Australian Aboriginal and Torres Strait Islander Health Survey: Consumption of Added Sugars

2012-13

4727.0.55.009

AUSTRALIAN BUREAU OF STATISTICS

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MEDIA RELEASE

02 November 2016 Embargo 11.30am (Canberra time)

Indigenous Australians consuming too much added sugar

Aboriginal and Torres Strait Islander people consume around 14 per cent of their total energy intake as free sugars, according to data from the Australian Bureau of Statistics.

The World Health Organization (WHO) recommends that free sugars contribute less than 10 per cent of total energy intake.

Director of Health, Louise Gates, said the new ABS report showed Aboriginal and Torres Strait Islander people are consuming an average of 18 teaspoons (or 75 grams) of free sugars per day (almost two cans of soft drink), four teaspoons more than non-Indigenous people (14 teaspoons or 60 grams).

"Free sugars include the sugars added by consumers in preparing foods and beverages plus the added sugars in manufactured foods, as well as honey and the sugar naturally present in fruit juice," said Ms Gates.

"The data shows that Aboriginal and Torres Strait Islander people living in urban areas derived more energy from free sugars than those living in remote areas (14 per cent compared with 13 per cent)."

Free sugars contributed 18 per cent to dietary energy intake for teenage boys aged 14-18 years, who consumed 25 teaspoons (106 grams) of free sugars per day. This amount is equivalent to more than two and a half cans of soft drink.

Women aged 19-30 years consumed 21 teaspoons (87 grams) of free sugars, which contributed 17 per cent to their total energy intake.

“Beverages were the source of two thirds of free sugars, with soft drinks, sports and energy drinks providing 28 per cent, followed by fruit and vegetable juices with 12 per cent, cordials (9.5 per cent), sugars added to beverages such as tea and coffee (9.4 per cent), alcoholic beverages (4.9 per cent) and milk drinks (3.4 per cent),” said Ms Gates.

More details are available in Australian Aboriginal and Torres Strait Islander Health Survey: Consumption of Added Sugars (cat. no. 4727.0.55.009), available for free download from the ABS website, http://www.abs.gov.au.

Media Note:

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IN THIS RELEASE

This publication is the third 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 update the Australian Aboriginal and Torres Strait Islander Health Survey: Nutrition Results – Foods and Nutrients, 2012-13 (cat. no. 4727.0.55.005) publication using new information about the added sugar content of foods developed by Food Standards Australia New Zealand. It contains tables and analysis including the intakes of added sugars, and types of foods and beverages contributing the added sugars. It also includes comparisons with the World Health Organization (WHO) 2015 guideline on sugars consumption which makes recommendations about the amount of energy from 'free sugars', which is a broader definition of added sugar that counts the sugar in fruit juice and honey. Although both added sugars and free sugars are included in the Excel table sets, the commentary focuses on free sugars for consistency with the WHO definition.

Unlike the analysis conducted on the total population in the April 2016 release of Australian Health Survey: Consumption of added sugars, this release does not provide modelled estimates of usual intake. Therefore, the data cannot be used to estimate the proportions of people who would exceed the WHO recommendation 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 sugar reported in this publication may underestimate of the true level of sugars consumed. See the Australian Aboriginal and Torres Strait Islander Health Survey User's Guide for more information on under-reporting.

KEY FINDINGS

- In 2012-13, Aboriginal and Torres Strait Islander people 2 years and over consumed an average of 75 grams of free sugars per day (equivalent to 18 teaspoons of white sugar)[1]. Added sugars made up the majority of free sugar intakes with an average of 68 grams (or 16 teaspoons) consumed and an additional 7 grams of free sugars came from honey and fruit juice.

- Aboriginal and Torres Strait Islander people derived an average of 14% of their daily energy from free sugars, exceeding the WHO recommendation that children and adults should limit their intake of free sugars to less than 10% of dietary energy.

- Free sugars made the greatest contribution to energy intakes among older children and young adults. For example, teenage boys aged 14-18 years derived 18 per cent of their dietary energy from free sugars as they consumed the equivalent of 25 teaspoons (106 grams) of free sugars per day. This amount is equivalent to more than two and a half cans of soft drink. Women aged 19-30 years consumed 21 teaspoons (87 grams) of free sugars, which contributed 17 per cent to their total energy intake.

- The majority (87%) of free sugars were consumed from energy dense, nutrient-poor 'discretionary' foods and beverages. Two thirds (67%) of all free sugars consumed by Aboriginal and Torres Strait Islander people came from beverages, led by soft drinks, sports and energy drinks (28%), followed by fruit and vegetable juices and drinks (12%), cordials (9.5%), and sugars added to beverages such as tea and coffee (9.4%), alcoholic beverages (4.9%) and milk beverages (3.4%).

