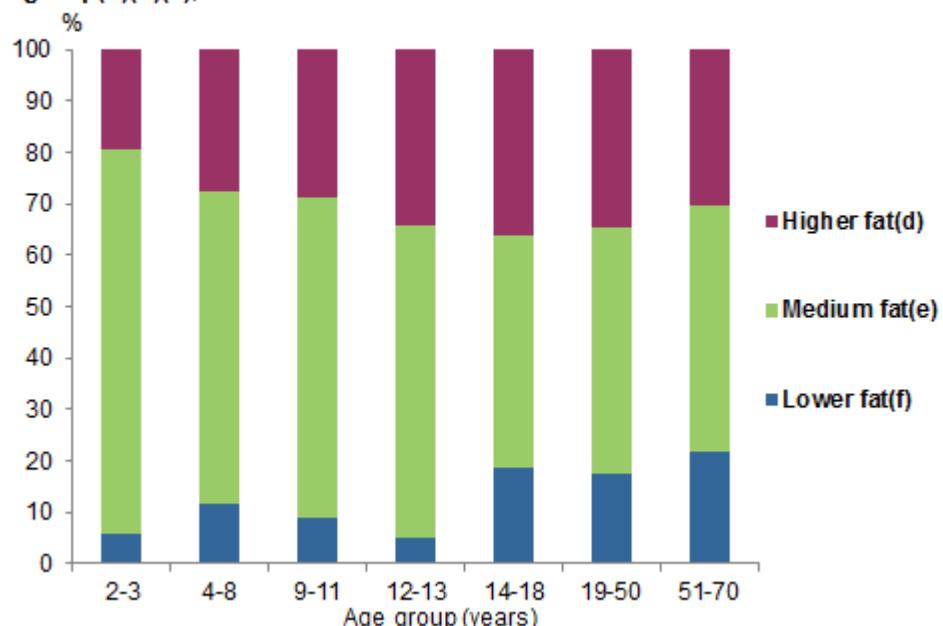
Milk added to cereal accounted for 30% of the dairy milk consumed, with the milk in tea and coffee providing 28%.

The cheese contributing to the total non-discretionary *milk, yoghurt, cheese and alternatives* was most commonly consumed in sandwiches, rolls and on toast (58%). A further 14% was in (non-discretionary) pizza while 8% was consumed alone and not consumed as part of a mixed dish or combined with other food, with the remainder being consumed in other mixed dishes and combinations.

HIGHER, MEDIUM AND LOWER FAT VARIETIES³

The ADG recommends choosing reduced fat varieties of *milk, yoghurt, cheese and alternatives* for everyone over two years on most occasions in order to ensure nutrient requirements are met without exceeding energy requirements. The lower fat sub-group (defined as including reduced fat milk and other products having less than 4 g of fat per serving)⁴ made up 15% of all non-discretionary serves of the *milk, yoghurt, cheese and alternatives* group, with 54% being made up of medium fat (defined as regular fat milk plus other products with a fat level between 4 to 10 g per 100 g). Higher fat (which includes mostly cheese and yogurts with fat content greater than 10 g per 100 g) accounted for 31%.

Persons 2-70 years - Proportion of serves, lower, medium and higher fat milk, yoghurt, cheese and alternatives by age group(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

(d) Includes mostly cheese and yoghurt with fat content greater than 10 g per 100 g.

(e) Includes regular fat milk and alternatives plus yoghurt and cheese with fat content between 4 g and 10 g per 100 g.

(f) Includes reduced fat milk and alternatives plus yoghurt and cheese with fat content less than 4 g per 100 g.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Adults 19 years and over consumed a larger proportion of lower fat varieties (18%) compared with those 2-18 years (11%) with the pattern being largely driven by the fat level of dairy milk consumed. For example, just 11% of the milk consumed by 2-18 year olds was lower/reduced fat, compared with 24% for adults 19 years and over.

The Higher fat component of the *milk, yoghurt, cheese and alternatives* group was mostly (93%) made up of cheese and accounted for 31% of all the non-discretionary *milk, yoghurt, cheese and alternatives* food group. Intakes of higher fat *milk, yoghurt, cheese and alternatives* were not significantly different between those aged 2-18 and 19 years and over.

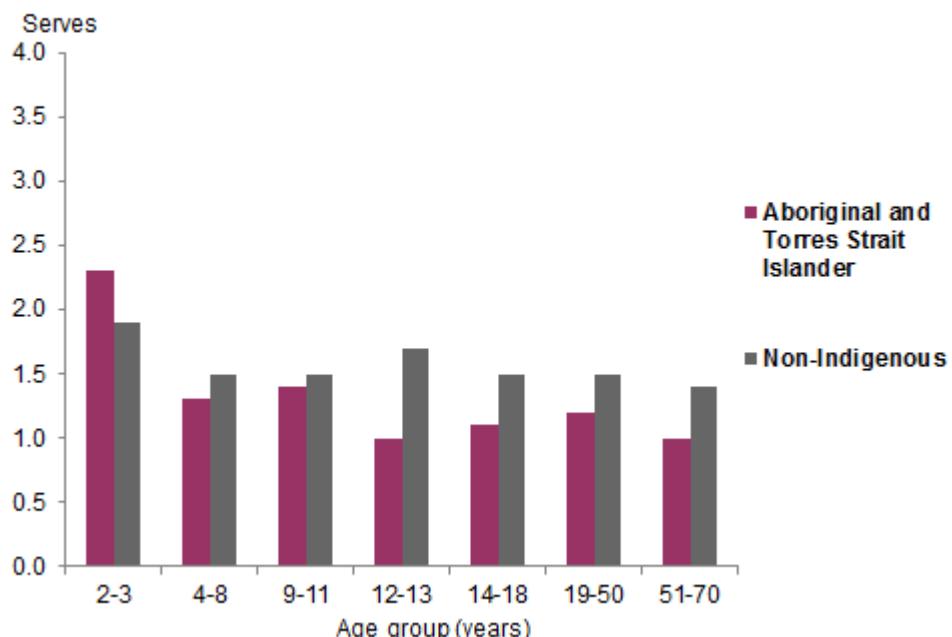
BY REMOTENESS

Overall, the average serves of *milk, yoghurt, cheese and alternatives* consumed was higher in non-remote areas than remote (1.3 serves compared with 0.9 serves). Lower fat dairy foods contributed a higher proportion of serves for Aboriginal and Torres Strait Islander people living in non-remote areas compared with people living in remote areas (17% and 7% respectively).

COMPARED WITH NON-INDIGENOUS PEOPLE

The average intake of *milk, yoghurt, cheese and alternatives* by Aboriginal and Torres Strait Islander people was lower than that of non-Indigenous people (1.2 serves compared with 1.5 serves). This difference was reflected in both the 2-18 years and 19 years and over age groups. Aboriginal and Torres Strait Islander people also derived a smaller share of serves from low fat dairy products than non-Indigenous people (15% compared with 29%).

Persons 2-70 years - Average serves of milk, yoghurt, cheese and alternatives consumed by Indigenous status(a)(b), 2011-13



(a) Based on Day 1. See Glossary for definition.

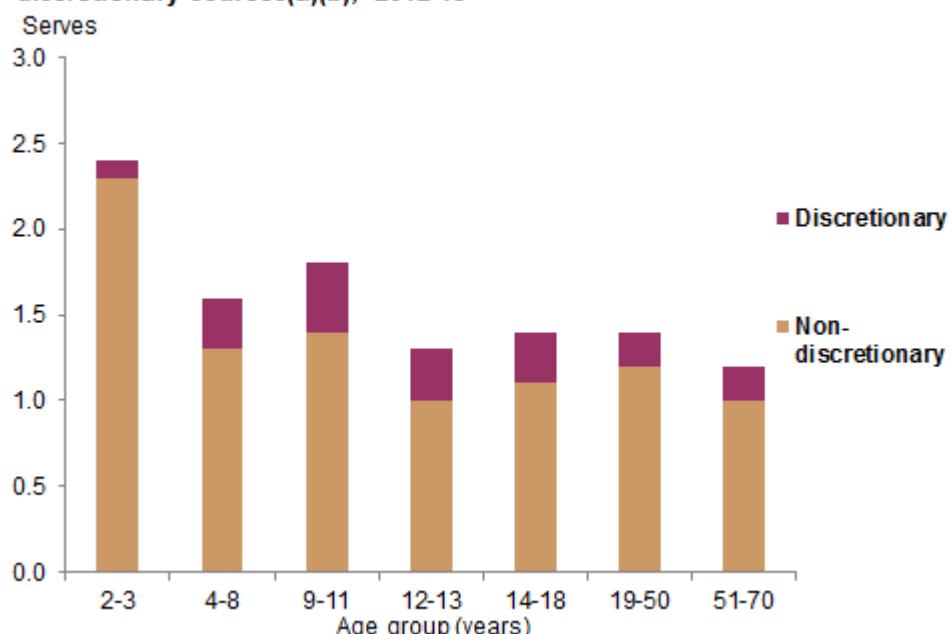
(b) From non-discretionary sources.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

MILK, YOGHURT CHEESE AND ALTERNATIVE FROM DISCRETIONARY SOURCES

The *milk, yoghurt, cheese and alternatives* food group in the ADG excludes all discretionary sources. For this reason, the above analysis also excludes discretionary foods which contain *milk, yoghurt, cheese and alternatives*. However, if *milk, yoghurt, cheese and alternatives* from discretionary sources were included, they would raise average intakes by 0.2 serves, to 1.5 serves. Children and young people aged 2-18 years had a slightly higher intake of discretionary dairy with 0.3 serves, compared with 0.2 serves in those aged 19 years and over.

Persons 2-70 years - Average serves of milk, yoghurt, cheese and alternatives consumed from discretionary and non-discretionary sources(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Frozen milk products (ice cream and frozen yoghurts) made up the largest proportion of *milk, yoghurt, cheese and alternatives* from discretionary sources, at 29%. Chocolate and chocolate based confectionery was the second highest with 17%. These were followed by pizzas (9%) and burgers (6%), both with saturated fat content greater than 5 g/100 g.

ENDNOTES

1. National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.
<https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf>, Last accessed 27/10/2016
2. The ADGs also lists several foods that are likely to contain a similar amount of calcium as a serve of milk, yoghurt or cheese. However, as these alternatives are all classified elsewhere they have not been included within 'dairy alternatives'. For more information, please see [AHS ADG Classification system Explanatory Notes](#).
3. Lower fat products include reduced fat and skim milk, and yoghurt with less than 4g/100 g of fat. Higher fat dairy products include cheese and yoghurt with a fat content of greater than 10g/100 g. Medium fat products include cheese and yoghurt with a fat content between 4g and 10 g per 100 g. This group also includes regular fat milk, which although mostly has a fat level less than 4 g per 100 g, was included in medium fat to be consistent with the ADG modelling and recommendations. See [AHS ADG Classification system Explanatory Notes](#).
4. National Health and Medical Research Council, 2011, A modelling system to inform the revision of the Australian guide to healthy eating, Canberra: Australian Government
<https://www.eatforhealth.gov.au/sites/default/files/files/public_consultation/n55a_dietary_guidelines_food_modelling_111216.pdf>, Last accessed 27/10/2016

LEAN MEAT AND POULTRY, FISH, EGGS, TOFU, NUTS AND SEEDS AND LEGUMES/BEANS

The *lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* is a diverse group of foods, both nutritionally and biologically.¹ This group is an important source of protein as well as a range of micronutrients such as iodine, iron, zinc, vitamin B12 and long chain polyunsaturated fatty acids (omega-3s).

How much is a serve of lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans*?

A standard serve is (500-600 kJ):

- 65 g cooked lean red meats such as beef, lamb, veal, pork, goat or kangaroo (about 90-100 g raw)
- 80 g cooked lean poultry such as chicken or turkey (100 g raw)
- 2 large eggs (120 g)
- 1 cup (150 g) cooked or canned legumes/beans such as lentils, chick peas or split peas**
- 170 g tofu
- 30 g nuts, seeds, peanut or almond butter or tahini or other nut or seed paste***



*Choose those with no added salt

** Legumes/beans also contribute to serves within the Vegetables and legumes/beans group; see Glossary and Appendix 2 for more information

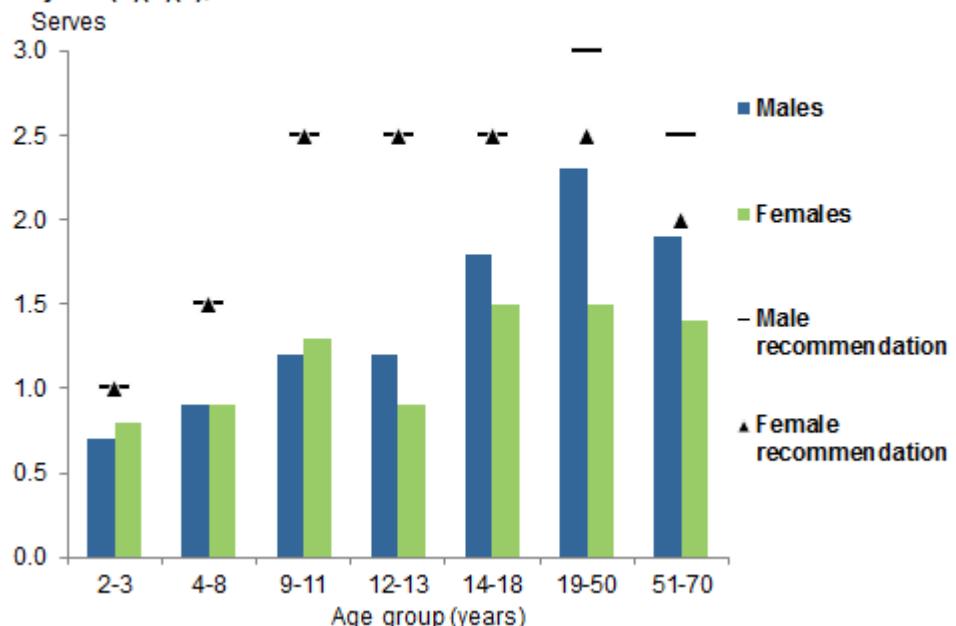
*** Nuts/seeds also contribute to serves within the unsaturated fats and oils group; see Glossary and Appendix 2 for more information

Source: National Health and Medical Research Council¹

CONSUMPTION OF LEAN MEAT AND POULTRY, FISH, EGGS, TOFU, NUTS AND SEEDS AND LEGUMES/BEANS

In 2012-13, Aboriginal and Torres Strait Islander people consumed an average 1.6 serves of *lean meat and poultry, fish, eggs, nut and seeds and legumes/beans* per day. The average number of serves consumed generally increased with age, peaking at 2.3 serves for males aged 19-50 years, and 1.5 serves for females 14-50 years. Males consumed more serves on average than females (1.8 serves and 1.3 serves respectively).

