



# SWEET TALKING



## Summary

Sugars are a type of carbohydrate (the group of substances that includes starch and fibre). There are different kinds, grouped by how complicated their structure is. Some sugars are there naturally in foods like fruits, honey, vegetables or milk. They may also be added for taste (to everything from bread to sweets). Glucose, fructose, and sucrose are common sugars. Sucrose is what we usually add to food.

Our body needs some sugar. We break it down to get energy for our cells. But too much – wherever it comes from – can be bad for our teeth, make us put on weight, make us unwell, or cause diabetes. Most of us need to eat less sugar.

The World Health Organization (WHO) suggests adults eat less than 12 teaspoons of sugar a day from all sources (except fresh fruit and veges). That's about 10% of their total energy intake.

## What are sugars?

Sugars are a type of carbohydrate based on rings (called “saccharides”) made of carbon, hydrogen and oxygen. Our body breaks down sugars for energy and they release 17 kJ of energy per gram, just like other carbohydrates. Some common food sugars include:

**Monosaccharides** (with one ring) like glucose, fructose, and galactose.

**Disaccharides** (with two rings) like sucrose (glucose + fructose), lactose (glucose + galactose) and maltose (2 glucose). Honey is 30% glucose and 40% fructose. White sugar is about 98% sucrose, and brown sugar is similar – its colour comes from 5% to 10% molasses it contains.

## Which foods contain natural sugars?

Glucose and fructose occur separately, and as sucrose, as natural (intrinsic) sugars in fruits, some vegetables, plant juices and honey. There's natural lactose in milk, and we get maltose from breaking down starch. Dried fruit contains natural sugars but they've been really concentrated by drying. Fresh fruit juice as a drink contains natural sugars from many fruits – one glass of fresh orange juice may have the sugar from 5–6 oranges (and commercial juices often use even more concentrated fruit purees).



## What are “free”, “added” “intrinsic” and “total” sugars?

There's been lots of debate about how to count the natural sugars in foods like fruit juice or honey if they've been added to sweeten another food. The World Health Organization (WHO) suggested using the term **free sugars** to refer to “all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and fruit juices”. This includes the many natural and man-made **added sugars\*** that aren't sucrose – like glucose syrups, fruit sugar syrups, purees and nectars. It doesn't include sugars naturally found in the cells of whole fresh fruits and vegetables (“**intrinsic sugars**”). Some people (not WHO) put natural milk sugars in this group. So: **Total sugars = free sugars + intrinsic (and milk) sugars.**

From 2018, USA nutrition information panels (NIPs) will have to list added sugars as well as total sugars but NIPs in NZ will continue to show only **total sugars.**

## What about the sugars in processed foods?

The main **added sugar** in processed foods is sucrose. It accounts for 9.5% of our total energy intake in NZ. The main source of **total sugars** for NZ teenagers are soft sugary or fizzy drinks (up to 29% total sugars). For all ages, NZ's main sources of **added sugars** are sweets and sugars (23% of added sugars), soft drinks (16%), followed by cakes and biscuits (12%), and dairy products (6%). But even savoury or “healthy” foods like simmer sauces, tinned soups, baked beans, yoghurts, breakfast cereals and muesli bars can contain unexpectedly high amounts of added sugars (which is why they're sometimes called “**hidden sugars**”).

## How much do sugar do we need?

WHO recommends a maximum **free sugars** intake of under 10% of our total daily energy intake (and preferably under 5%). That's only about 50 g or 12 teaspoons of sugar a day (1 teaspoon = 4 g sugar = 68 kJ energy) for an adult. This doesn't apply to **intrinsic sugars** which come with helpful nutrients like fibre, vitamins and minerals, and WHO reckons there's no reliable evidence linking them to bad health effects. (Compare this with a cola-type drink where 100% of its carbohydrate and energy comes from free sugars, with no protein, fibre or useful minerals.) A recent NZ study found we get 11% of our total energy (14 tsp) from free sugars → just over what's recommended – and 21.5% of our total energy from total sugars.