- Intakes were higher for Aboriginal and Torres Strait Islander people living in non-remote areas where the average consumption was 78 grams (18.5 teaspoons), around 3 teaspoons (12 grams) higher than people living in remote areas (65 grams or 15.5 teaspoons).

- Aboriginal and Torres Strait Islander people consumed 15 grams (almost 4 teaspoons) more free sugars on average than non-Indigenous people. Beverages were the most common source of free sugars for both populations, however Aboriginal and Torres Strait Islander people derived a higher proportion of free sugars from beverages than non-Indigenous people (67% compared with 51%).

ADDED SUGARS AND FREE SUGARS

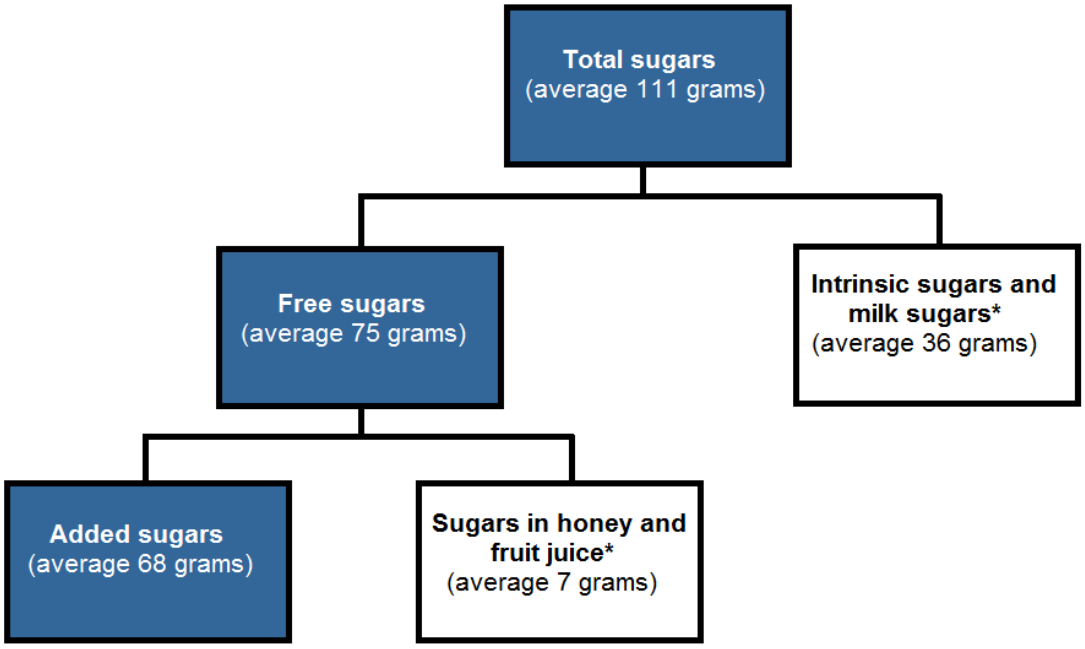
The 2013 Australian Dietary Guidelines (ADG) advises Australians to limit their intakes of foods and beverages containing added sugars.[2] Diets high in added sugars may displace nutritious foods with energy-dense, nutrient poor foods, and are associated with weight gain and dental caries.[2, 3] Added sugars include sucrose, fructose, dextrose, lactose and sugar syrups such as glucose syrup which are added during manufacture of foods or added by the consumer in the preparation of food and beverages.[4]

The term 'free sugars' extends the definition of added sugars to include sugars naturally present in honey, fruit juice and fruit juice concentrates. In 2015 the World Health Organization (WHO) issued a recommendation that both adults and children reduce their intake of free sugars to less than 10% of total dietary energy to help reduce the significant non-communicable disease burden from unhealthy weight gain and dental caries.[3]

HOW MUCH SUGAR WAS CONSUMED?

In 2012-13, Aboriginal and Torres Strait Islander people consumed an average of 111 grams of total sugars per day. Around two thirds (75 grams) of this was free sugars equivalent to 18 teaspoons of white sugar, with the balance (36 grams) being the intrinsic sugars within intact fruits and sugars naturally occurring in milk[5]. The average consumption of added sugars was 68 grams (16 teaspoons), making up the majority of free sugar intake, with the remaining 7 grams of free sugars coming from honey and fruit juice.