Persons 2-70 years - Average serves of lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans consumed by sex(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

The average daily consumption of *lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* for each age-sex group of Aboriginal and Torres Strait Islander people, with the exception of girls 2-3 years, was significantly less than the respective recommendations. Aboriginal and Torres Strait Islander children aged 9-13 years consumed an average of 1.2 serves, around one-half of the minimum recommended (2.5) for children this age.

Lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans: Recommended number of serves per day and average serves consumed

Age group (years)	Recommended minimum (a)		Average (b)	
	Serves		Serves	
	Males	Females	Males	Females
2-3	1	1	0.7	0.8
4-8	1½	1½	0.9	0.9
9-11	2½	2½	1.2	1.3
12-13	2½	2½	1.2	0.9
14-18	2½	2½*	1.8	1.5
19-50	3	2½*	2.3	1.5
51-70	2½	2	1.9	1.4
71+	2½	2	..	..
Total (c)	..	..	1.8	1.3

(a) National Health and Medical Research Council, 2013, Australian Dietary Guidelines

https://www.nhmrc.gov.au/files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf

(b) Daily average consumed from non-discretionary sources

(c) Includes persons aged 71 years and over

.. Not available

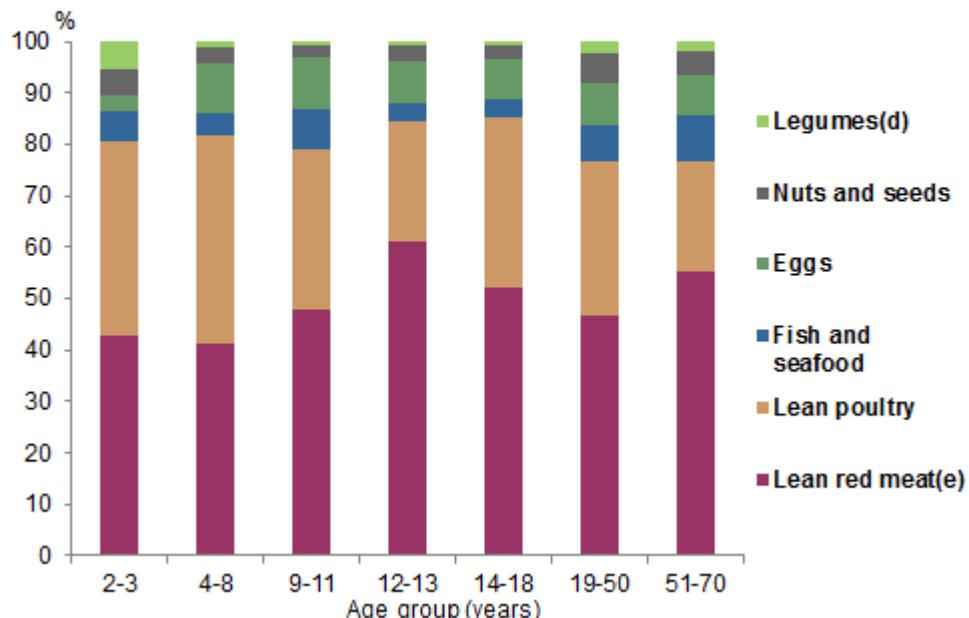
* For pregnant women of all ages, the Guidelines recommend 3.5 serves of lean meats, poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans and 2.5 serves for breastfeeding women of all ages.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

TYPES OF LEAN MEAT AND POULTRY, FISH, EGGS, TOFU, NUTS AND SEEDS AND LEGUMES/BEANS

Lean red meat plus poultry made up 79% of the serves consumed from the *lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* group. Red meat, including beef, veal, lamb, pork and kangaroo contributed almost half (49%), with poultry making up 30%. The remaining serves came from eggs (8.2%), fish and seafood (6.6%), nuts and seeds (4.8%) and legumes (1.8%).

Persons 2-70 years - Proportion of serves, lean meats and poultry, fish and seafood, eggs, nuts and seeds and legumes by age group(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

(d) Legumes as a meat alternative. Legumes also count towards the Vegetables and legumes/beans food group.

(e) Includes beef, veal, lamb, pork and kangaroo.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

BY REMOTENESS

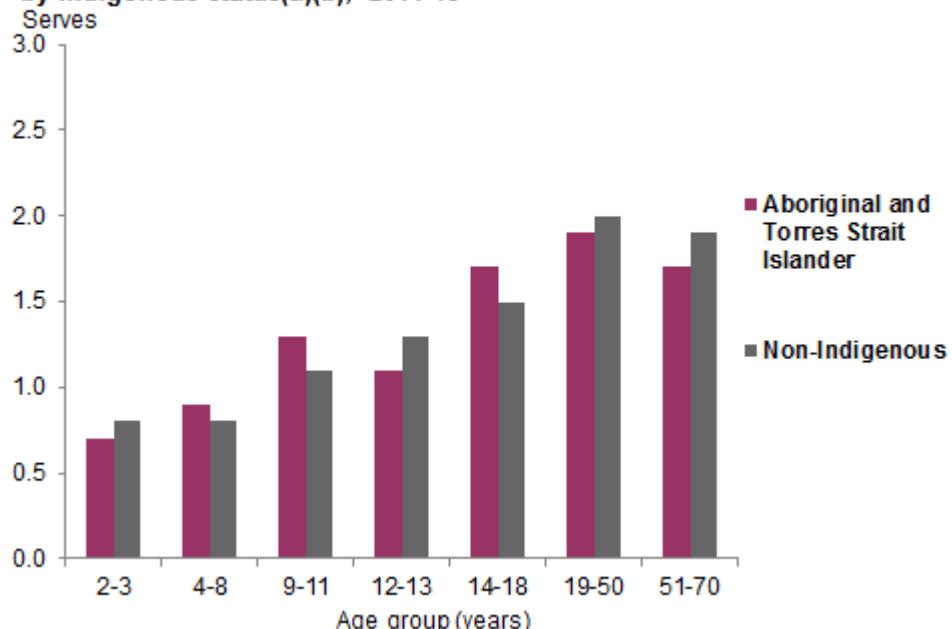
Aboriginal and Torres Strait Islander people living in non-remote areas consumed 0.6 serves less of *lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* than Aboriginal and Torres Strait Islander people living in remote areas (1.4 serves compared with 2.0 serves).

Aboriginal and Torres Strait Islander people living in remote areas derived a greater proportion of their serves from lean red meats (61% compared with 44% for people in non-remote areas). On the other hand just 19% of *lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* consumed by the remote population came from poultry compared with 34% among the non-remote population.

COMPARED WITH NON-INDIGENOUS PEOPLE

On average, Aboriginal and Torres Strait Islander people consumed fewer serves of *lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* than non-Indigenous people (1.6 serves compared with 1.7 serves).

Persons 2-70 years - Average serves of lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans consumed by Indigenous status(a)(b), 2011-13



(a) Based on Day 1. See Glossary for definition.

(b) From non-discretionary sources.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

Overall, lean red meats and poultry contributed a greater share of serves for Aboriginal and Torres Strait Islander people compared with non-Indigenous people (79% compared with 67%), while a smaller share came from nuts/seeds and legumes compared to non-Indigenous people (6.7% and 16% respectively).

CONSUMPTION OF NON-LEAN AND PROCESSED MEAT

The estimated number of serves of *lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* excluded meats defined as non-lean and/or processed. This is consistent with the Australian Dietary Guidelines advice that meat consumption should be limited to the lean and unprocessed varieties.¹ The definitions of lean and unprocessed were based on the AHS ADG Classification system² which used:

- <10% fat as the criteria for 'lean meat' (e.g. lower fat mince)
- the 'unprocessed' sub-classification only, in order to exclude meats such as ham, bacon, salami, and poultry luncheon meats.

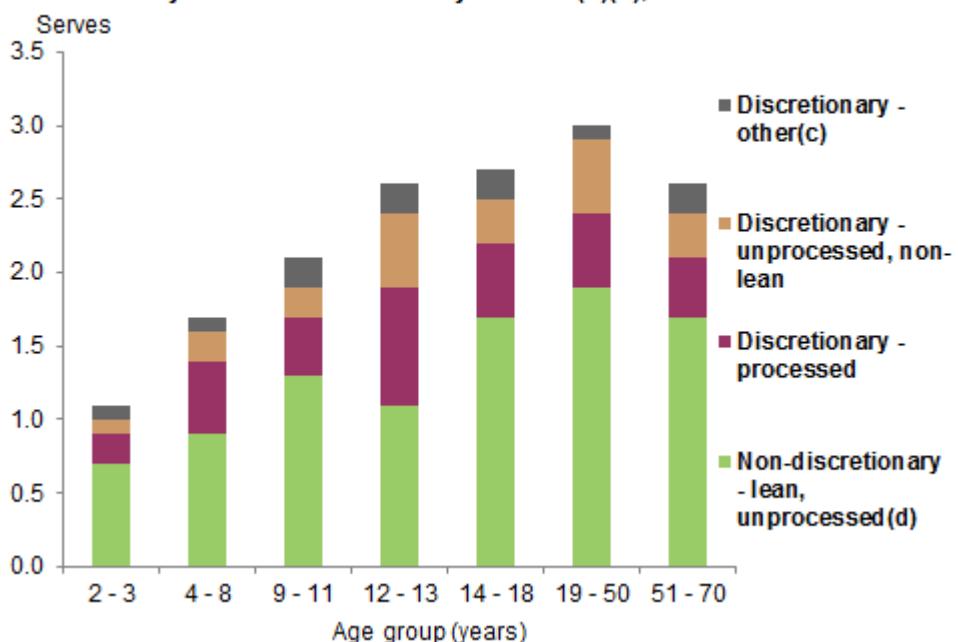
In addition to these criteria, any *lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* from discretionary sources (such as battered, deep-fried fish) were excluded.

On average, Aboriginal and Torres Strait Islander people consumed 0.5 serves of processed meats, and 0.4 serves of non-lean unprocessed meats per day. The greatest consumption of processed meats was among males aged 12-13 years who would consume an average 1.0 serves of processed meats per day.

Overall, the inclusion of higher fat and processed meats and all other discretionary sources of *lean meats, poultry, fish, eggs, tofu, nuts and seeds and legumes/beans* would add an extra serve to the ADG average of 1.6 serves (from lean, unprocessed and non-discretionary sources).

The most common sources of discretionary meats were higher fat sausages, contributing 15% of total discretionary meat. Lamb and mutton (of higher fat varieties³) and beef (of higher fat varieties³) were the next highest sources, with each making up 9%. Ham was the fourth highest, contributing 8%.

Persons 2-70 years - Average serves lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans from discretionary and non-discretionary sources(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

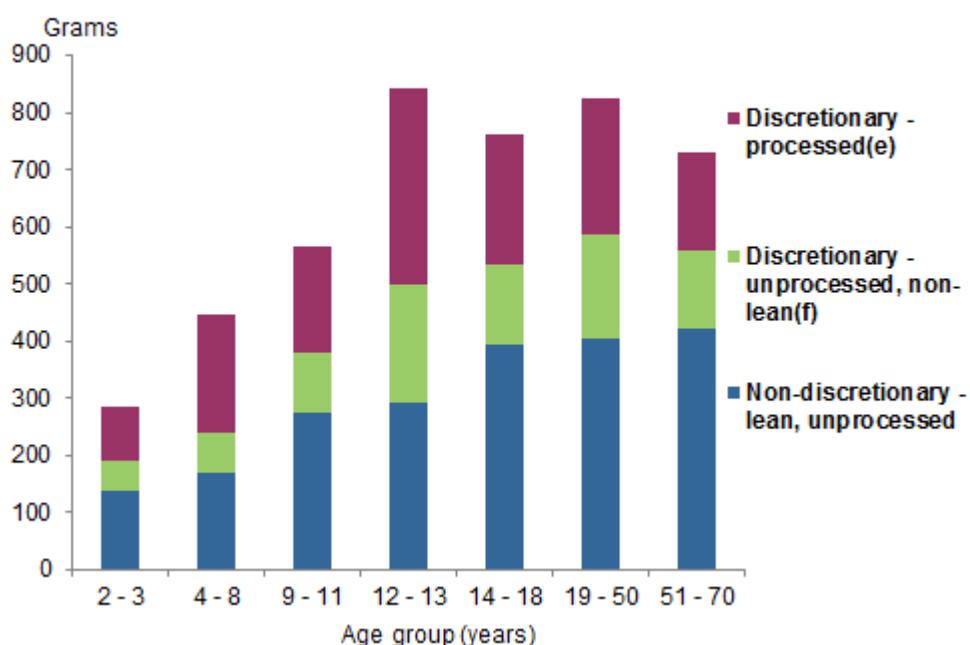
(c) Includes foods such as battered fish and lean chicken in a spring roll.

(d) Includes lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

The Guidelines include advice that weekly consumption of lean meats for adults be limited to a maximum of 455 g to reduce the health risks associated with meat and to promote variety within the food group.¹ For adult males, the average weekly consumption⁴ of lean red meats was 506 g, while adult females averaged 315 g. Taking into account all forms of red meat (including all non-discretionary, lean, discretionary, higher fat and processed varieties), the total weekly consumption of red meats was estimated at 973 g for adult males and 637 g for adult females.

Persons 2-70 years - Average grams of red meat consumed per week(a)(b)(c)(d), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) Includes beef, veal, lamb, pork and kangaroo.

(d) Weekly consumption was calculated by multiplying Day 1 mean intake by 7. It includes all respondents, consumers and non-consumers.

(e) Includes meats such as ham, bacon and sausages made from red meat.

(f) Includes high fat unprocessed red meats plus unprocessed lean meats found in discretionary dishes.
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

ENDNOTES

1. National Health and Medical Research Council, 2013, Australian Dietary Guidelines. Canberra: Australian Government.
<https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf>, Last accessed 27/10/2016
2. Food Standards Australia New Zealand, 2016, *Assessing the 2011-13 AHS against the Australian Dietary Guidelines - Classification System and Database Development Explanatory notes*. Canberra: Australian Government <<http://www.foodstandards.gov.au/science/monitoringnutrients/ausnut/>>, Last accessed 27/10/2016
3. Lamb and mutton and beef from non-lean varieties with a fat content $\geq 10\%$.
4. Weekly consumption was calculated by multiplying Day 1 mean intake by 7. It includes all respondents, consumers and non-consumers.

