

Sweeteners

(sugar alternatives)

Sweeteners provide an intense sweet flavour. They have become increasingly popular as people look for different ways to satisfy their sweet tooth, without the associated energy (kilojoules or calories) of regular sugar.

Sweeteners can be divided into three categories:

- Artificial sweeteners
- Nutritive sweeteners
- Natural intense sweeteners

Artificial sweeteners

Artificial or non-nutritive sweeteners are often used as an alternative to sugar. These sweeteners are energy (kilojoule or calorie) free.

Artificial sweeteners are found in a wide range of food and drink products in the supermarket. Many are 'tabletop sweeteners' which can be used to add sweetness to tea, coffee, cereal and fruit in place of sugar. There are also a number of other products such as cordials, soft drinks, jellies, yoghurt, ice-cream, chewing gum, lollies, desserts and cakes which use these sweeteners. These products are often labelled as 'diet', 'low joule' or 'no sugar'.

The most commonly used artificial sweeteners in the Australian food supply are:

Name	Code number	Brand name
Acesulphame K	950	Hermesetas® Sunnett®
Alitame	956	Aclame®
Aspartame	951	Equal® Equal Spoonful® Hermesetas® Nutrasweet®
Cyclamate	952	Sucaryl®
Neotame	961	
Saccharin	954	Sugarella® Sugarine® Sweetex®
Sucralose	955	Splenda®

Nutritive sweeteners

Nutritive sweeteners are based on different types of carbohydrates. Products that contain these sweeteners may be labeled as ‘carbohydrate modified’. The sweeteners provide a sweet taste, have less energy (kilojoule or calorie) than sugar but they are not kilojoule/calorie free.

The most commonly found nutritive sweeteners in food and drinks are:

Name	Code number	Comments
Fructose	No code	<ul style="list-style-type: none"> • fruit sugar • same kilojoules as sugar but sweeter
Isomalt	953	<ul style="list-style-type: none"> • less kilojoules than sugar but half the sweetness • may have a laxative effect • can also be listed as ‘humectant’
Erythritol	968	
Lactitol	966	<ul style="list-style-type: none"> • these are all sugar alcohols
Mannitol	421	<ul style="list-style-type: none"> • same kilojoules as sugar, except mannitol
Maltitol	965	<ul style="list-style-type: none"> • may have a laxative effect and cause wind
Xylitol	967	<ul style="list-style-type: none"> and diarrhoea
Sorbitol	420	<ul style="list-style-type: none"> • can also be listed as ‘humectant’
Maltodextrin	No code	<ul style="list-style-type: none"> • same kilojoules as sugar • also listed as ‘hydrolysed corn syrup’ or ‘glucose syrup’
Polydextrose	1200	<ul style="list-style-type: none"> • provides minimal kilojoules • may have a laxative effect
Thaumatococin	957	<ul style="list-style-type: none"> • can also be listed as ‘flavour enhancer’

Food labels

All food labels must list any sweeteners which are in a product. Labelling is particularly important for people with the rare genetic disorder called Phenylketonuria (PKU). People with PKU are unable to break down phenylalanine, a product of an artificial sweetener Aspartame. As sweetened foods and drinks can contain aspartame, mandatory labelling is required to alert people with PKU that the product contains phenylalanine.

INGREDIENTS

WATER, MILK SOLIDS, SORBITOL, POLYDEXTROSE, CREAM, MALTITOL, COCOA (0.5%), HUMECTANT (1520), VEGETABLE ORIGIN EMULSIFIERS [477, 471 (SOY)], VEGETABLE GUMS (412, 440, 405), VEGETABLE FAT, THICKENER (1422), MINERAL SALTS (341, 339), FLAVOURS, SALT, COLOUR (160b),

Maltitol
(965)

Sorbitol
(420)

Polydextrose
(1200)

This example of a food label identifies the nutritive sweeteners, which have been added to a commercially available vanilla chocolate sundae.

Natural intense sweeteners

More recently 'natural' sweeteners have appeared on the market such as Stevia (Food additive code number 960) and Monk Fruit extract (no code number associated). Natural sweeteners are typically derived from plants. Stevia is between 200 - 300 times sweeter than regular sugar and contains no energy (kilojoules or calories). Monk fruit extract is between 250 and 400 times sweeter than regular sugar and also contains no energy. Stevia and monk fruit extract have a history of safe consumption and are all approved for use in Australia. Natural sweeteners are used in many food and drinks but are commonly used to sweeten flavoured waters and soft drinks.

Selecting sweeteners

For those with a particularly sweet tooth, sweeteners provide an alternative to sugar without the associated energy (kilojoules or calories).

There are lots of different ways sweeteners can be incorporated into our diet and selecting one particular sweetener over another will depend on what you are trying to achieve.

For those trying to resist the sweetness in a cup of tea or coffee, an artificial or 'tabletop' sweetener can be used instead. Or perhaps you are looking to use a sweetener in a recipe as a sugar substitute. A natural intense sweetener would be the pick as it is more heat stable than other sweeteners. And if you don't have any particular preference for sweeteners, you are bound to experience a huge variety when you next eat or drink products such as 'diet' soft drinks, 'lite' ice-cream or chewing gum, to name a few.

Sweeteners and health

There is some evidence that consuming foods and drinks made with sweeteners can help weight loss by reducing energy (kilojoule or calorie) intake. However fizzy drinks, both sugar sweetened and those using sweeteners, may still cause dental problems. Water is the best choice to drink.

Food and drinks that contain a mixture of sweeteners and sugars are lower in sugar, but they can still contribute to excess energy (kilojoule or calorie) intake. It is important to remember that the use of sweeteners does not give a green light to eat or drink a product in large amounts.

Safety of sweeteners

Food Standards Australia New Zealand (FSANZ) regularly reviews safety evidence and recommends a maximum level permitted in foods before approving sweeteners, and other additives, for use in Australia.

More information

For more information on sweeteners visit the Food Standards Australia New Zealand website: www.foodstandards.gov.au/consumer/additives/Pages/Sweeteners.aspx

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1 Miller PE, Perez V. Low-calorie sweeteners and body weight and composition: a meta-analysis of randomized controlled trials and prospective cohort studies. *The American journal of clinical nutrition*. 2014;100(3):765-77.