Figure 1: Total sugars, free sugars and added sugars – average consumption(a)(b)(c), 2012-13



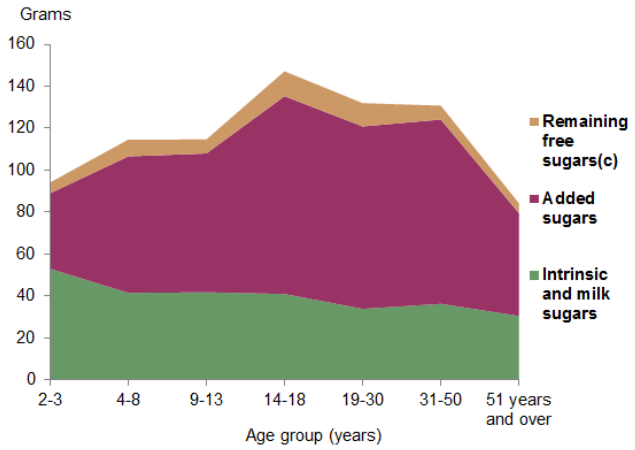
(a) Aboriginal and Torres Strait Islander people aged 2 years and over.
(b) Based on Day 1. See Glossary for definition.
(c) See Glossary for detailed inclusions of each definition.
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13
*Not directly measured – calculated from the difference between measured sugars components.

Males consumed 121 grams of total sugars on average, 20 grams more than females (101 grams). This difference was most prominent among teenagers aged 14-18 years, where males consumed 147 grams, an additional 45 grams compared to females in the same age group (102 grams).

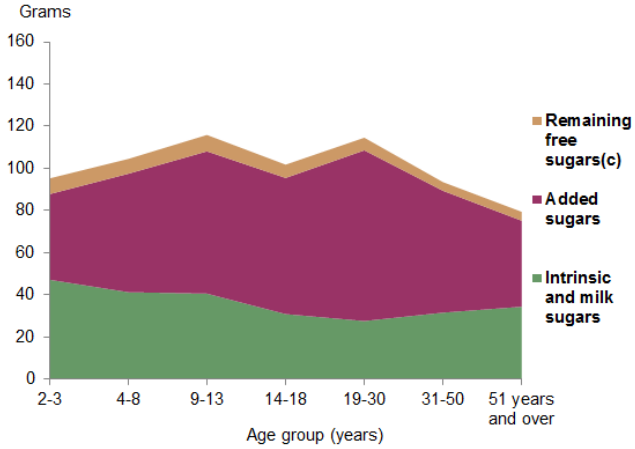
The total amount of sugar consumed increased throughout childhood years, peaking in the 14-18 years age group for males and the 9-13 years age group for females. The variation in total sugar consumed by age and sex was driven mostly by the consumption of free sugars as the amount of intrinsic and milk sugars consumed remained relatively constant across all age and sex groups, decreasing slightly with age.

Among children aged 2-3 years free sugars contributed less than half (47%) of the total sugars consumed. However, the proportion of total sugars derived from free sugars increased up to 75% for adults aged 19-30 years, reflecting the different types of foods consumed across different age groups.

Males 2 years & over - Free sugars, added sugars and intrinsic and milk sugars(a)(b), 2012-13



Females 2 years & over - Free sugars, added sugars and intrinsic and milk sugars(a)(b), 2012-13



(a) Aboriginal and Torres Strait Islander people aged 2 years and over.
(b) Based on Day 1. See Glossary for definition.
(c) Sugars in honey and fruit juice.
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

On average, 75 grams of free sugars were consumed by Aboriginal and Torres Strait Islander people. Males consumed more free sugars than females (83 grams compared with 67 grams).

The highest consumers of free sugars were Aboriginal and Torres Strait Islander teenagers (14-18 years) and young adults (19-30 years) (88 grams and 93 grams respectively).

Males aged 14-18 years consumed an average of 106 grams of free sugars (equivalent to 25 teaspoons). Around 21 teaspoons (87 grams) of free sugars were consumed on average by females aged 19-30 years.

Was there a difference by remoteness?

The amount of free sugars consumed varied by remoteness. Aboriginal and Torres Strait Islander people living in non-remote areas consumed 12 grams more free sugars on average than those living in remote areas (78 grams and 65 grams respectively)[6]. In particular, Aboriginal and Torres Strait Islander males living in non-remote areas consumed around 20 grams more of free sugars on average than males living in remote Australia (87 grams compared with 67 grams).