GRAIN (CEREALS)

Grain (cereal) foods include products such as bread, breakfast cereals, pasta and tortilla which are mostly made from wheat, oats, rice, rye, barley, millet, quinoa and corn. Eating grain foods, mostly wholegrain or high fibre, can help protect against heart disease, type 2-diabetes and excessive weight gain and may help reduce risk of some cancers.¹

How much is a serve of grain (cereal) foods*?

A standard serve is (500 kJ) or:

- 1 slice (40 g) of bread
- $\frac{1}{2}$ cup (75-120 g) cooked rice, pasta, noodles, barley, buckwheat, semolina, polenta, bulgur or quinoa
- $\frac{1}{4}$ cup (30 g) muesli
- 3 (35 g) crispbreads



*Grain (cereal) foods, mostly wholegrain and/or higher cereal fibre varieties

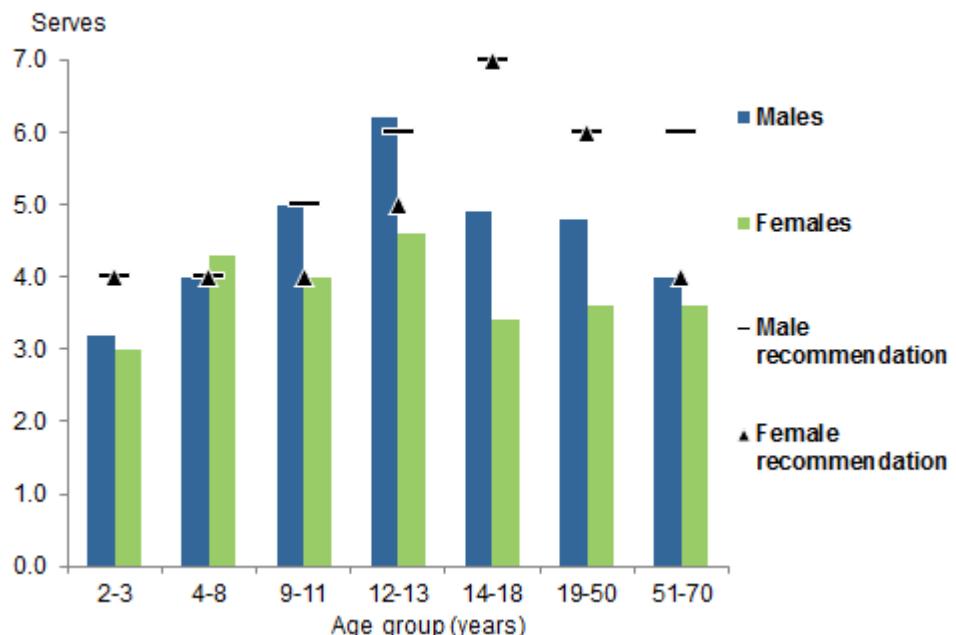
Source: National Health and Medical Research Council¹

CONSUMPTION OF GRAIN (CEREAL) FOODS

In 2012-13, Aboriginal and Torres Strait Islander people aged 2 years and over consumed an average 4.1 serves of *grain (cereal)* foods from non-discretionary sources per day, with males consuming 4.6 serves and females 3.7 serves.

Among males, the average number of serves consumed peaked at 6.2 serves among 12-13 year olds, with a gradual drop off in consumption in the older age groups. The average consumption of grains by females also peaked at 12-13 years (4.6 serves), although the average consumption remained relatively constant across age groups.

Persons 2-70 years - Average serves of grain (cereal) consumed by sex(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

The average number of serves per day consumed by males 4-13 years and females aged 4-11 years was equal to or greater than the minimum ADG recommendations.² However, the average intake for females 14-18 years (3.4 serves) was less than half the recommended 7 serves for that group.

Grain (cereal): Recommended number of serves per day and average serves consumed

Age group (years)	Recommended minimum (a)		Average (b)	
	Males	Females	Males	Females
2-3	4	4	3.2	3.0
4-8	4	4	4.0	4.3
9-11	5	4	5.0	4.0
12-13	6	5	6.2	4.6
14-18	7	7*	4.9	3.4
19-50	6	6*	4.8	3.6
51-70	6	4	4.0	3.6
71+	4½	3	..	..
Total (c)	..	..	4.6	3.7

(a) National Health and Medical Research Council, 2013, Australian Dietary Guidelines

https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf

(b) Daily average consumed from non-discretionary sources.

(c) Includes persons aged 71 years and over

.. Not available

* For breastfeeding women, the Guidelines recommend 9 serves of grain (cereals), while for pregnant women aged 14-18 years, 8 serves are recommended and for pregnant women aged 19-50 years and 8.5 serves are recommended.

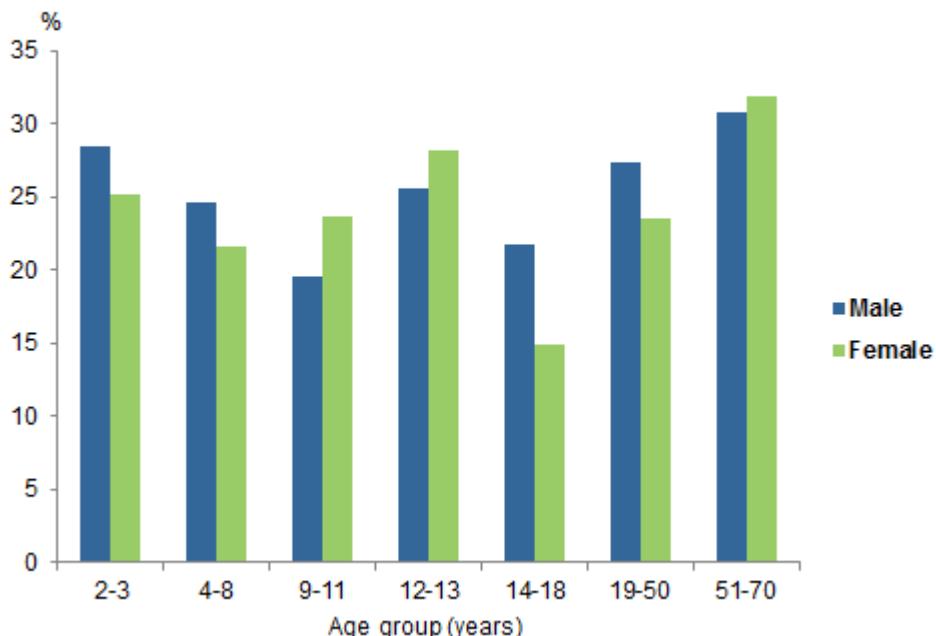
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

HOW MUCH WAS WHOLEGRAIN OR HIGH FIBRE?

The Australian Dietary Guidelines recommend that at least two-thirds of grain products should be wholegrain and/or higher fibre varieties.¹³ Wholegrain and/or higher fibre varieties contributed one-quarter (25%) of grain (cereal) foods consumed by Aboriginal and Torres Strait Islander people.

Among adults aged 51-70 years wholegrain and/or higher fibre varieties contributed to almost one-third (31%) of grain (*cereal*) foods consumed, 12 percentage points more than adolescents 14-18 years (19%).

Persons 2-70 years - Proportion of serves, grain (*cereal*) from wholegrain or higher fibre varieties by sex(a)(b)(c), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

SOURCES OF GRAIN (CEREAL)

Regular breads and bread rolls (plain/unfilled/untopped varieties) were the greatest source of grain (*cereal*) foods, contributing to 47% of serves consumed. The second largest contributor to the grain (*cereal*) group was mixed dishes where cereal is a major component (20%). This group included non-discretionary foods such as pasta, noodle and rice based dishes (6.6%) and lower saturated fat⁴ pizzas (5.7%) and lower saturated fat burgers⁴ (4.9%). A further 11% came from ready to eat breakfast cereals.

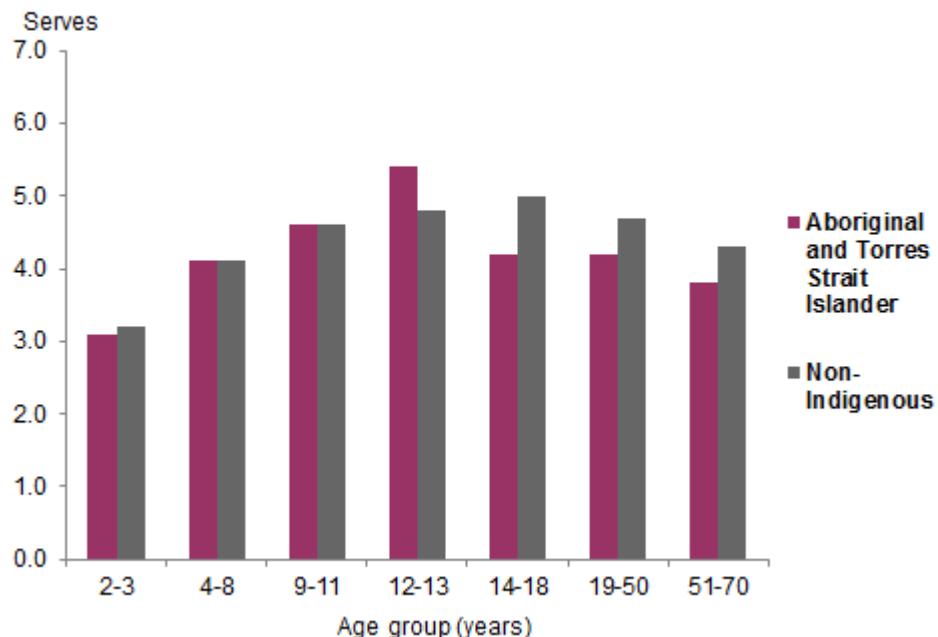
BY REMOTENESS

Overall, Aboriginal and Torres Strait Islander people living in remote areas consumed more serves of grain (*cereal*) foods on average compared with those living in non-remote areas (4.6 serves compared with 4.0 serves per day). This is consistent with previous findings from this survey⁵ showing a higher consumption of cereal and cereal products by Aboriginal and Torres Strait Islander people living in remote areas, mainly due a greater likelihood on any given day to consume bread (74% in remote and 69% in non-remote) and rice (23% remote and 8% non-remote).

COMPARED WITH NON-INDIGENOUS PEOPLE

Aboriginal and Torres Strait Islander people consumed less serves of grain (*cereal*) on average than non-Indigenous people (4.1 serves compared with 4.5 serves). In addition, Aboriginal and Torres Strait Islander people had a lower proportion of their grain (*cereal*) serves contributed by wholegrain and/or high fibre foods compared with non-Indigenous people (25% and 34% respectively).

Persons 2-70 years - Average serves of grain (cereal) consumed by Indigenous status(a)(b), 2011-13



(a) Based on Day 1. See Glossary for definition.

(b) From non-discretionary sources.

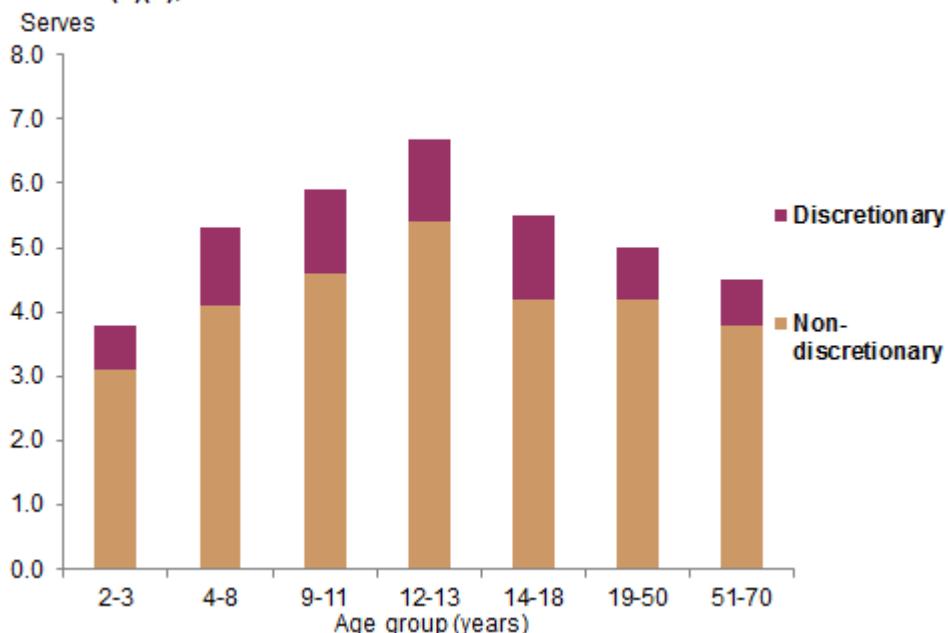
Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

GRAIN (CEREAL) FROM DISCRETIONARY SOURCES

The 'grain (cereal)' food group in the ADG excludes all discretionary sources. For this reason, the above analysis also excludes discretionary foods which contain grains. However if discretionary sources of *grain (cereal)* were accounted for, they would add an extra one serve, increasing the average intake from 4.1 serves on average to 5.1. Children and adolescents aged 4-18 years had the highest average intake of discretionary *grain (cereal)* foods, consuming 1.3 serves on average.

Discretionary sources make up a relatively greater contribution to *grain (cereal)* foods intake among children and adolescents ages 2-18 years than adults 19 years and over. Among those aged 2-18 years, discretionary sources provided an additional 1.2 serves compared with 0.8 serves for adults 19 years and over.

Persons 2-70 years - Average serves of grain (cereal) consumed from discretionary and non-discretionary sources(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Types of discretionary food sources contributing to grain (cereals) group

The most common type of grains consumed from discretionary sources was from the cereal based products and dishes group (59%). This includes foods such as pastries (such as sausage rolls and meat pies) which made up 23% of discretionary *grain (cereal)* serves, while cakes, muffins, scones and cake-type desserts contributed 12% followed mixed dishes where cereal is the major ingredient (10%) and snack foods (8.4%).

