This fact sheet looks at the intake of sugars in Australia and New Zealand. It summarises the scientific evidence on sugars intake and obesity and current advice on how much we should be consuming.

Sugars are types of carbohydrates which are found in a wide variety of foods. Carbohydrates contain carbon, hydrogen and oxygen and are the main energy source for the body. As such, sugars are an integral part of our diet. Sugars are present in many different forms, and perform numerous roles in foods and beverages. There is often misunderstanding about where sugars occur in the diet and exactly how much we are consuming. The following information is an overview of the scientific evidence on these topics.

Where is sugar in our diet?

As shown in Table 1, the sugars in our diet come from different sources, and there are varying ways in which these are described. Some sugars are naturally present in foods, and some are added to foods. ‘Sugar’ or ‘table sugar’ typically refers to sucrose from sugarcane or sugar beets. Food composition data on sugars, often do not record added and naturally occurring sugars. This is because there is no practical method to measure these separately and accurately. Total sugars is usually reported, and the presence of added sugars can be determined by the ingredients list. At the same time, the body does not distinguish between sugars which occur naturally and those which are added, and they both contribute the same amount of kilojoules to the diet. Australian and New Zealand national nutrition surveys provide us with the best information on sugars in our diets.

How much sugar do adults eat?

KEY FINDINGS OF THE 2008/09 NEW ZEALAND ADULT NUTRITION SURVEY (2011)

Carbohydrate provided 46% of daily energy intake for males and 47% for females. The main source of carbohydrate in New Zealanders’ diets was bread (17%). Males had a greater total sugar intake than females although overall the proportions of sugar from sucrose, fructose, and lactose were relatively similar, see Table 2.

TABLE 2

<table>
<thead>
<tr>
<th>Sugars intake in New Zealand adults (median, g/d)</th>
<th>ALL</th>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sugars</td>
<td>107</td>
<td>120</td>
<td>96</td>
</tr>
<tr>
<td>Sucrose</td>
<td>48</td>
<td>55</td>
<td>42</td>
</tr>
<tr>
<td>Fructose</td>
<td>20</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Lactose</td>
<td>13</td>
<td>14</td>
<td>12</td>
</tr>
</tbody>
</table>

Fruit (18%), non-alcoholic beverages (17%), sugar and sweets (15%), and milk (10%) were the major sources of total sugars.

The majority of people consumed soft drinks or energy drinks never or less than once a week (57%). A small proportion consumed soft drinks daily (7%).
Differences between the 1997 and 2008/2009 New Zealand nutrition surveys for adults

- The reported energy intake of New Zealanders aged 15 years and over has dropped since 1997, although the decrease for females was not significant.
- Total sugars intake has decreased in both males and females compared with 1997.
- Median daily sucrose intake was 48g in 2008/09 (down from 53g in 1997), contributing approximately 9% of total energy.

KEY FINDINGS OF THE 1995 AUSTRALIAN NATIONAL NUTRITION SURVEY (1997) 3, 4
Carbohydrate provided approx. 45% of daily energy intake for Australian adults. The percent contribution of sugar decreased with age, and that of starch increased slightly with age. Sugars intake was greater for males than for females, although there was little difference in percent energy contribution between the sexes (Table 3). The largest contributor to total sugars intake in all adults was non-alcoholic beverages, followed by milk products and dishes. These categories made up about half of all sugars consumed. Sugar based drinks contributed to 16% of the total sugars intake in men and 19% in women.

### MEAN SUGARS INTAKES IN AUSTRALIAN ADULTS

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sugars (g/d)</td>
<td>134</td>
<td>97</td>
</tr>
<tr>
<td>% total energy</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>Added sugars (g/d)</td>
<td>74</td>
<td>45</td>
</tr>
<tr>
<td>% total energy</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Natural sugars (g/d)</td>
<td>60</td>
<td>52</td>
</tr>
<tr>
<td>% total energy</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

Differences between the 1983 and 1995 Australian adult national nutrition surveys.5
- Mean intake of total carbohydrate increased among men and women.
- Total sugars intake increased significantly between 1983 and 1995 by 14g in men and 5g in women.
- Regarding the percent energy contribution, the proportion of energy from total sugars increased between 1983 and 1995 from ~18 to 20% in men, and stayed relatively constant at 21% in women.

How much sugar do children eat?

**ANALYSIS OF NZ CHILDREN’S NUTRITION SURVEY (2002)**6

- Mean total sugar intake contributed 23-26% of total energy intake across all age groups (5 – 14 years); sucrose accounted for approximately half of this.
- The main contributors to total sugars intake were beverages (all hot and cold beverages excluding plain milk) (24%), fruit (17%) and sugar and sweets.
- Sucrose was the most predominant form of sugar in children’s diets.
- The main contributors of sucrose were beverages (26%), sugar and sweets (21%), fruit (11%) and biscuits (11%).
- Principle sources of overall energy were: Bread and bread-based dishes (17%), potatoes, taro and kumara (8%), milk (6%), biscuits (6%) and beverages.
- Sugar, sweets, cakes and muffins contributed less than 10% of total energy.
- Powdered drinks contributed the most sucrose from beverages (45%), followed by soft drinks (33%).