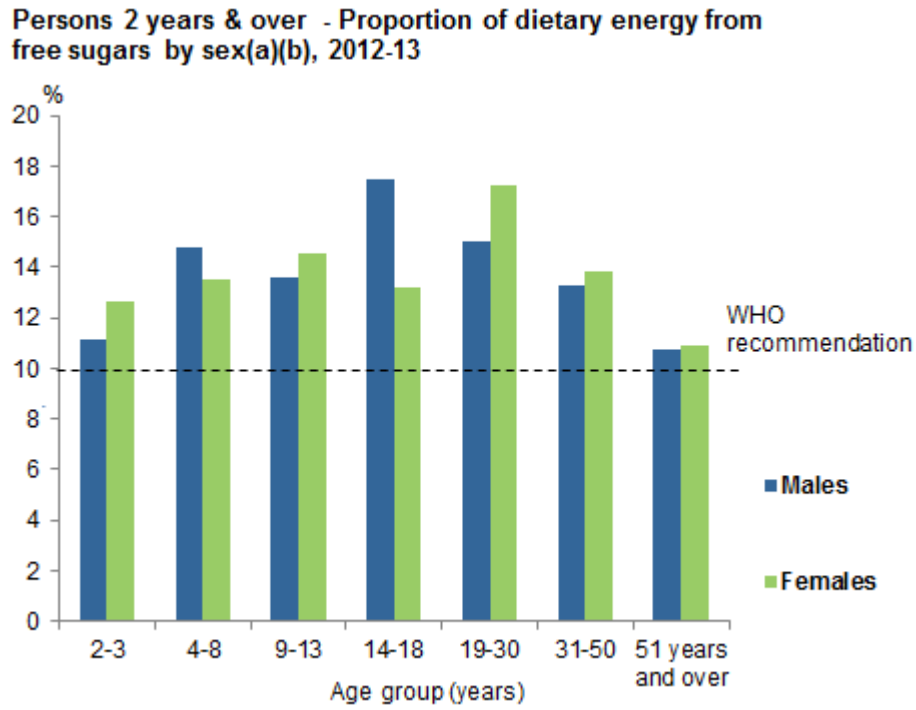
How did this compare with non-Indigenous?

On average Aboriginal and Torres Strait Islander people consumed an additional 15 grams of free sugar (almost four teaspoons) than non-Indigenous people (75 grams compared with 60 grams respectively).

DIETARY ENERGY FROM FREE SUGARS

Sugar, along with starch, protein, fat, dietary fibre and alcohol, form the energy yielding components within foods and beverages. In an initiative to help address the growing burden of disease from obesity and dental caries, the WHO recommend that both children and adults consume less than 10% of dietary energy from free sugars.[3,7] In 2012-13, Aboriginal and Torres Strait Islander people derived an average of 14% of their dietary energy from free sugars. With the exception of people aged 51 years and over (where the difference was not significant), all other age groups had average energy intakes from free sugars exceeding 10%. The proportion of energy derived from free sugars increased with age peaking at 18% for males aged 14-18 years, and 17% for females aged 19-30 years, before declining in the older age groups. Aboriginal and Torres Strait Islander people aged 51 years and over derived 11% of their energy from free sugars.

While males consumed a greater amount of free sugars on average, the proportion of energy derived from free sugars was similar between the sexes (14% for both), reflecting the different average energy intakes of males and females (9,174 kJ and 7,272 kJ respectively).



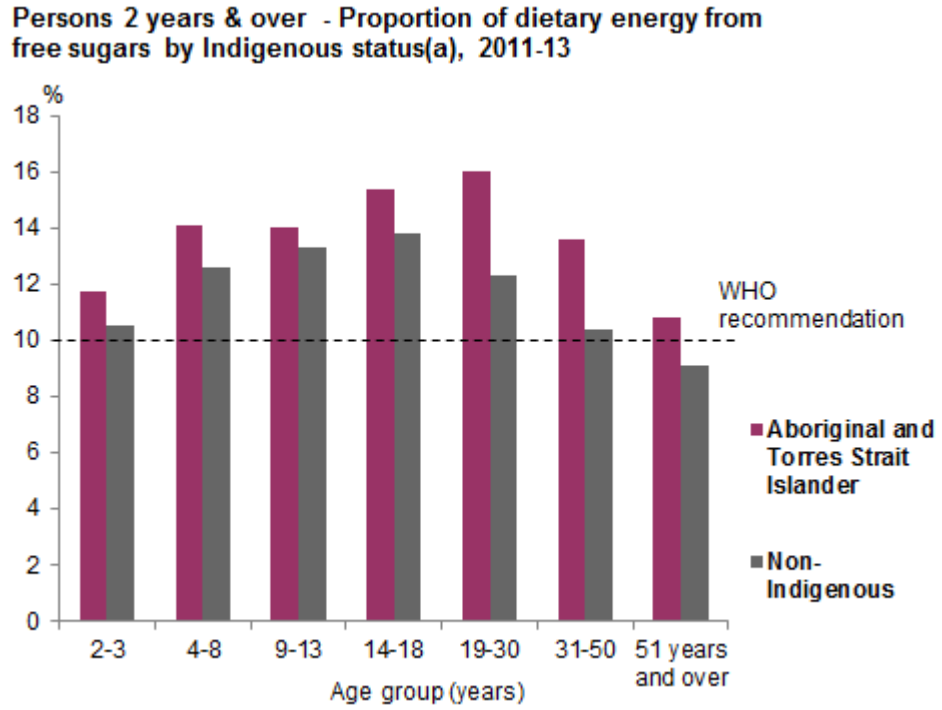
(a) Aboriginal and Torres Strait Islander people aged 2 years and over.
(b) Based on Day 1. See Glossary for definition.
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Was there a difference by remoteness?