ENDNOTES

1. National Health and Medical Research Council, 2013, Australian Dietary Guidelines. Canberra: Australian Government.
https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf, Last accessed 27/10/2016
2. Although the average number of serves for males aged 4-13 and females aged 4-11 years was greater or equal to the minimum recommended, this should not be interpreted as all (or even most) children this age would meet the recommended minimum. This is because the average cannot indicate the proportion of the population who had a usual intake above or below the recommendation. See Explanatory Note 5.
3. Wholegrain products are foods that use every part of the grain (cereal).
4. Mixed dishes where cereal is a major component such as pizza, burgers and sandwiches were classified as non-discretionary where the saturated fat was less than 5 grams per 100 grams.
5. See: [Aboriginal and Torres Strait Islander Health Survey: Nutrition Results – Foods and Nutrients, 2012-13. \(cat. no.4727.0.55.005\)](#)

WATER

Consuming an adequate amount of water each day is essential for a range of physiological functions including digestion, absorption and transportation of nutrients, elimination of waste and regulation of body temperature.¹

Water can be plain (tap or bottled), or derived from beverages (e.g. tea, coffees or alcoholic drinks etc.) and as moisture from food sources. But drinking plain water is the most effective way to stay hydrated without undesirable energy, stimulant or diuretic effects.

Because the amount of water required varies depending on individual factors including body size, diet, climate and levels of physical activity¹ the Australian Dietary Guidelines do not provide target amounts for consumption, but make the general recommendation that Australians “drink plenty of water”.

Definitions

Plain water - tap and unflavoured bottled water

Water from non-discretionary beverages - the water component of non-discretionary beverages, such as water added to tea and coffee

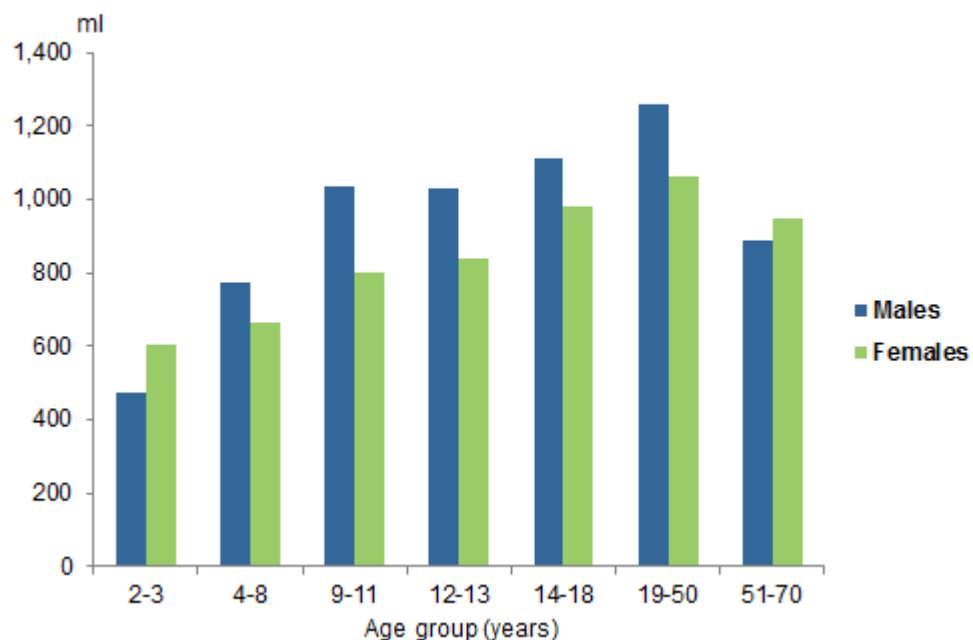
Remaining beverages - everything else that makes up the difference between the above two categories and total beverages. This includes discretionary beverages (including alcohol), soft drinks, milk and milk beverages, fruit juice as well as the non-water components of non-discretionary beverages. Excludes water.

Total beverages - all beverages consumed, both water and non-water components

CONSUMPTION OF PLAIN WATER

In 2012-13, the average amount of plain water, either tap or bottled, consumed by Aboriginal and Torres Strait Islander people each day was around one litre (997 ml). The average amount consumed steadily increased with age, peaking at 1,161 ml among those aged 19-50 years, followed by a drop in consumption in the older age groups. Overall, males had an average higher consumption of plain water than females (1,057 ml compared with 938 ml).

Persons 2-70 years - Average volume of plain water consumed by sex(a)(b)(c), 2012-13



- (a) Aboriginal and Torres Strait Islander people.
- (b) Based on Day 1. See Glossary for definition.
- (c) Includes tap and unflavoured bottled water.

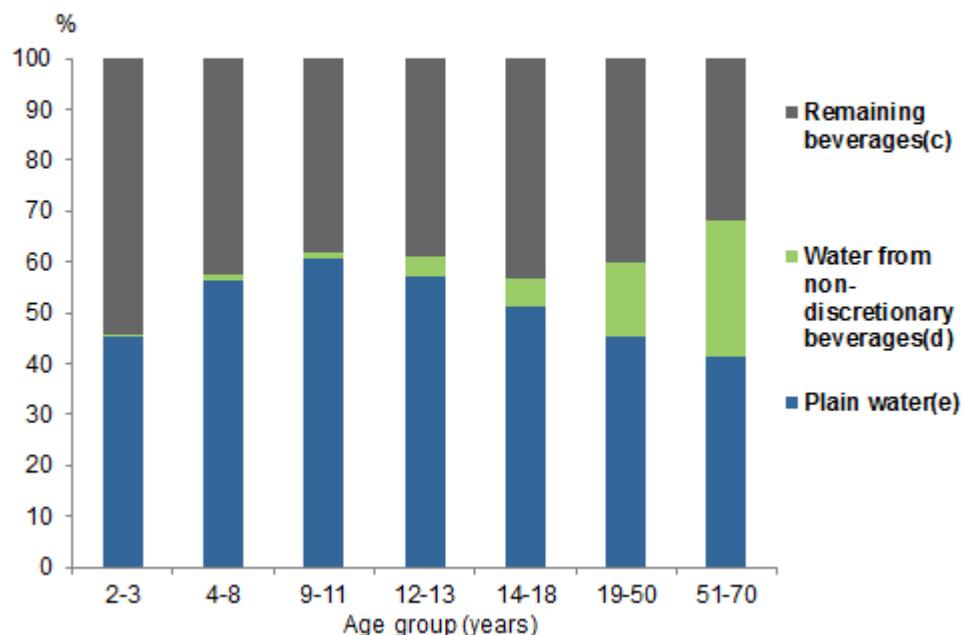
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

On average, Aboriginal and Torres Strait Islander people consumed an additional 262 ml of water derived from non-discretionary beverages (mainly tea and coffee). This brought the average amount of plain water and water from non-discretionary beverages consumed to a total of 1,259 ml per day. The water from non-discretionary beverages provided a considerable source of water for adults, especially for those aged 51-70 years (588ml) reflecting higher consumption of tea and coffee.

PLAIN WATER AS A PROPORTION OF TOTAL BEVERAGE CONSUMPTION

Plain water contributed less than half (48%) of Aboriginal and Torres Strait Islander peoples' total beverage consumption in 2012-13, with 28% from discretionary beverages (mainly soft drinks, alcohol and cordial) and 13% from water within non-discretionary beverages (mainly tea and coffee). The balance (12%) was made up of non-water based non-discretionary beverages such as juice and milk drinks.

Persons 2-70 years - Proportion of plain water, water from non-discretionary beverages and remaining beverages consumed by age group(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

(c) Includes all discretionary non-alcoholic beverages, alcoholic beverages, fruit juice, milk and milk substitutes.

(d) Includes the water component of non-discretionary beverages such as tea and coffee.

(e) Includes tap and unflavoured bottled water.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Plain water consumed as a proportion of total beverages was significantly higher among children than adults (54% compared with 45%). Plain water as a proportion of all beverages tended to decrease in age groups from 12-13 years and older, although the substitution from non-discretionary sources was generally with tea and coffee.

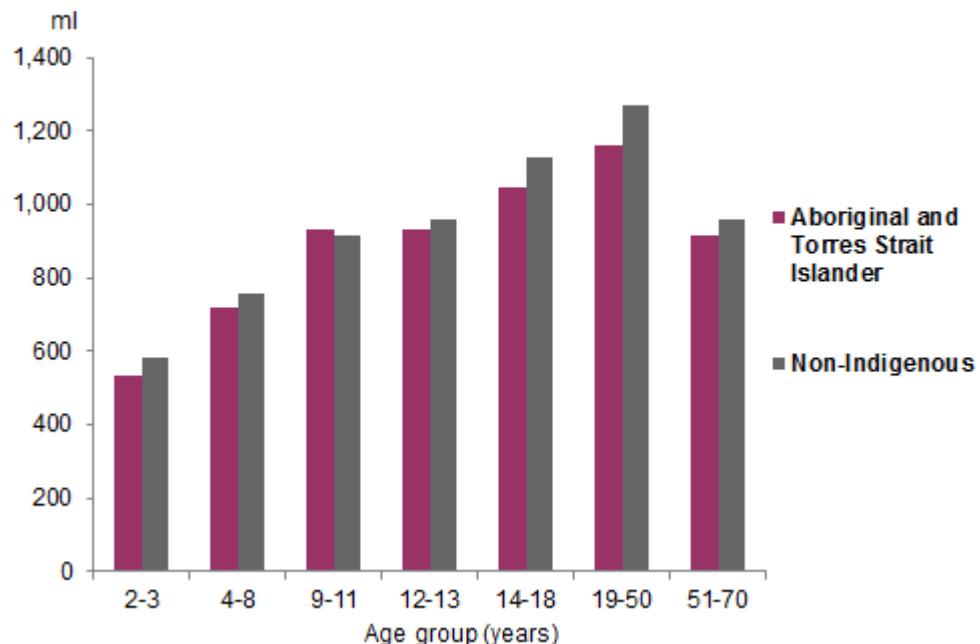
BY REMOTENESS

In 2012-13, Aboriginal and Torres Strait Islander people living in remote and non-remote areas consumed a similar amount of plain or tap water on an average day. However, Aboriginal and Torres Strait Islander people living in remote areas consumed more water from non-discretionary beverages (such as tea and coffee) as a proportion of total beverages than those in non-remote areas (15% compared with 12% of total beverages).

COMPARED WITH NON-INDIGENOUS PEOPLE

Aboriginal and Torres Strait Islander people consumed less plain water, on average, than non-Indigenous people (997 ml compared with 1,073 ml). In particular, Aboriginal and Torres Strait Islander adults aged 19-50 years consumed around 100 ml less on average than non-Indigenous adults in the same age group (1,161 ml compared with 1,273 ml).

Persons 2-70 years - Average volume of plain water consumed by Indigenous status(a)(b), 2011-13



(a) Based on Day 1. See Glossary for definition.

(b) Includes tap and unflavoured bottled water.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12.

As a proportion of total beverages consumed, Aboriginal and Torres Strait Islander people consumed a lower proportion of plain water than non-Indigenous people (48% compared with 50%).

ENDNOTES

- National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.
https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf, Last accessed 27/10/2016

UNSATURATED SPREADS AND OILS

The Australian Dietary Guidelines recommend that Australians limit consumption of foods containing saturated fats because of the evidence linking their consumption with poorer blood lipid profiles and cardiovascular disease.¹ Previous results² from the 2012-13 NATSINPAS showed Aboriginal and Torres Strait Islander people derived an estimated 13.1% of their dietary energy from saturated and trans-fats, exceeding the 10% limit recommended to reduce chronic disease risk.³

In contrast to saturated fats, consumption of polyunsaturated and monounsaturated fats is an important part of a healthy dietary pattern, supplying essential fatty acids and carrying fat soluble vitamins.¹ These fats may be readily sourced from many foods within the five food groups such as nuts, legumes/beans, avocado, oats, fish, lean meats and eggs.¹ In addition to the health benefits of unsaturated fats, the Guidelines acknowledge the palatability role played by additional fat with certain foods. Therefore, the Guidelines recommend small allowances of unsaturated spreads and oils which keep the extra energy from these foods within the total energy constraints of the diet.

What is a serve of unsaturated spreads and oils?

A standard serve is (250kj):

- 10 g polyunsaturated spread
- 10 g monounsaturated spread
- 7 g monounsaturated or polyunsaturated oil (e.g. olive, canola or sunflower oil)
- 10 g tree nuts or peanuts or nut pastes/butters *

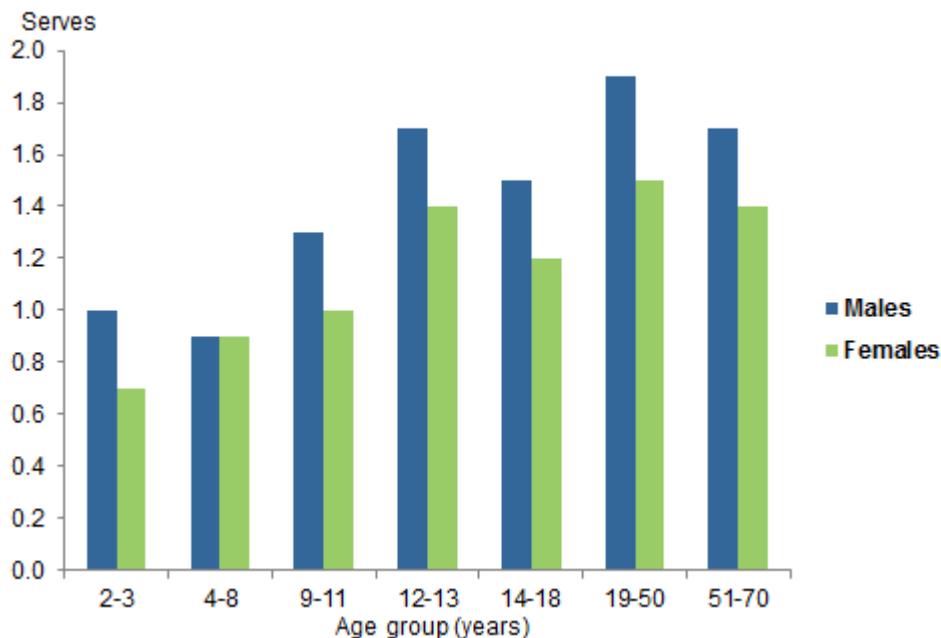
*Nuts/seeds also contribute to serves within the lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans group.

The following analysis is based on the measurement of *unsaturated spreads and oils* in the 2012-13 NATSINPAS. The foods contributing to this group include margarines and oils made from polyunsaturated and monounsaturated oils, nuts and nut pastes and products containing any of these ingredients.⁴

CONSUMPTION OF UNSATURATED SPREADS AND OILS

In 2012-13, Aboriginal and Torres Strait Islander people aged 2 years and over consumed an average 1.4 serves of *unsaturated spreads and oils* from non-discretionary sources. Consumption of *unsaturated spreads and oils* increased with age, children aged 2-18 years having 1.1 serves on average, while adults 19 years and over consumed 1.7 serves on average. Males consumed more serves of *unsaturated spreads and oils* than females (1.6 serves compared to 1.3 serves).