**ANALYSIS OF THE 2007 AUSTRALIAN NATIONAL CHILDREN’S NUTRITION AND PHYSICAL ACTIVITY SURVEY (ANCNPAS)**7

- Mean total sugar intake contributed 23-26% of total energy intake across all age groups (2-16 years).
- Milk products and dishes, non-alcoholic beverages and fruit products and dishes made the largest contributions to total sugars intakes.
- Cereal and cereal products, milk products and dishes, and cereal-based products and dishes contributed 17%, 18% and 16% respectively, to total energy intake.
- Confectionery and cereal/nut/fruit/seed bars contributed less than 10% of total energy.
- Soft drinks and flavoured mineral waters contributed less than 3% of total energy intake.
FACT SHEET

CONTINUED OVER

Recommended intake of sugar

In relation to sugars, the New Zealand Food and Nutrition Guidelines series state: “Prepare foods or choose pre-prepared foods, drinks and snacks…. with little added sugar; limit your intake of high-sugar foods.” The Australian Dietary Guidelines state: “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.”

The European Food Safety Authority reviewed the evidence and found insufficient data in order to set an upper limit for intake of (added) sugars. This was based on risk of dental caries, weight gain, micronutrient density of the diet, serum triglyceride and blood cholesterol. The World Health Organisation recommend that no more than 10% of our total energy comes from free sugars. However, it should be noted that this recommendation is based on risk of dental caries, rather than obesity, and also the interpretation of a range of epidemiologic, social, economic and political impacts rather than being solely based on scientific evidence.

For both adults and children there was no significant difference between overweight/obese and normal individuals regarding energy intake from the four different diet types.

There was no significant relationship between sucrose from sugar-containing beverages and BMI amongst children or adults. This included alcohol for adults.

Obese men, women and children had significantly lower intakes of sucrose from sugar-containing beverages than normal weight individuals.

In Australia, further analysis of the 1995 National Nutrition Survey revealed no significant associations between sugars intakes and health variables.

The authors examined total, added sugars and sugars from naturally occurring sources. Survey dietary data was collected using the 24 hour recall method.

For both men and women, intake of sugars did not significantly contribute to variance in BMI. Data was adjusted for age, exercise, use of weight reduction diets, under- or over-reporting, and total energy intake.

There was no significant association with systolic or diastolic blood pressure, or blood pressure risk categories.

No significant relationship observed between sugar intake and self-reported health status.

The authors concluded intakes of sugars are poor predictors of health variables.

ENERGY VALUES

The energy provided by carbohydrate is similar to protein while fat provides over twice the energy content. Whatever form sugars are consumed in, it contributes to our energy intake, with every gram providing 4kcal of energy. Appropriate intake of sugar is dependent on an individual’s total energy intake and output, and what foods or drinks have provided that sugar. In general it is recommended that carbohydrate (which includes sugars) should contribute 45-65% of total energy.

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Energy Content</th>
</tr>
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<tbody>
<tr>
<td>Carbohydrate (including sugars)</td>
<td>4kcal or 17kJ per gram</td>
</tr>
<tr>
<td>Protein</td>
<td>4kcal or 17kJ per gram</td>
</tr>
<tr>
<td>Fat</td>
<td>9kcal or 37kJ per gram</td>
</tr>
<tr>
<td>Alcohol</td>
<td>7kcal or 29kJ per gram</td>
</tr>
</tbody>
</table>
The New Zealand Food and Nutrition Guidelines provide the following practical advice on carbohydrates in the diet:20:

- Eat a variety of carbohydrate foods including bread, cereal and legumes
- Include wholegrain/wholemeal breads and cereals in the diet.
- Eat plenty of fruit and vegetables
- Remember that plant foods such as cereals, bread, vegetables, fruit and legumes are good sources of dietary fibre.
- Choose foods and drinks that are low in sugar to avoid excess energy intake. Remember that non-alcoholic beverages such as soft drinks and fruit juices are a significant dietary source of sugar.
- Sweets, honey, sweet spreads and dried fruits are concentrated sources of sugar.
- Keep high sugar foods such as cakes and sweets for treats.
- To reduce dental decay, restrict the frequency of eating foods and drinking beverages with high sugar content. If eating sugary foods, do so at mealtimes instead of between meals.

Discussions around sugar intake should also consider a number of other factors which include the following:

- Overall energy density of the food (total energy per gram). This will be determined by total fat and water content
- Total amount of the food consumed and therefore total kilojoules from all dietary sources

WHAT IS HIGH-FRUCTOSE CORN SYRUP?

High-fructose corn syrup (HFCS) is a sweetener derived from corn. It is used by the food industry in the USA and some other countries. Although not typically used in Australia22 or NZ, it may be an ingredient in some imported food products. Like sucrose, it is a mixture of glucose and fructose, though the ratio of glucose to fructose varies. The most common form is HFCS-55, which is 55% fructose and 45% glucose.

OUR PREFERENCE FOR SWEET TASTE

We all have a preference for sweet taste, which is with us from birth. The body’s sensory system has evolved to detect the basic tastes. Sweetness can indicate energy rich food that is safe to eat. This natural preference for sweet taste is often linked to the idea of food addiction, as a cause of obesity. However studies have not found sucrose is addictive in humans24 and urge caution when considering the scientific evidence for this concept25.

CONCLUSION

Sugars in the diet come from a great many food sources. The body cannot differentiate between sugar that is naturally present in a food or drink from that which is added. It is also difficult to separate and measure the two, analytically. A simple way of looking at a healthy balance is to first ensure that total energy intake does not exceed energy output. Secondly; it is advisable to ensure that the overall nutrient composition of the diet is sufficient, by eating a wide range of foods from the main food groups. A moderate amount of sugar can be included and enjoyed as part of a varied and balanced diet and an active lifestyle.

REFERENCES