Aboriginal and Torres Strait Islander people living in non-remote areas derived more energy from free sugars than those living in remote areas (averaging 14% and 13% respectively).

How did this compare with non-Indigenous people?

Aboriginal and Torres Strait Islander people derived more of their dietary energy from free sugars than non-Indigenous people (14% compared with 11%). In particular, Aboriginal and Torres Strait Islander adults aged 19-30 years derived 16% of dietary energy from free sugars, compared with 12% for non-Indigenous adults aged 19-30 years. This difference was also apparent for Aboriginal and Torres Strait Islander and non-Indigenous adults aged 31-50 years, where free sugars contributed 14% and 10% respectively.



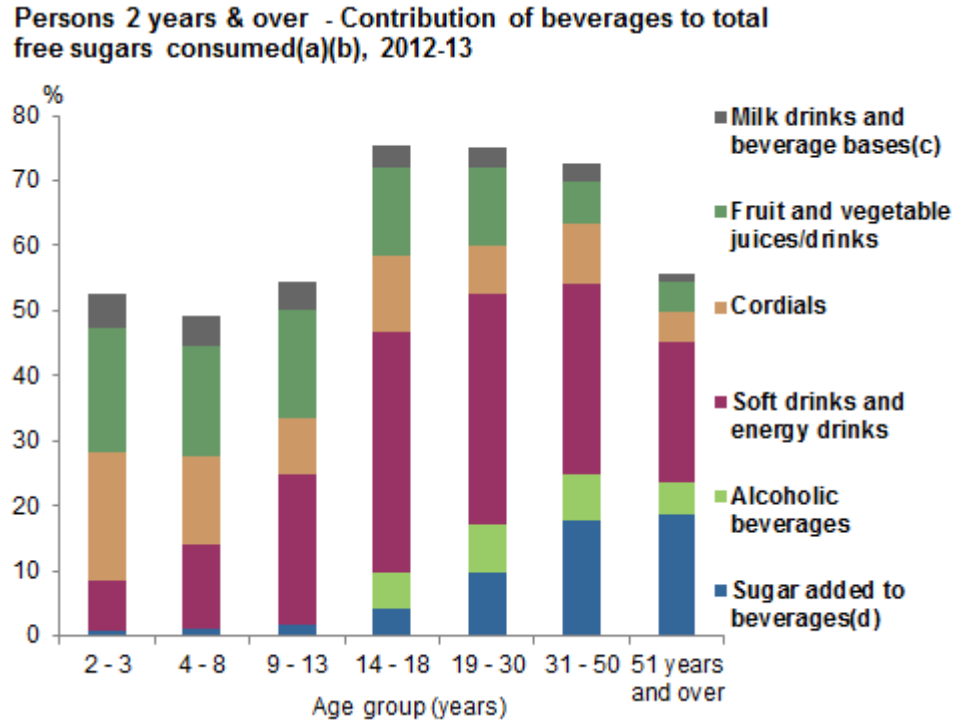
(a) Based on Day 1. See Glossary for definition.