Persons 2-70 years - Average serves of unsaturated spreads and oils consumed by sex(a)(b)(c), 2012-13



- (a) Aboriginal and Torres Strait Islander people.
- (b) Based on Day 1. See Glossary for definition.
- (c) From non-discretionary sources.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

The average daily consumption of *unsaturated spreads and oils* for each age-sex group of Aboriginal and Torres Strait Islander people, with the exception of children aged 2-13 years, was significantly lower than the respective recommend allowance.

Unsaturated spreads and oils: recommended allowance and average serves consumed

Age group (years)	Recommended allowance (a)		Average (b)	
	Males	Females	Males	Females
2-3	½	½	1.0	0.7
4-8	1	1	0.9	0.9
9-11	1	1	1.3	1.0
12-13	1½	1½	1.7	1.4
14-18	2	2*	1.5	1.2
19-50	4	2*	1.9	1.5
51-70	4	2	1.7	1.4
71+	2	2	..	..
Total (c)	..	..	1.6	1.3

- (a) National Health and Medical Research Council, 2013, *Australian Dietary Guidelines* https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf

(b) Daily average consumed from non-discretionary sources

(c) Includes persons aged 71 years and over

.. Not available

*For pregnant and breastfeeding women of all ages the unsaturated spreads and oils allowance is 2 serves.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

SOURCES OF UNSATURATED SPREADS AND OILS

Unsaturated spreads and oils can come from a wide variety of non-discretionary food sources, although the main food sources can be broadly grouped into five main categories. These were:

- Fats and oils (mostly margarine and table spreads) contributed 28% of unsaturated spreads and oils consumption.

- Meat and poultry dishes made up 27%, with a higher contribution for people living in remote areas compared with non-remote areas (41% compared with 26%).
- Nuts and seeds made up 16% of this group.
- Mixed dishes where cereal is a major component (e.g. non-discretionary pizzas, burgers, pasta) contributed 13%.
- Vegetable products and dishes contributed 7% with potato being a major category in this group (3.8%).

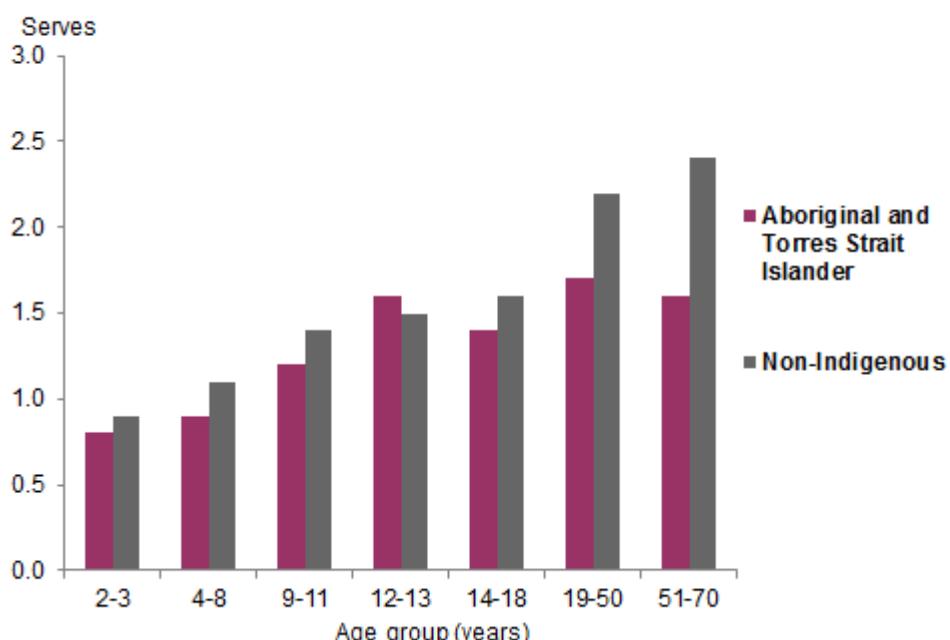
BY REMOTENESS

Aboriginal and Torres Strait Islander people living in remote areas consumed 1.2 serves of *unsaturated spreads and oils*; this was less than those in non-remote areas who consumed 1.5 serves on average.

COMPARED WITH NON-INDIGENOUS

On average, Aboriginal and Torres Strait Islander people consumed less serves of *unsaturated spreads and oils* than non-Indigenous people (1.4 and 2.0 serves respectively).

Persons 2-70 years - Average serves of unsaturated spreads and oils consumed by Indigenous status(a)(b), 2011-13



(a) Based on Day 1. See Glossary for definition.

(b) From non-discretionary sources.

Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13 and the National Nutrition and Physical Activity Survey, 2011-12

UNSATURATED SPREADS AND OILS FROM DISCRETIONARY SOURCES

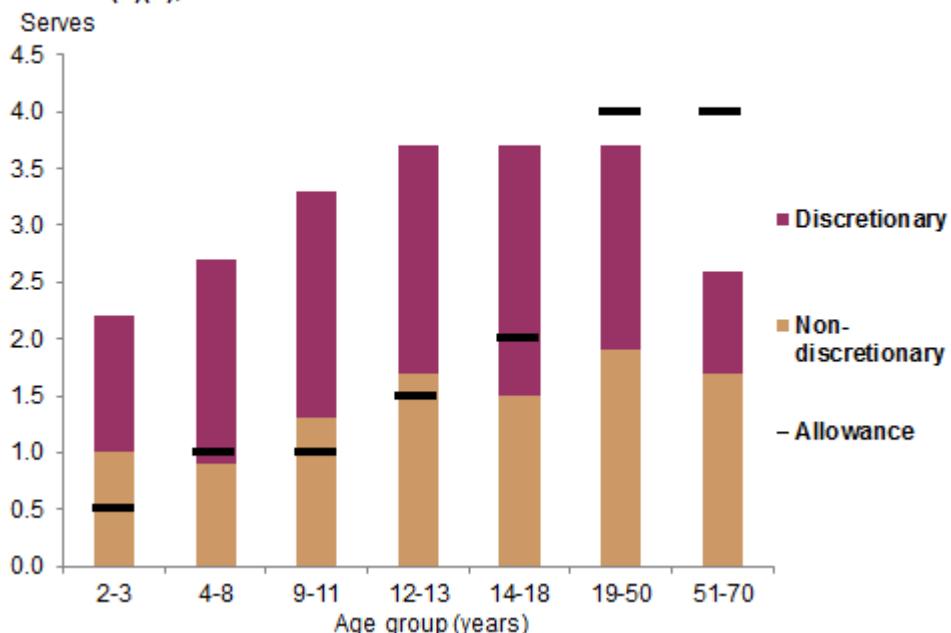
Consistent with the advice within the Guidelines around which foods are considered part of healthy dietary pattern, the above comparisons against the recommendations were limited to those foods classed as 'non-discretionary'. However, previous analysis⁵ has shown that around two-fifths (41%) of dietary energy comes from the discretionary foods which are characterised as nutrient poor and energy dense and often high in saturated fat, salt or added sugars.

When the 'discretionary' food sources are included, the average consumption of *unsaturated spreads and oils* more than doubles from 1.4 to 3.0 serves across the population. Aboriginal and Torres Strait Islander people in non-remote areas consumed more serves of *unsaturated spreads and oils* from discretionary sources than those in remote areas (1.6 serves compared to 1.1 serves).

When discretionary sources are included, men aged 19 years and over were the only group with an average consumption that was less than their respective daily allowance.

Aboriginal and Torres Strait Islander people consumed more serves of *unsaturated spreads and oils* from discretionary sources than non-Indigenous people (1.5 serves compared to 1.2 serves).

Males 2-70 years - Average serves of unsaturated spreads and oils consumed from discretionary and non-discretionary sources(a)(b), 2012-13

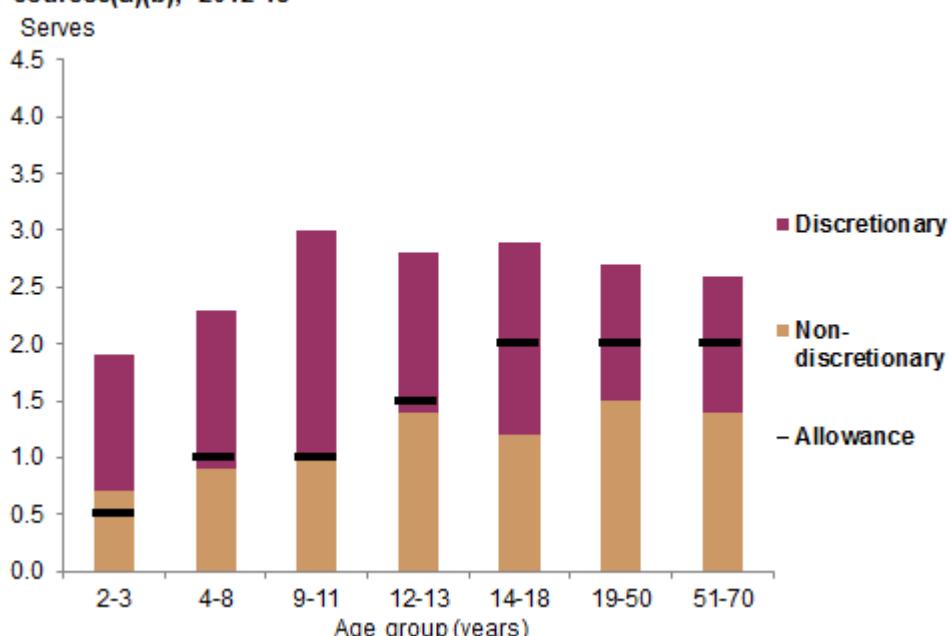


(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Females 2-70 years - Average serves of unsaturated spreads and oils consumed from discretionary and non-discretionary sources(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people.

(b) Based on Day 1. See Glossary for definition.

Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Potato products (such as chips and hash browns) were the most common source of *discretionary unsaturated spreads and oils*, contributing 25%. This was followed by 21% from snack foods, 17% from pastries and 15% from fish dishes and products.

ENDNOTES:

1. National Health and Medical Research Council, 2013, *Australian Dietary Guidelines*. Canberra: Australian Government.
<https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf>, Last accessed 27/10/2016
2. See Table 2 within Data Cubes from Downloads within 4727.0.55.005 – *Australian Aboriginal and Torres Strait Islander Health Survey: Nutrition Results – Foods and Nutrients, 2012-13* <<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4727.0.55.0052012-13?OpenDocument>>
3. National Health and Medical Research Council and New Zealand Ministry of Health, 2006, *Nutrient Reference Values for Australia and New Zealand*, Canberra: Australian Government.
<<http://www.nrv.gov.au/nutrients>>, Last accessed 14/10/2016
4. This analysis is based on the measurement of *unsaturated spreads and oils* in the 2012-13 NATSINPAS. The foods contributing to this group include margarines and oils made from polyunsaturated and monounsaturated oils, nuts and nut pastes and products containing any of these ingredients. For more information see *Assessing the 2011-13 AHS against the Australian Dietary Guidelines - Classification System and Database Development Explanatory notes*, available from:
<http://www.foodstandards.gov.au/science/monitoringnutrients/ausnut/>
5. See discussion of Discretionary foods from 4727.0.55.005 – *Australian Aboriginal and Torres Strait Islander Health Survey: Nutrition Results - Foods and Nutrients, 2012-13*,
<<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4727.0.55.005~2012-13-Main%20Features~Discretionary%20foods~16>>

ABBREVIATIONS

The following symbols and abbreviations are used in this publication:

AATSIHS	Australian Aboriginal and Torres Strait Islander Health Survey
ABS	Australian Bureau of Statistics
ADG	Australian Dietary Guidelines
AHS	Australian Health Survey
AMPM	Automated Multiple-Pass Method
AUSNUT	Australian Food, Supplement and Nutrient Database
BMI	Body Mass Index
BMR	Basal Metabolic Rate
CURF	Confidentialised Unit Record File
EI	Energy intake
FSANZ	Food Standards Australia New Zealand
g	gram
kJ	kilojoule
ml	milliliter
MoE	Margin of Error
NATSIHMS	National Aboriginal and Torres Strait Islander Health Measures Survey
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NATSINPAS	National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NCI	National Cancer Institute
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
NNPAS	National Nutrition and Physical Activity Survey
SE	Standard error
USDA	United States Department of Agriculture
WHO	World Health Organization

GLOSSARY

The definitions used in this survey are not necessarily identical to those used for similar items in other collections. Additional information is contained in the [Australian Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2012-13](#) (cat. no. 4727.0.55.002).

24-hour dietary recall

This was the methodology used to collect detailed information on food and nutrient intake in the National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS). The 24-hour dietary recall collected a list of all foods, beverages and dietary supplements consumed the previous day from midnight to midnight, and the amount consumed. For more information, see the [24-hour Dietary Recall](#) chapter of the AHS: Users' Guide, 2011-13 (cat. no. 4363.0.55.001).

Aboriginal and Torres Strait Islander people

Refers to people who identified themselves, or were identified by another household member, as being of Aboriginal, Torres Strait Islander, or Aboriginal and Torres Strait Islander origin.

Age groups

The age groups used in this publication align with the age groupings used in the [National Health and Medical Research Council 2013 Australian Dietary Guidelines](#) for recommendations of minimum serves of each of the food groups.

Alcoholic beverages

The 'Alcoholic beverages' food group includes beers, wines, spirits, cider and other alcoholic beverages.

Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)

The Australian Aboriginal and Torres Strait Islander Health Survey 2012-13 is composed of three separate surveys:

- National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) 2012-13
- National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS) 2012-13
- National Aboriginal and Torres Strait Islander Health Measures Survey (NATSIHMS) 2012-13.

In addition to this, the AATSIHS Survey contains a Core dataset, which is produced from questions that are common to both the NATSIHS and NATSINPAS. See [About the Australian Aboriginal and Torres Strait Islander Health Survey](#) for details.

Australian Dietary Guidelines (ADG)

The [National Health and Medical Research Council 2013 Australian Dietary Guidelines](#) use the best available scientific evidence to provide information on the types and amounts of foods, food groups and dietary patterns that aim to:

- promote health and wellbeing
- reduce the risk of diet-related conditions
- reduce the risk of chronic disease.

The Guidelines are for use by health professionals, policy makers, educators, food manufacturers, food retailers and researchers.

The Australian Dietary Guidelines apply to all healthy Australians, as well as those with common diet-related risk factors such as being overweight. They do not apply to people who need special dietary advice for a medical condition, or to the frail elderly.