When a NIP lists sugar content as a % DI (% of daily intake) the manufacturer is basing this on a different calculation and higher value of **90 g total sugars** (22 tsp), not **50 g free sugars.**

## Why is eating too much sugar a problem?

Problems from too much sugar include tooth decay, weight gain and increased risk of some forms of heart disease and diabetes. Too much fructose, in particular, (from soft drinks and sweets) can have bad effects over time as our liver quickly breaks it down into fats, many of which it stores. It also pushes these fats into our bloodstream. An unhealthy “fatty liver” can develop and fats in the blood can raise blood pressure, cause insulin resistance (linked to diabetes) and obesity.



## How does the sugar content of some common foods compare?

Food - and serve size	Sugar (g/100 g or 100 mL)	Sugar (g/ serve)	Sugar (tsp per serve)
Canned kidney beans in brine - 300 g tin	1.0	3.0	¾
Tinned baked beans in tomato sauce - 300 g tin	7.5	22.5	< 6
One raw tomato	2.7	3.3	< 1
One raw apple - skin on	10.4	17	about 4
One banana - 19 to 20 cm	15.2	16.8	about 4
One orange	8.5	12.7	about 3
Tomato sauce - 1 tablespoon	24.4	4.0	1
Chunky tomato and vegetable simmer sauce - 1 cup	9.1	24.9	about 6
Coco Pops - 1 cup	38.8	20.3	5
Super Fruity toasted muesli - 1 cup	29.1	38.8	< 10
Light n Tasty apricot fruit muesli - 1 cup	25.2	19.5	< 5
All Bran breakfast cereal - 1 cup	18.2	14.4	< 4
Weet-Bix - 2 bix	1.7	0.6	< 1/7
Regular Fresh n Fruity Yoghurt - 150 g pot	12.1	18.5	< 5
Lite Fresh n Fruity Yoghurt - 150 g pot	2.1	3.2	< 1
Plain unsweetened yoghurt -150 g pot	3	4.5	about 1
Tim Tam -one biscuit	46.4	8.8	about 2
Gingernut biscuit - 2 biscuits (5.4 cm)	37.5	9.8	about 2 ½
Chocolate muffin - 6 cm diameter, 4 cm high	33.8	20.3	about 5
Wheatmeal /white sandwich bread - 2 slices	3.8-4.3	2.4-2.8	< 1
Honey - 1 tablespoon	78.1	16.4	4
Berry jam - 1 tablespoon	67.8	10.6	< 3
Nutella spread - 1 tablespoon	55.8	7.8	< 2
Dried apricot - 10 halves	35.6	27.2	< 7
Dried dates -10 pitted dates	66.5	55.2	< 14
Peanut butter frooze balls (with date base) - 5 balls	43.9	30.5	< 8
Mars Bar - 1 bar	55.9	33.5	about 8 ½
Apricot fruit leather - 1 leather	57.3	22.9	< 6
Wholemeal fruit muesli bar- 1 x 50g bar	47	23.5	< 6
Freshly squeezed fresh orange juice- 250 mL glass	9.2	23.7	< 6
Just Juice orange & apple "no added sugar" - 250 mL glass	9.1	22.7	< 6
Unsweetened bottled orange juice - 250 mL glass	7.0	17.9	< 5
Just juice 50% less sugar orange (with stevia)- 250 mL glass	3.8	9.6	about 2 ½
Energy drink like V -250 mL	10.3	26.6	< 7
Cola type soft drink - 250 mL	7.9	20	5
Lemon cordial at 1:6 dilution with water - 200 mL glass	7.8	15	< 4
Milk standard 3.3% fat, low fat or trim →250 mL glass	3.8-5	9.8-12.8	2 to 3
Source: The Concise New Zealand Food Tables, 12th edition 2016 (2017) and food labels. g = gram. < less than As a rough guide, 30 g sugars per 100 g food is a lot of sugar; 5 g or less is low sugar (2.5 g/100 mL in liquids).			