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

SOURCES OF FREE SUGARS

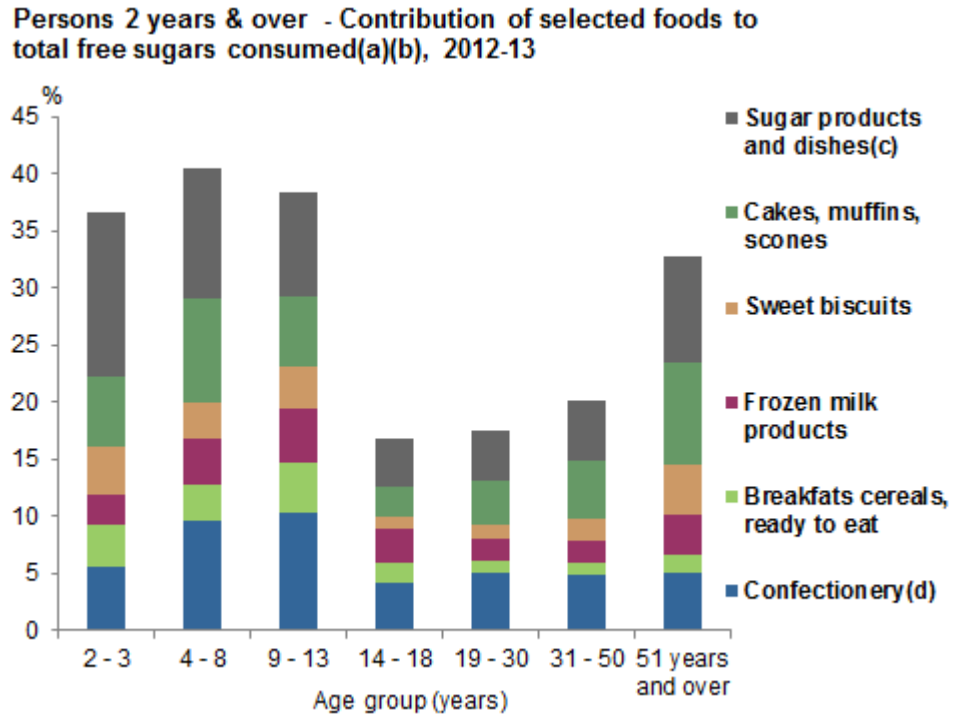
Two thirds (67%) of all free sugars consumed by Aboriginal and Torres Strait Islander people came from beverages, led by soft drinks, sports and energy drinks (28%), followed by fruit and vegetable juices and drinks (12%), cordials (9.5%), and sugars added to beverages such as tea and coffee (9.4%), alcoholic beverages (4.9%) and milk beverages (3.4%).

Adults 19 years and over derived a larger proportion of their free sugars from beverages than children and teenagers aged 2-18 years (71% compared with 60%).



(a) Aboriginal and Torres Strait Islander people aged 2 years and over.
(b) Based on Day 1. See Glossary for definition.
(c) Includes tea and coffee powders, beverage bases, and breakfast beverages. See Endnote 8 for details.
(d) See Endnote 9 for details.
Sources: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13.

Among food sources of free sugars, sugar products and dishes excluding those added to beverages contributed 6.7%. This includes products such as sugar, jam, chocolate spreads and honey. This was followed by confectionery (6.1%), cakes, muffins and scones (5.5%), frozen milk products (2.8%), sweet biscuits (2.2%) and breakfast cereals (1.9%).



(a) Aboriginal and Torres Strait Islander people aged 2 years and over.
(b) Based on Day 1. See Glossary for definition.
(c) Excluding sugar, honey and syrup added to beverages.
(d) Includes nut/seed/fruit bars.
Source: National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey, 2012-13

Given the types of food and beverage categories contributing to free sugars consumption, it is unsurprising that discretionary foods accounted for the majority (87%) of free sugars. The leading foods and beverages contributing to the 13% of free sugars from non-discretionary food sources were fruit and vegetable juices (4.9%), flavoured milks and milkshakes (2.2%) and breakfast cereals (1.3%).

Was there a difference by remoteness?

Aboriginal and Torres Strait Islander people in remote areas consumed a greater proportion of their free sugars from beverages than those in non-remote areas (71% compared with 66%). While the proportion of free sugar coming from soft drinks was similar between remote and non-remote areas, people in remote areas derived a larger proportion (14%) of their free sugar intake from the sugars added to beverages such as tea and coffee than people in non-remote areas (8.3%)

Aboriginal and Torres Strait Islander people living in remote areas derived a higher proportion of their free sugar intake from discretionary sources than people living in non-remote areas (91% and 86% respectively).

How did this compare with non-Indigenous people?

Beverages were a major source of free sugars among both populations however, Aboriginal and Torres Strait Islander people derived two thirds (67%) of their free sugar intake from beverages, where non-Indigenous people derived just over half (51%). This is consistent with previous results published from the 2012-13 NATSINPAS and 2011-12 NNPAS, where 50% of Aboriginal and Torres Strait Islander people reported consuming sugar-sweetened beverages on any given day, compared with 34% of non-Indigenous people.[10,11]

In particular, Aboriginal and Torres Strait Islander adults aged 19 years and over consumed a greater proportion of their free sugar intake from soft drinks, sports and energy drinks (31%), sugar added to beverages (14%) and cordials (7.8%) than non-Indigenous adults who consumed 19% of their free sugars from soft drinks, sports and energy drinks, 9.0% from sugar added to beverages and 4.4% from cordials.

Aboriginal and Torres Strait Islander people consumed a higher proportion of free sugars from discretionary sources than non-Indigenous people (87% compared with 81%).