Australian Health Survey (AHS)

The Australian Health Survey 2011-13 is composed of three separate surveys:

- National Health Survey (NHS) 2011-12

- National Nutrition and Physical Activity Survey (NNPAS) 2011-12
- National Health Measures Survey (NHMS) 2011-12.

In addition to this, the AHS Survey contains a Core dataset, which is produced from questions that are common to both the NHS and NNPAS. See [The Structure of the Australian Health Survey](#) for details.

Automated Multiple-Pass Method (AMPM)

The method used to collect the 24 hour food recall in the 2012-13 NATSINPAS was the Automated Multiple-Pass Method (AMPM) developed by the Agricultural Research Service of the United States Department of Agriculture (USDA). ABS with assistance from Food Standards Australia New Zealand (FSANZ) adapted the AMPM instrument to reflect the Australian food supply. See the [User's Guide](#) for more information.

Calcium

Calcium is a mineral required for the growth and maintenance of the bones and teeth, as well as the proper functioning of the muscular and cardiovascular systems

Cereal based products and dishes

The 'Cereal based products and dishes' food group contains biscuits, cakes, pastries, pies, dumplings, pizza, hamburgers, hot dogs, and pasta and rice mixed dishes.

Cereals and cereal products

The 'Cereals and Cereal Products' food group includes grains, flours, bread and bread rolls, plain pasta, noodles and rice, and breakfast cereals.

Cholesterol

Cholesterol is a type of fat and a component of cell membrane.

Dairy and alternatives

See Milk, yoghurt, cheese and alternatives.

Day 1 / Day 2 intake

Day 1 intake refers to information collected from the first 24-hour dietary recall, while Day 2 refers to information from the second 24-hour recall. In the 2012-13 NATSINPAS, Day 1 intake information was collected from all respondents, with a second 24-hour recall (Day 2) collected from around 43% of respondents in non-remote areas. All respondents living in remote areas only had one interview.

Dietary energy

Dietary energy consists of energy provided by protein, fat, carbohydrate and alcohol. Small amounts of additional energy are from dietary fibre and organic acids.

Dietary fibre

Dietary fibre is generally found in edible plants or their extracts but can also come from synthetic analogues. It refers to the fractions of the plant or analogue that are resistant to digestion and absorption, which usually undergo fermentation in the large intestine. It comes in the form of polysaccharides, oligosaccharides and lignins.

Discretionary foods

The [2013 Australian Dietary Guidelines](#) describes discretionary foods as being: "foods and drinks not necessary to provide the nutrients the body needs, but that may add variety. However, many of these are high in saturated fats, sugars, salt and/or alcohol, and are therefore described as energy dense. They can be included sometimes in small amounts by those who are physically active, but are not a necessary part of the diet".

The Australian Dietary Guidelines Summary lists examples of discretionary choices as including: "cakes, biscuits; confectionary, chocolate; pastries, pies; ice confections, butter, cream, and spreads which contain

predominantly saturated fats; potato chips, crisps and other fatty or salty snack foods; sugar-sweetened soft drinks and cordials, sports and energy drinks and alcoholic drinks." Based on these definitions and the supporting documents which underpin the Australian Dietary Guidelines, foods reported within the NNPAS have been categorised as discretionary or non-discretionary. For more information, see the [Discretionary Foods](#) chapter of the AHS: Users' Guide, 2011-13 (cat. no. 4363.0.55.001).

Fat

Fat provides a significant amount of dietary energy and is also a carrier for fat-soluble vitamins and the source of essential fatty acids. It is the most energy dense of the macronutrients. The three fatty acid subtotals (mono-, poly-, and saturated fatty acids) do not add up to total fat because total fat includes a contribution from the non-fatty acid components.

Fats and Oils

The 'Fats and Oils' group includes butters, dairy blends, margarines, coconut and palm oil, and other fats, such as animal-based fats.

Fruit

The fruit group is one of the five food groups that make up the Australian Guide to Healthy Eating. This food group includes fresh, dried and canned fruits plus fruit juices (no added sugar).

For more information see [The Australian Dietary Guidelines](#) and [Appendix 2](#) in the Explanatory Notes of this publication for examples of foods from the sub food groups.

Grain (cereals)

The grain (cereals) group is one of the five food groups that make up the Australian Dietary Guidelines. This group includes foods that are made from grains such as wheat, rice, barley, millet, oats, rye, corn and quinoa.

For more information see [The Australian Dietary Guidelines](#) and [Appendix 2](#) in the Explanatory Notes of this publication for examples of foods from the sub food groups.

Iodine

Iodine is a nutrient essential for the production of thyroid hormones, which are essential for normal growth and development, particularly of the brain. Since October 2009, regulations have required that salt with added iodine (iodised salt) be used in all bread (except organic bread and bread mixes for making bread at home) in Australia.

Iron

Iron is an essential mineral for the oxygen carrying ability of red blood cells.

Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans

The lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans group is one of the five food groups from the Australian Dietary Guidelines. Foods in this group are high in protein.

For more information see [The Australian Dietary Guidelines](#) and [Appendix 2](#) in the Explanatory Notes of this publication for examples of foods from the sub food groups.

Margin of Error (MoE)

Margin of Error (MoE) describes the distance from the population value that the sample estimate is likely to be within, and is specified at a given level of confidence. Confidence levels typically used are 90%, 95% and 99%. For example, at the 95% confidence level the MoE indicates that there are about 19 chances in 20 that the estimate will differ by less than the specified MoE from the population value (the figure obtained if the entire population had been enumerated). In this publication, MoE has been provided at the 95% confidence level for proportions of persons and usual daily proportions of energy from macronutrients. For more information see the [Technical Note](#) of this publication.

Mean

The mean is the sum of the value of each observation in a dataset divided by the number of observations. This is also known as the arithmetic average.

Meat, poultry and game products and dishes

The 'Meat, poultry and game products and dishes' food group includes beef, sheep, pork, poultry, sausages, processed meat (e.g. salami) and mixed dishes where meat or poultry is the major component e.g. casseroles, curried sausages and chicken stir-fry.

Milk products and dishes

The 'Milk products and dishes' food group includes milk, yoghurt, cream, cheese, custards, ice cream, milk shakes, smoothies and dishes where milk is the major component e.g. cheesecake, rice pudding and crème brûlée.

Milk, yoghurt, cheese and alternatives

The milk, yoghurt, cheese and alternatives group is one of the five food groups that make up the Australian Guide to Healthy Eating. This group includes milk, yoghurt and cheese products, plus alternative products that are calcium enriched, such as soy and rice drinks.

For more information see [The Australian Dietary Guidelines](#) and [Appendix 2](#) in the Explanatory Notes of this publication for examples of foods from the sub food groups.

Minerals

Minerals are inorganic elements which are essential nutrients required in small amounts from the diet for normal growth and metabolic processes.

Moisture

Moisture, as measured in the NATSINPAS, is the water from all food and beverage sources.

Monounsaturated fat

Monounsaturated fat or monounsaturated fatty acids are a type of fat predominantly found in plant-based foods, although there are exceptions.

National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS)

The National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey focused on collecting information on:

- dietary behaviour and food avoidance (including 24-hour dietary recall)
- selected medical conditions that had lasted, or were expected to last for six months or more
 - cardiovascular and circulatory conditions
 - diabetes and high sugar levels
 - kidney disease
- blood pressure
- female life stages
- physical activity and sedentary behaviour (including 8 day pedometer component)
- use of tobacco
- physical measurements (height, weight and waist circumference).

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 - kidney disease
- blood pressure
- female life stages

- physical activity and sedentary behaviour (including eight-day pedometer component)
- use of tobacco
- physical measurements (height, weight and waist circumference).

Non-alcoholic beverages

The 'Non-alcoholic beverages' food group includes tea, coffee, juices, cordials, soft drinks, energy drinks and water.

Non-Indigenous people

This term refers to the population of Australian people who did not identify themselves as Aboriginal and/or Torres Strait Islander.

Nutrient

Nutrients are chemical substances provided by food that are used by the body to provide energy, structural materials, and biochemical cofactors to support the growth, maintenance, and repair of body tissues. Major sources of nutrients in the Aboriginal and Torres Strait Islander diet are available in [AATSIHS: Nutrition Results – Foods and Nutrients, 2012-13 \(cat. no. 4727.0.55.005\)](#)

Nutrient Database

The Nutrient Database used to derive energy and nutrient estimates for the 24-hour dietary recall data was developed by Food Standards Australia New Zealand. See [AUSNUT 2011-13](#).

Nuts and seeds

Any large, oily kernel found within a shell and used in food may be regarded as a nut. Nuts are often also grouped with seeds which are botanically distinct from nuts. These may include cape seed, caraway, chia, flaxseed, linseed, passionfruit, poppy seed, pepita or pumpkin seed, sesame seed and sunflower seed. Nuts and seeds contribute to two ADG food groups – lean meats and alternatives as well as unsaturated spreads and oils.

Plain water

Plain water includes bottled water and tap water with no flavourings.

Polyunsaturated fat

Polyunsaturated fat or polyunsaturated fatty acids are a type of fat predominantly found in plant-based foods, although there are exceptions. Linoleic acid, alpha-linolenic acid, long-chain omega 3 fatty acids, and other polyunsaturated fatty acids are included in the polyunsaturated fatty acid total.

Processed meats

Processed meats are meats that have been transformed through salting, curing, fermentation, smoking other processes to enhance the flavour or improve preservation. Examples of processed meats are: sausages, ham, bacon and salami. All processed meats have been flagged as 'discretionary' for this publication.

Protein

Protein supplies essential amino acids and is also a source of energy. Protein can be supplied from animal or vegetable matter, though individual vegetable proteins do not contain all the essential amino acids required by the body – they may be limited in one of these essential amino acids.

Recommended number of serves per day

The National Health and Medical Research Council 2013 Australian Dietary Guidelines recommend a minimum number of serves of foods from each of the five food groups, depending on age and sex. This is the recommended daily consumption for foods from the five food groups.

Refined grains

Refined grains are grains (cereals) that no longer have the outer layer of the grain due to processing. Refined grain foods have lower fibre content than wholegrain foods.

Remoteness

The Remoteness Structure for the Australian Statistical Geography Standard (ASGS) 2011, has five categories based on an aggregation of geographical areas which share common characteristics of remoteness, determined in the context of Australia as a whole. These categories are:

- Major cities of Australia
- Inner regional Australia
- Outer regional Australia
- Remote Australia
- Very remote Australia

The five categories are generally aggregated in some way for use in output. For this publication, the first three categories represent non-remote areas and the last two represent remote areas.

The 2011 Remoteness Structure has been built using the same principles as the 2006 Remoteness Structure. The primary difference is that it was built from ASGS Statistical Area Level 1 (SA1) regions rather than from 2006 Census Collection Districts (CCD).

The criteria for these categories are based on the Accessibility/Remoteness Index of Australia (ARIA). ARIA measures the remoteness of a point based on the physical road distance to the nearest Urban Centre in each of five size classes. For more information on how ARIA is defined see [Information Paper: ABS Views on Remoteness, 2001](#) (cat. no. 1244.0) and [Information Paper: Outcomes of ABS Views on Remoteness Consultation, Australia, Jun 2001](#) (cat. no. 1244.0.00.001). Also refer to [Census Geography Paper 03/01 - ASGC Remoteness Classification - Purpose and Use](#), available from the ABS web site.

Saturated fat

Saturated fat or saturated fatty acids are a type of fat predominantly found in animal-based foods, although there are exceptions. Saturated fat is the total of all saturated fatty acids, that is, all fatty acids without any double bonds.

Sodium

Sodium is a mineral which occurs in a number of different forms but is generally consumed as sodium chloride (commonly known as 'salt').

The Guidelines

See Australian Dietary Guidelines

The Five Food Groups

The Five Food Groups make up the Australian Guide to Healthy Eating. Foods are grouped by their type and contribution of nutrients to the Australian diet. See [Australian Dietary Guidelines Summary](#)

Under-reporting

Under-reporting refers to the tendency (bias) of respondents to underestimate their food intake in self-reported dietary surveys. It includes actual changes in foods eaten because people know they will be asked about them, and misrepresentation (deliberate, unconscious or accidental), for example to make their diets appear more 'healthy' or be quicker to report. For more information see Under-reporting in the [AATSIHS: Nutrition Results – Foods and Nutrients, 2012-13 \(cat. no. 4727.0.55.005\)](#)

Unsaturated spreads and oils

Consumption of polyunsaturated and monounsaturated fats is an important part of a healthy dietary pattern, supplying essential fatty acids and carrying fat soluble vitamins. These fats may be readily sourced from many foods within the five food groups such as nuts, legumes/beans, avocado, oats, fish, lean meats and eggs. For more information see [The Australian Dietary Guidelines](#) and Appendix 2 in the [Explanatory Notes](#) of this publication for examples of foods from the sub food groups.

Usual Intakes

Usual intakes represent food and nutrient intake over a long period of time. For a single person, dietary intake varies day-to-day. A single 24-hour dietary recall does not represent the usual, or long term, intake of a person because of this variation. See [Overview of the NCI Method](#) chapter of the AHS: Users' Guide, 2011-13 (cat. No. 4363.0.55.001).

Vegetables and legumes/beans

The vegetables and legumes/beans group is one of the five food groups that make up the Australian Guide to Healthy Eating. There are a wide variety of vegetables but they can be generally grouped into green and brassica vegetables, orange vegetables, starchy vegetables, other vegetables and legumes as vegetables. For more information see [The Australian Dietary Guidelines](#) and [Appendix 2](#) in the Explanatory Notes of this publication for examples of foods from the sub food groups.

Vegetable products and dishes

The 'Vegetable products and dishes' food group includes vegetables and dishes where vegetables are the major component, for example salad or vegetable casserole.

Vitamins

Vitamins are organic compounds required in small amounts from the diet for normal growth and metabolic processes.

Vitamin B12

Vitamin B12, also known as cobalamin, has a key role in the normal functioning of the brain and nervous system, and the formation of blood. Almost all vitamin B12 comes from animal foods, such as meat and dairy products, although some is added to some plant-based foods such as vegetarian meat replacements.

Wholegrain

Wholegrain foods contain the entire three layers of the grain. Wholegrains provide more fibre, vitamins and minerals than refined grains.

Wholegrain or high fibre

Wholegrain or higher fibre cereals/grains include all wholegrain or higher fibre breads, grains, oats, breakfast cereal flakes, savoury crackers/crispbreads, crumpets, English muffins and scones and flour. See [AUSNUT 2011-13](#).

Zinc

Zinc is a mineral required for the function of many enzymes and has a role in protein and DNA synthesis.