## What can I do if I want to cut down on sugar?

- Replace sugary drinks with water or low fat milk and watch the fruit juice.
- Replace sweet snacks with fresh veges or fruit to swap added for intrinsic sugar.
- Aim to not add sugars (including honeys, nectars or syrups) to foods or drinks.
- Aim for the lower sugar breakfast cereals.
- Read labels and NIPs to cut down on added and hidden sugars and check out our factsheets on “How to Digest Health and Nutrition Claims” and “Tricky Ingredients”.
- Try unsweetened, reduced, low or sugar-free options especially in drinks and yoghurts and consider using sugar substitutes in moderation. See our factsheet on Sugary sweet alternatives to find out more about them.



### \*Names for added sugars in ingredients include:

dextrose, sucrose, powdered sugar, corn syrup, high fructose corn syrup, fruit puree/juice/concentrate, honey, maltose, molasses, brown sugar, nectars (e.g. peach or agave nectar), invert sugar, malt syrup, coconut sugar, date sugar, agave syrup, brown rice syrup and maple syrup.

## USEFUL LINKS

Ingredients with George Zaidan, 24 November 2016. “What Makes Sugar-free Gum Sweet?” Retrieved from: [https://www.youtube.com/watch?v=hNHxbTAJd8&index=11&list=PLivjPDit6ApStHBU9Z\\_5vB7dM\\_tT\\_QjyX](https://www.youtube.com/watch?v=hNHxbTAJd8&index=11&list=PLivjPDit6ApStHBU9Z_5vB7dM_tT_QjyX) 5 September 2017.

Choice.com., 1 May 2015. “Breakfast Cereal Reviews” and Retrieved from: <https://www.choice.com.au/food-and-drink/bread-cereal-and-grains/cereal-and-muesli/articles/breakfast-cereal-review> and <https://www.choice.com.au/babies-and-kids/feeding-children/making-healthy-choices/articles/kids-breakfast-cereal-review> 5 September 2017.

Sugar Research Advisory Service, n.d. <https://www.srasanz.org/>

“How to Digest Health and Nutrition Claims” and “Tricky Ingredients, and “Sugary sweet alternatives” factsheets from Life Education.

## REFERENCES

Ministry of Health, October 2015. “Eating and Activity Guidelines for New Zealand Adults”. Retrieved from: [http://www.health.govt.nz/system/files/documents/publications/eating-activity-guidelines-for-new-zealand-adults-oct15\\_0.pdf](http://www.health.govt.nz/system/files/documents/publications/eating-activity-guidelines-for-new-zealand-adults-oct15_0.pdf) 5 September 2017.

Ministry of Health, July 2012. “Food and Nutrition Guidelines for Healthy Children and Young People (Aged 2-18 years): a Background Paper. Partial Revision February 2015.” Retrieved from: <http://www.health.govt.nz/system/files/documents/publications/food-nutrition-guidelines-healthy-children-young-people-background-paper-feb15-v2.pdf> 5 September 2017.

Royal Society of New Zealand, 2016. “Expert Advice Paper: Sugar and Health”. Retrieved from: <https://royalsociety.org.nz/what-we-do/our-expert-advice/all-expert-advice-papers/sugar-and-health/> 5 September 2017.

Sugar Research Advisory Service, 2016. “Spotlight on New Zealand’s Sugar Consumption” and “Sugar and Health – Recommended Current Intakes”. Retrieved from: [https://www.srasanz.org/files/4914/9853/5808/Updated\\_Spotlight\\_on\\_NZ\\_Sugar\\_Consumption\\_Print.pdf](https://www.srasanz.org/files/4914/9853/5808/Updated_Spotlight_on_NZ_Sugar_Consumption_Print.pdf) and <https://www.srasanz.org/sras/sugar-and-health/recommended-intake/> 7 September 2017.

World Health Organization (WHO), 2015. “Guideline: Sugars Intake for Adults and Children”. Retrieved from: [http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028_eng.pdf?ua=1) 5 September 2017.