ENDNOTES

1. A level teaspoon of white sugar contains 4.2 grams of sugar.
2. National Health and Medical Research Council, 2013, *Eat For Health: Australian Dietary Guidelines,* Canberra: Australian Government, <https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/n55_australian_dietary_guidelines_130530.pdf >, Last accessed xx/xx/2016.
3. World Health Organization, 2015, *Guideline: Sugars intake for adults and children,* Geneva: WHO, <http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028_eng.pdf>, Last accessed 19/04/2016.
4. Food Standards Australia New Zealand, 2016, *Determining the amount of added Sugars and free sugars in foods listed in the AUSNUT 2011-13 dataset*; Canberra: Australian Government, <http://www.foodstandards.gov.au/science/monitoringnutrients/ausnut/>, Last accessed 27/10/2016.
5. All definitions of free sugars, intrinsic sugars and sugars from milk are based on WHO concepts and terminology. See Glossary for definitions.
6. Components may not sum due to rounding.
7. The percentage of energy from free and added sugars was estimated by multiplying each gram of free and added sugars by a conversion factor of 16 to determine the kilojoules of energy.
8. The category 'flavoured milk drinks and beverage bases' was a grouping to capture the free sugars in the AUSNUT foods: Dairy milk (cow, sheep, goat), Flavoured milk and milkshakes, Dairy milk substitutes, unflavoured, Dairy milk substitutes, flavoured, Other beverage flavourings and prepared beverages (includes products such as Milo, breakfast beverages), chai latte, bubble tea, tea mix powders, coffee mixes and coffees prepared from coffee mix, and coffees prepared with soy milk.
9. Sugar added to a beverage was measured by summing the free sugar within the AUSNUT major food group 'Sugar products and dishes' where those food records also had the 'beverage with additions' combination code.
10. Australian Bureau of Statistics, 2015, Consumption of Sweetened Beverages, Australian Health Survey: Nutrition First Results – Foods and Nutrients, 2011-12, cat. no. 4364.0.55.007, ABS, Canberra.
11. Sugar-sweetened beverages include cordials, soft drinks and flavoured mineral waters, electrolyte, energy drinks and fortified waters, and fruit and vegetable drinks that have added sugar (typically sucrose).

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
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
mg	milligram
g	gram
g/day	grams per day
kJ	kilojoule
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.

Added sugars

The definition for added sugars is based on the definition of 'sugars' in Clause 1 of Standard 2.8.1 of the Australia New Zealand Food Standards Code.

"Sugars means –

a) hexose monosaccharides and disaccharides, including dextrose, fructose, sucrose and lactose; or
b) starch hydrolysate; or
c) glucose syrups, maltodextrin and similar products; or
d) products derived at a sugar refinery, including brown sugar and molasses; or
e) icing sugar; or
f) invert sugar; or
g) fruit sugar syrup; derived from any source,

but does not include –

h) malt or malt extracts; or
i) sorbitol, mannitol, glycerol, xylitol, polydextrose, isomalt, maltitol, maltitol syrup or lactitol."

Maltodextrin was not reported as part of total sugars in AUSNUT 2011-13 and thus could not be considered in this analysis. Honey, fruit juices and fruit juice concentrates are not included in this Standard and as such were not considered 'added sugars' for this definition of added sugars.

For more information see: *Developing the Added Sugars and Free Sugars datasets* available from Food Standards Australia New Zealand http://www.foodstandards.gov.au/science/monitoringnutrients/ausnut/

Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)

The Australian Aboriginal and Torres Strait Islander Health Survey 2011-13 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.

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Australian Dietary Guidelines

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 content of the Australian Dietary Guidelines applies 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 Users' Guide for more information

Carbohydrate

Carbohydrates usually provide the major part of energy in human diets. Carbohydrates are comprised of the elements of carbon, hydrogen and oxygen. Data for total carbohydrates include starch, sugars and related substances (sugar alcohols and oligosaccharides). Sugar alcohols and oligosaccharides are included in 'Total carbohydrates' but not in starch and sugar sub-totals. Therefore, total carbohydrate does not always equal the sum of sugars and starch.

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. Nutrient intakes derived from 24-hour recall data do not represent the usual intake of a person because there is variation in day-to-day intakes.

Disaccharides

Disaccharides are sugars composed of two monosaccharides. Sucrose, maltose, galactose and lactose are examples of disaccharides.

Dietary energy

Dietary energy is measured in kilojoules (kJ) and consists of the energy provided by protein, fat, alcohol and carbohydrate (comprising sugars and starch). Small amounts of additional energy are from dietary fibre and organic acids.

Discretionary foods

The 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". For more information, see the Discretionary Foods chapter of the AHS: Users' Guide, 2011-13 (cat. no. 4363.0.55.001).

Energy

Energy, measured in kilojoules (kJ), is required by the body for metabolic processes, physiological functions, muscular activity, heat production and growth and development. All energy reported in the 2011-12 NNPAS and 2012-13 NATSINPAS is energy including that from dietary fibre.