EXPLANATORY NOTES

INTRODUCTION

1 This publication is the second release of nutrition data from the 2012-13 National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS). The first release was published in March 2015. The statistics presented in this publication are only a selection of the nutrition information collected from the NATSINPAS.

2 The 2012-13 NATSINPAS was conducted throughout Australia from August 2012 to July 2013. The NATSINPAS was collected as one of a suite of surveys that together comprise the Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS).

3 The Australian Aboriginal and Torres Strait Islander Health Survey: Consumption of Australian Dietary Guidelines food groups publication contains food intake information from a 24-hour dietary recall for Aboriginal and Torres Strait Islander people by age groups and sex at the National level. The publication includes selected comparisons with the non-Indigenous population from the 2011-12 National Nutrition and Physical Activity Survey (NNPAS) component of the 2011-13 Australian Health Survey.

4 The statistics presented in this publication are only a selection of the information collected in the NATSINPAS. All statistics from the 24-hour dietary recall are based on a single day's intake (Day 1). No adjustments have been made using the second day of 24-hour dietary recall information collected from respondents living in non-remote areas.

5 Usual intakes of ADG food groups were not calculated for this publication as the National Cancer Institute (NCI) method requires at least two days of dietary recall which was not available for the majority of participants in this survey. See paragraph 26 for more information about the sample and [Overview of the NCI Method](#) chapter of the AHS: Users' Guide, 2011-13 (cat. No. 4363.0.55.001).

6 Age standardised means have not been included in this publication. While age standardisation is commonly used in comparisons of health characteristics between the Aboriginal and Torres Strait Islander population with non-Indigenous Australians, it may not be appropriate to apply age standardisation to characteristics that are less clearly age related such as dietary behaviours. Investigations showed that for the Aboriginal and Torres Strait Islander population, age standardisation produced slightly higher relative mean amounts of *vegetables and legumes/beans* and *lean meats and poultry, fish, eggs tofu, nuts and seeds and legumes/beans* and slightly relatively lower mean serve amounts for *fruit, grains (cereals), milk, yoghurt, cheese and alternatives*.

7 Throughout this release, the term 'Aboriginal and Torres Strait Islander people' refers to all persons who identified themselves as being of Aboriginal, Torres Strait Islander, or both Aboriginal and Torres Strait Islander origin.

8 Explanations of terms and concepts are provided in the Glossary and a list of data items currently available from the survey can be found in the [Australian Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2012-13](#) (cat no. 4727.0.55.002), referred to throughout this publication as the 'Users' Guide'.

SCOPE AND COVERAGE OF THE SURVEY

9 The National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS) is based on a sample of approximately 2,900 private dwellings across Australia.

10 Non-private dwellings such as hotels, motels, hospitals, nursing homes and short-stay caravan parks were excluded from the survey. This may affect estimates of the number of people with some chronic health conditions (for example, conditions which may require periods of hospitalisation).

11 The scope of the NATSINPAS was all Aboriginal and Torres Strait Islander people who were usual residents of private dwellings in Australia. Usual residents are those who usually live in a particular dwelling and regard it as their own or main home.

12 Within each selected dwelling, one Aboriginal and Torres Strait Islander adult (aged 18 years and over) and, where possible, one Aboriginal and Torres Strait Islander child (aged 2 years and over) were randomly selected for inclusion in the survey. Sub-sampling within households enabled more information to be collected from each respondent than would have been possible had all usual residents of selected dwellings been included in the survey.

13 The following groups were excluded from the survey:

- Non-Indigenous persons;
- Non-Australian diplomats; diplomatic staff and members of their household;
- Members of Non-Australian Defence forces stationed in Australia; and
- Overseas visitors

14 The survey excluded visitors to private dwellings, except for those that had been resident six months or longer. Visitors who were a usual resident of another dwelling and were in-scope of the survey may be selected in the survey only at their usual residence dwelling, or if not selected, would have been represented by similar persons who were selected in the survey.

15 The NATSINPAS was conducted in non-remote and remote areas in all states and territories of Australia, including discrete Aboriginal and Torres Strait Islander communities.

16 Coverage exclusions apply to those people who were part of the in-scope population, but who were not included in the sampling frame as a way of managing enumeration costs. The sample was based on areas in which Aboriginal and Torres Strait Islander households were identified in the 2011 Census of Population and Housing. Coverage exclusions applied included:

- Statistical Areas Level 1 (SA1s) (or Collection Districts (CDs) in the Northern Territory (NT)) with no Aboriginal and Torres Strait Islander households;
- Some discrete Aboriginal and Torres Strait Islander communities with a small number of Aboriginal and Torres Strait Islander households; and
- Some SA1s, or CDs in the NT, in remote areas with a small number of Aboriginal and Torres Strait Islander households.

17 These coverage exclusions result in an estimated under-coverage of approximately 4% of Aboriginal and Torres Strait Islander persons in Australia. Although these areas were not enumerated, the final sample was weighted to population benchmarks to account for these exclusions. Further information on under-coverage is provided in paragraphs 45 to 49 and more information on the scope and coverage of the survey is provided in the [Users' Guide](#).

18 The estimated resident Aboriginal and Torres Strait Islander population aged 2 years and over living in private and non-private dwellings at 30 June 2011 was 636,945. Excluding persons in non-private dwellings, there were 606,915 Aboriginal and Torres Strait Islander people aged 2 years and over.

19 Population benchmarks, which align with the survey scope, are based on the most recently released Estimated Resident Aboriginal and Torres Strait Islander Population (ERP), which in this case are for 30 June 2011. The ERP data are based on the 2011 Census of Population and Housing, adjusted by the 2011 Post-Enumeration Survey (PES). More information about the Estimated Resident Aboriginal and Torres Strait Islander Population can be found in [Estimates of Aboriginal and Torres Strait Islander Australians, June 2011](#) (cat. no. 3238.0.55.001).

RESPONSE RATES

20 After sample loss the NATSINPAS approached 3,661 households. Of these, 2,900 (79%) were fully or adequately responding, yielding a total sample for the survey of 4,109 persons (aged 2 years and over).

21 The final persons in sample used in the publication by non-remote and remote areas follow.

FINAL PERSONS IN SAMPLE

	Non-remote	Remote
Adults	1170	1505
Children		
2-4	145	211
5-17	477	601
Total	1792	2317

22 More information on response rates is available in the [Users' Guide](#).

DATA COLLECTION

23 Trained ABS interviewers conducted personal interviews with selected Aboriginal and Torres Strait Islander residents in sampled private dwellings. Selected persons aged 18 years and over in each dwelling were interviewed about their own health characteristics including a 24-hour dietary recall and a physical activity module. An adult, nominated by the household, was interviewed for selected children (aged 2 years and over) in the household. An adult, nominated by the household, was also asked to provide information about the household, such as the combined income of household members. Children aged 6-14 years were encouraged to be involved in the survey, particularly for the 24-hour dietary recall and physical activity module. For further information, see [Data Collection](#) in the [Users' Guide](#).

24 The majority (61%) of Aboriginal and Torres Strait Islander children aged 15-17 years could be personally interviewed with consent from a parent or guardian. For the remaining 39% of children in this age group, proxy interviews were conducted with a parent or guardian.

25 All selected persons in non-remote areas of the NATSINPAS were asked to have a follow-up telephone interview at least 8 days after the face to face interview to collect further nutrition data. For those who opted in, pedometer data was also reported during this telephone interview. Results from this phase of the survey have not been included in this publication.

26 Of the 4,109 people in the final sample, 99.5% provided the first (Day 1), with the missing 0.5% of Day 1 dietary recalls being imputed. The second 24-hour dietary recall (Day 2) which was only offered to those in non-remote areas had 771 participants (43% of the total in non-remote areas). The Day 2 24-hour dietary recall participation was slightly lower among female children than other respondents.

27 To take account of possible seasonal effects on health and nutrition characteristics, the NATSINPAS sample was surveyed across a 12-month enumeration period.

28 More information on data collection and a copy of the survey questionnaire are provided in the [Users' Guide](#).

WEIGHTING, BENCHMARKING AND ESTIMATION

29 Weighting is a process of adjusting results from a sample survey to infer results for the in-scope total population. To do this, a weight is allocated to each person in the sample. The weight is a value which indicates how many population units are represented by the sample unit.

30 The first step in calculating weights for each person was to assign an initial weight, which is equal to the inverse of the probability of being selected in the survey. For example, if the probability of a person being selected in the survey was 1 in 600, then the person would have an initial weight of 600 (that is, they would represent 600 others).

31 The weights are calibrated to align with independent estimates of the population of interest, referred to as 'benchmarks', in designated categories of sex by age by area of usual residence. Weights calibrated against population benchmarks compensate for over or under-enumeration of particular categories of persons and ensure that the survey estimates conform to the independently estimated distribution of the population by age, sex and area of usual residence, rather than to the distribution within the sample itself.

32 The NATSINPAS was benchmarked to the estimated resident population living in private dwellings at 30 June 2011. As people in non-private dwellings (e.g. hotels) are excluded from the scope of the survey, they have also been excluded from the survey benchmarks. Therefore, the NATSINPAS estimates do not (and are not intended to) match estimates for the total resident Aboriginal and Torres Strait Islander population obtained from other sources.

33 Estimates of counts of persons are obtained by summing person weights of persons with the characteristic of interest. The estimates presented in this release are based on benchmarked person weights.

34 More information on weighting, benchmarking and estimation is provided in the [Users' Guide](#).

RELIABILITY OF ESTIMATES

35 All sample surveys are subject to error which can be broadly categorised as either sampling error or non-

sampling error.

36 Sampling error is the difference between estimates, derived from a sample of persons, and the value that would have been produced if all persons in scope of the survey had been included. For more information refer to the [Technical note](#). Indications of the level of sampling error are given by the 95% Margin of Error (MoE).

37 In this publication, MoEs are provided for all estimates (unless noted otherwise) to assist users in assessing the reliability of these types of estimate. The estimate combined with the MoE defines a range which is expected to include the true population value with a 95% level of confidence. This is known as the 95% confidence interval. This range should be considered by users to inform decisions based on the estimate.

38 Non-sampling error may occur in any data collection, whether it is based on a sample or a full count such as a census. Non-sampling errors occur when survey processes work less effectively than intended. Sources of non-sampling error include non-response, errors in reporting by respondents or in recording of answers by interviewers, and occasional errors in coding and processing data.

39 Of particular importance to nutrition surveys is a widely observed tendency for people to under-report their food intake. This can include:

- actual changes in foods eaten because people know they will be participating in the survey;
- the misrepresentation of foods and beverages consumed (deliberate, unconscious or accidental), e.g. to make their diets appear more 'healthy' or be quicker to report.

Analysis of the results of the 2012-13 NATSINPAS suggests that, like other nutrition surveys (including the 2011-12 NNPAS), there has been some under-reporting of food intake by participants in these surveys. It is difficult, from the available data, to accurately estimate the amount of under-reporting that has occurred and therefore how much energy and nutrients might be missing from the intakes reported by respondents. One method is to estimate the mean amount of energy required for the population to achieve an EI:BMR ratio of 1.55 (i.e. the conservative minimum energy requirement for a normally active but sedentary population). Using this method, it is estimated that the average energy intakes for Aboriginal and Torres Strait Islander people may be understated by as much as 24% for males and 31% for females. The factor most closely associated with under-reporting was BMI, where people who were overweight or obese were most likely to have lower than expected energy intakes. For more information see [Under-reporting in the National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey](#) in the AATSIHS Users' Guide, 2011-13.

40 A further factor affecting the accuracy of the 24-hour dietary recall data is that most young children are unable to recall their intakes. Similarly, parents/carers of school-aged children may not be aware of a child's total food intake, which can lead to systematic under-reporting. Young children were encouraged to assist in answering the dietary recall questions. See the Interviews section of [Data Collection](#) for more information on use of proxies in the 24-hour dietary recall module.

41 Another non-sampling error specific to Nutrition surveys is the accuracy of the nutrient and measures database containing thousands of foods used to derive the nutrient estimates. The databases used for the 2012-13 NATSINPAS were developed by Food Standards Australia New Zealand specifically for the survey. A complete nutrient profile of 44 nutrients was created based on the latest available data, however, not all data was based on directly analysed foods. Some data was obtained from overseas food composition tables, food label information; imputed data from similar foods or data calculated using a recipe approach. See [AUSNUT 2011-13](#) for more information.

42 Non-response occurs when people cannot or will not cooperate, or cannot be contacted by interviewers. Non-response can affect the reliability of results and can introduce a bias. The magnitude of any bias depends on the rate of non-response and the extent of the difference between the characteristics of those people who responded to the survey and those who did not.

43 The following methods were adopted to reduce the level and impact of non-response:

- face-to-face interviews with respondents
- follow-up of respondents if there was initially no response
- weighting to population benchmarks to reduce non-response bias.

44 By careful design and testing of the questionnaire, training of interviewers, and extensive editing and quality control procedures at all stages of data collection and processing, other non-sampling error has been minimised. However, the information recorded in the survey is essentially 'as reported' by respondents, and hence may differ from information collected using a different methodology.

Under-coverage

45 Under-coverage is the shortfall between the population represented by the achieved sample and the in-scope population. Weighting, as described in paragraphs 29–34 adjusts for under-coverage, reducing the under-coverage bias in estimates.

46 Under-coverage rates can be estimated by calculating the difference between the sum of the initial weights of the sample and the population count. If a survey has no under-coverage, then the sum of the initial weights of the sample will equal the population count (ignoring small variations due to sampling error).

47 It is usual for ABS Aboriginal and Torres Strait Islander surveys to have large levels of under-coverage. The NATSINPAS under-coverage rate was 63% of the in-scope population at the national level. However, 6% of this was due to planned frame exclusions and overlap with the Monthly Population Survey where analysis has shown that the impact of any bias is minimal. For comparison, the estimated under-coverage in the 2004–05 NATSIHS and the 2008 NATSISS was 42% and 53% respectively.

48 The NATSINPAS rate varies across states and territories, with Victoria (78%), the Northern Territory (72%) and New South Wales (68%) recording the highest rates of under-coverage. The lowest under-coverage rates were in Tasmania (6%) and the Australian Capital Territory (44%).

49 Under-coverage may occur due to a number of factors, including:

- frame exclusions (areas being removed from the sampling frame);
- non-response;
- non-identification of people as being of Aboriginal and/or Torres Strait Islander origin; and
- issues arising in the field

For more details on these, refer to the [Users' Guide](#).

CLASSIFICATIONS

50 The AATSIHS food classification was produced by Food Standards Australia New Zealand (FSANZ). It is formed by grouping the 8-digit food codes into broader food groups comprising major, sub-major and minor groups, along with dietary supplements. The AHS food classification is available as an Excel spreadsheet from the [Downloads](#) tab of the AHS User's Guide.

CONFIDENTIALITY

51 The *Census and Statistics Act, 1905* provides the authority for the ABS to collect statistical information, and requires that statistical output shall not be published or disseminated in a manner that is likely to enable the identification of a particular person or organisation. This requirement means that the ABS must take care and make assurances that any statistical information about individual respondents cannot be derived from published data.

52 Techniques used to guard against identification or disclosure of confidential information in statistical tables includes: the suppression of sensitive cells, random adjustments to cells with very small values, and aggregation of data. To ensure confidentiality within this publication, some cell values may have been suppressed and are not available for publication but are included in totals where applicable. As a result, components may not always add exactly to totals.

ROUNDING

53 Estimates presented in this publication have been rounded. As a result, sums of components may not add exactly to totals.

54 All statistics have been rounded to one decimal place in the data cubes.

55 Proportions presented in this publication are based on unrounded figures. Calculations using rounded figures may differ from those published.

ACKNOWLEDGEMENTS

56 The success of the NATSINPAS was dependent on the high level of cooperation received from Aboriginal and Torres Strait Islander peoples and their communities. Without their continued cooperation, the wide range of Aboriginal and Torres Strait Islander statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

57 The ABS gratefully acknowledges and thanks the Agricultural Research Service of the United States Department of Agriculture (USDA) for giving permission to adapt and use their Dietary Intake Data System, including the Automated Multiple-Pass Method (AMPM) for collecting dietary intake information, as well as other processing systems and associated materials.

58 Food Standards Australia New Zealand (FSANZ) was contracted to provide advice throughout the survey development, processing and collection phases of the 2012-13 NATSINPAS, and to provide a nutrient database for the coding of foods and supplements consumed. The ABS would like to acknowledge and thank FSANZ for providing support, advice and expertise for the 2012-13 NATSINPAS.

PRODUCTS AND SERVICES

59 Summary results from this survey are available in spreadsheet form from the 'Downloads' tab in this release.

60 For users who wish to undertake more detailed analysis of the survey data, Survey Table Builder will also be made available in 2015. Survey Table Builder is an online tool for creating tables from ABS survey data, where variables can be selected for cross-tabulation. It has been developed to complement the existing suite of ABS microdata products and services including Census TableBuilder and CURFs. Further information about ABS microdata, including conditions of use, is available via the [Microdata](#) section on the ABS website.

61 Special tabulations are available on request. Subject to confidentiality and sampling variability constraints, customised tabulations can be produced from the survey incorporating data items, populations and geographic areas selected to meet individual requirements. A list of currently available [data items](#) is available from the [Users' Guide](#).

RELATED PUBLICATIONS

62 Other ABS publications which may be of interest are shown under the 'Related Information' tab of this release.

63 Current publications and other products released by the ABS are listed on the ABS website www.abs.gov.au. The ABS also issues a daily [Release Advice](#) on the website which details products to be released in the week ahead.

ABOUT THE NATIONAL ABORIGINAL AND TORRES STRAIT ISLANDER NUTRITION AND PHYSICAL ACTIVITY SURVEY

The ABS Australian Health Survey (AHS) is the largest and most comprehensive health survey ever conducted in Australia. The survey, conducted throughout Australia, collected a range of information about health related issues as well as new detailed information on nutrition, physical activity, and chronic disease and nutrient biomarkers.

The Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) forms part of the broader AHS and is based on a nationally representative sample of around 13,400 Aboriginal and Torres Strait Islander people. It was conducted in non-remote areas and remote areas across Australia, including discrete communities, and combines the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) with two new components - the National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATSINPAS) and the National Aboriginal and Torres Strait Islander Health Measures Survey (NATSIHMS) see [Structure of the Australian Aboriginal and Torres Strait Islander Health Survey](#) for more information.

The NATSINPAS is the first ABS survey to collect detailed nutrition information from Aboriginal and Torres Strait Islander people. Information for the nutrition component was gathered using a 24-hour dietary recall on all foods and beverages consumed on the day prior to interview. Where possible, at least 8 days after the first interview, respondents in non-remote areas were contacted to participate in a second 24-hour dietary recall via telephone interview. This publication contains information from the nutrition component of the NATSINPAS. It presents information on food and beverages from the first interview.

This publication is the second release of information from the nutrition component of the NATSINPAS, it includes analysis on the average consumption of the five ADG food groups. Additionally, it describes the contribution of food sub-groupings to the total number of serves of the five food groups as well as the most common food/beverage sources for each food group.

ACKNOWLEDGEMENTS

Both the NATSINPAS and NATSIHMS were made possible through additional funding from the Australian Government Department of Health and the National Heart Foundation of Australia. The contributions of these two organisations to improving health information in Australia through the collection of high quality statistics are greatly valued.

The AATSIHS was developed with the assistance of an advisory group comprised of experts on health issues, many of whom were Aboriginal and Torres Strait Islander people. Members of these groups were drawn from Commonwealth and state/territory government agencies, non-government organisations, relevant academic institutions and clinicians. The valuable contributions made by members of these groups are greatly appreciated.

Food Standards Australia New Zealand (FSANZ) was contracted to provide advice throughout the survey development, processing and collection phases of the 2012-13 NATSINPAS and to provide a nutrient database for the coding of foods and supplements consumed. The ABS would like to acknowledge and thank FSANZ for providing support, advice and expertise for the 2012-13 NATSINPAS.

The ABS gratefully acknowledges and thanks the Agricultural Research Service of the United States Department of Agriculture (USDA) for giving permission to adapt and use their Dietary Intake Data System, including the Automated Multiple-Pass Method (AMPM) for collecting dietary intake information, as well as other processing systems and associated materials.

The ABS would like to acknowledge and thank the members of the Expert Reference Group who assisted in the development of this publication:

- Commonwealth Department of Health
- Food Standards Australia New Zealand
- Department of Nutrition and Dietetics, Monash University Melbourne
- Faculty of Health Sciences, University of Sydney
- New South Wales Ministry of Health

The success of the 2012-13 AATSIHS was also dependent on the very high level of cooperation received from Aboriginal and Torres Strait Islander people. Their continued cooperation is very much appreciated; without it, the range of statistics published by the ABS would not be possible. Information received by the ABS is treated in strict confidence as required by the *Census and Statistics Act 1905*.

TECHNICAL NOTE

RELIABILITY OF THE ESTIMATES

1 Two types of error are possible in an estimate based on a sample survey: sampling error and non-sampling error. The sampling error is a measure of the variability that occurs by chance because a sample, rather than the entire population, is surveyed. Since the estimates in this publication are based on information obtained from occupants of a sample of dwellings they are subject to sampling variability; that is they may differ from the figures that would have been produced if all dwellings had been included in the survey. One measure of the likely difference is given by the standard error (SE). There are about two chances in three that a sample estimate will differ by less than one SE from the figure that would have been obtained if all dwellings had been included, and about 19 chances in 20 that the difference will be less than two SEs.

2 Another measure of the likely difference is given by the Margin of Error (MoE). The MoE describes the distance (or margin) from the estimate that the 'true' value will lie within at a given confidence level. Confidence levels typically used are 90%, 95% and 99%. For example, at the 95% confidence level the MoE indicates that there are about 19 chances in 20 that the estimate will differ by less than the specified MoE from the population value (the figure obtained if all dwellings had been enumerated). The 95% MoE is calculated as 1.96 multiplied by the SE.

3 The MoEs in this publication are calculated at the 95% confidence level. This can easily be converted to a 90% confidence level by multiplying the MoE by

1.645

1.96

or to a 99% confidence level by multiplying by a factor of

2.576

1.96

4 A confidence interval expresses the sampling error as a range in which the population value is expected to lie at a given level of confidence. The confidence interval can easily be constructed from the MoE of the same level of confidence by taking the estimate plus or minus the MoE of the estimate. Two types of error are possible in an estimate based on a sample survey: sampling error and non-sampling error.

5 The imprecision due to sampling variability, which is measured by the SE, should not be confused with inaccuracies that may occur because of imperfections in reporting by interviewers and respondents and errors made in coding and processing of data. Inaccuracies of this kind are referred to as the non-sampling error, and they may occur in any enumeration, whether it be in a full count or only a sample. In practice, the potential for non-sampling error adds to the uncertainty of the estimates caused by sampling variability. However, it is not possible to quantify the non-sampling error.

COMPARISON OF ESTIMATES

6 Published estimates may also be used to calculate the difference between two survey estimates. Such an estimate is subject to sampling error. The sampling error of the difference between two estimates depends on their SEs and the relationship (correlation) between them. An approximate SE of the difference between two estimates ($x-y$) may be calculated by the following formula:

$$SE(x - y) = \sqrt{[SE(x)]^2 + [SE(y)]^2}$$

7 While the above formula will be exact only for differences between separate and uncorrelated (unrelated) characteristics of sub-populations, it is expected that it will provide a reasonable approximation for all differences likely to be of interest in this publication.

EXAMPLE OF INTERPRETATION OF SAMPLING ERROR

8 Standard errors can be calculated using the MoE. For example the estimate of mean serves of fruit consumed by Aboriginal and Torres Strait Islander females aged 14-18 years is 1.4 serves, and the MoE for this estimate is +/- 0.5 serves. The SE is calculated by:

$$\text{SE of estimate} = \left(\frac{\text{MoE}}{1.96} \right)$$

$$= \left(\frac{0.5}{1.96} \right)$$

$$= 0.3$$

9 There are about 19 chances in 20 that the estimate of the mean serves of fruit consumed by Aboriginal and Torres Strait Islander females aged 14-18 years is +/- 0.5 serves from the population value.

10 Similarly, there are about 19 chances in 20 that the mean serves of fruit consumed by Aboriginal and Torres Strait Islander females aged 14-18 years is within the confidence interval of 0.9 and 1.9 serves.

SIGNIFICANCE TESTING

11 For comparing estimates between surveys or between populations within a survey it is useful to determine whether apparent differences are 'real' differences between the corresponding population characteristics or simply the product of differences between the survey samples. One way to examine this is to determine whether the difference between the estimates is statistically significant. This is done by calculating the standard error of the difference between two estimates (x and y) and using that to calculate the test statistic using the formula below:

$$\frac{|x-y|}{\text{SE}(x-y)}$$

where $\text{SE}(x-y)$ is given in paragraph 6 above.

12 If the value of the statistic is greater than 1.96 then we may say there is good evidence of a statistically significant difference at 95% confidence levels between the two populations with respect to that characteristic. Otherwise, it cannot be stated with confidence that there is a real difference between the populations.

APPENDIX 1: Australian Dietary Guidelines

Guideline 1	To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs. <ul style="list-style-type: none">▪ Children and adolescents should eat sufficient nutritious foods to grow and develop normally. They should be physically active every day and their growth should be checked regularly.▪ Older people should eat nutritious foods and keep physically active to help maintain muscle strength and a healthy weight.
Guideline 2	Enjoy a wide variety of nutritious foods from these five groups every day: <ul style="list-style-type: none">▪ Plenty of vegetables, including different types and colours, and legumes/beans▪ Fruit▪ Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley▪ Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans▪ Milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of 2 years) <p>And drink plenty of water.</p>
Guideline 3	Limit intake of foods containing saturated fat, added salt, added sugars and alcohol. <ul style="list-style-type: none">a. Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury snacks.<ul style="list-style-type: none">▪ Replace high fat foods which contain predominantly saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods which contain predominantly polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado.▪ Low fat diets are not suitable for children under the age of 2 years.b. Limit intake of foods and drinks containing added salt.<ul style="list-style-type: none">▪ Read labels to choose lower sodium options among similar foods.▪ Do not add salt to foods in cooking or at the table.c. Limit intake of foods and drinks containing added sugars such as confectionary, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks.d. If you choose to drink alcohol, limit intake. For women who are pregnant, planning a pregnancy or breastfeeding, not drinking alcohol is the safest option.
Guideline 4	Encourage, support and promote breastfeeding.
Guideline 5	Care for your food; prepare and store it safely.

Source: National Health and Medical Research Council

APPENDIX 2: Example foods in ADG food groups

ADG food group	Examples
Grain (cereal) foods	<p>Wholegrain: Wholemeal or wholegrain bread, brown rice, wholemeal pasta, wholegrain or wholemeal crackers, whole oats, buckwheat pancakes</p> <p>Refined grain: White bread, white rice, savoury crackers, white flour, couscous cornflakes</p>
Vegetables and legumes/beans	<p>Green and brassica: Broccoli, spinach, cabbage, cauliflower, peas, beans, lettuce, fresh herbs</p> <p>Orange vegetables: carrots, pumpkin</p> <p>Starchy vegetables: potato, white and orange sweet potato, taro, cassava, sweetcorn, parsnip</p> <p>Other vegetables: tomato, capsicum, mushroom, zucchini, cucumber, onion, vegetable juice</p> <p>Legumes as vegetables: Dried peas, beans, lentils and chickpeas</p>
Fruit	<p>Fresh/canned fruit: apples, pears, oranges, peaches, bananas, melons</p> <p>Dried fruit: sultanas, raisins, dried apricots, dates</p> <p>Fruit juice: 100% fruit juice</p>
Milk, yoghurt, cheese and/or alternatives	<p>Milk: dairy milk (all fat varieties), milk powder, buttermilk, evaporated milk</p> <p>Yoghurt: Greek yoghurt, natural yoghurt, flavoured yoghurt, fromage frais</p> <p>Cheese: cheddar, haloumi, processed cheese, cream cheese, ricotta, cottage cheese</p> <p>Alternatives: calcium enriched soy, rice or other cereal drink</p>
Lean meat and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans	<p>Lean red meat: unprocessed beef, lamb, pork, goat, kangaroo</p> <p>Lean poultry: chicken, turkey, duck, quail</p> <p>Fish: fish fillets, canned fish, shellfish, prawns</p> <p>Eggs</p> <p>Tofu: tofu, tempeh, vegetarian sausages and meat</p> <p>Nuts and seeds: nuts and seeds, nut and seed butters/pastes, tahini</p> <p>Legumes/beans: baked beans, vegetable patties, lentils, chickpeas</p>
Unsaturated spreads and oils	Polyunsaturated and monounsaturated margarines, olive oil spreads, nut and seed pastes/butters
Water	Tap, tank or rain water, bottled spring water (still or sparkling), bottled plain mineral water



INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