Free sugars

Free sugars, as defined by the WHO, refers to monosaccharides and disaccharides added to foods and drinks by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates. For more information see WHO/FAO (2003) Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO Expert consultation

For information on the process for calculating free sugars for AUSNUT foods see *Developing the Added Sugars and Free Sugars datasets* available from Food Standards Australia New Zealand http://www.foodstandards.gov.au/science/monitoringnutrients/ausnut/

Intrinsic sugars

Intrinsic sugars is defined by the WHO as the sugars incorporated in the structure of intact fruit and vegetables. In this analysis, intrinsic sugars plus milk sugars are estimated from total sugars minus free sugars. See WHO Guideline http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028_eng.pdf

Lactose

Lactose is a disaccharide and is the sugar found naturally in milk products. Lactose is made up of two monosaccharides; glucose and galactose.

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.

Milk sugars

Milk sugars are the natural sugars present in milk. In this analysis, intrinsic sugars + milk sugars are estimated from total sugars – free sugars.

Monosaccharides

Monosaccharides are the simplest forms of sugars. Examples are glucose (also sometimes called dextrose) and fructose.

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).

National Nutrition and Physical Activity Survey (NNPAS)

The National 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 eight-day pedometer component)
- use of tobacco
- physical measurements (height, weight and waist circumference).

Non-alcoholic beverages

The 'Non-alcoholic beverages' food groups 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 are available in AATSIHS: Nutrition Results – Foods and Nutrients, 2012-13 (cat. no. 4727.0.55.005).

Nutrient Database (AUSNUT)

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.

Percentage contribution to energy intake

Percentage contribution to energy intake refers to the proportion of energy that a food or macronutrient contributes to each person's total energy intake. In the NATSINPAS, the energy from each macronutrient was estimated by multiplying each gram of a particular macronutrient by a conversion factor to determine the kilojoules of energy. For more information, see the Nutrient Intake chapter of the AHS: Users' Guide, 2011-13 (cat. no. 4363.0.55.001).

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.

Sucrose

Sucrose is a natural form of sugar found in many foods. It is also known as table sugar. Sucrose is a disaccharide comprising of glucose and fructose.

Total sugars

Total sugars are the sum of fructose, glucose, sucrose, maltose, lactose and galactose.

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. See the AATSIHS Users' Guide for more information.

EXPLANATORY NOTES

INTRODUCTION

1 This publication is the third 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 Added Sugars publication contains sugar 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 added sugars and free sugars 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 25 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 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.

7 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

8 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.

9 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).

10 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.

11 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.

12 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

13 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.

14 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.

15 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.

16 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 44 to 48 and more information on the scope and coverage of the survey is provided in the Users' Guide.

17 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.

18 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

19 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).

20 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**

21 More information on response rates is available in the Users' Guide.

DATA COLLECTION

22 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.

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

24 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.

25 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.

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

27 More information on data collection and a copy of the survey questionnaire are provided in the Users' Guide.

WEIGHTING, BENCHMARKING AND ESTIMATION

28 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.

29 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).

30 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.

31 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.

32 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.

33 More information on weighting, benchmarking and estimation is provided in the Users' Guide.

RELIABILITY OF ESTIMATES

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

35 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).

36 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.

37 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.

38 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.

39 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.

40 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.

41 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.

42 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.

43 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

44 Under-coverage is the shortfall between the population represented by the achieved sample and the in-scope population. Weighting, as described in paragraphs 28 to 33 adjusts for under-coverage, reducing the under-coverage bias in estimates.

45 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).

46 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.

47 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%).

48 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

49 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

50 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.

51 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

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

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

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

ACKNOWLEDGEMENTS

55 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.*

56 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.

57 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

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

59 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.

60 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

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

62 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, beverages and dietary supplements from the first interview, as well as some general information on dietary behaviours.

This publication is the third release of information from the nutrition component of the NATSINPAS and it presents information on the intake of added sugars and free sugars, the proportion of energy derived from added and free sugars, as well as the relative contribution of major and sub-major food groups to added and free sugar intake.

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

$$\frac{1.645}{1.96}$$

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

$$\frac{2.576}{1.96}$$

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 the mean grams of added sugars consumed by Aboriginal and Torres Strait Islander males aged 19 years and over is 79.3 and the MoE is +/- 8.6 grams. The SE is calculated by:

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

$$= \left(\frac{8.6}{1.96} \right)$$

$$= 4.4$$

9 There are about 19 chances in 20 that the estimate of the mean grams of added sugars consumed by males aged 19 years and over is +/- 8.6 grams from the population value.

10 Similarly, there are about 19 chances in 20 that the mean grams of added sugars consumed by males aged 19 years and over is within the confidence interval of 70.7 grams to 87.9 grams.

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:

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

Australian Bureau of Statistics

INQUIRIES

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