



Sugar

Carbohydrate

Sugar is a type of carbohydrate. Carbohydrates can be divided into:

- ☞ sugars,
- ☞ starches, and
- ☞ fibre.

Starches are needed to provide the body with energy. They are slowly digested by the body, and gradually release energy, therefore fuelling the body for long periods.

Food sources that contain starches also tend to contain micronutrients.

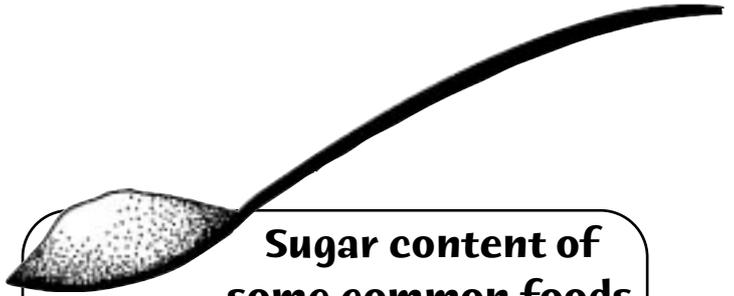
Sugars are quickly digested and cause a quick and short release of energy. Most food sources that contain sugars have no micronutrients.

Fibre is a type of starch that the body cannot digest; it exercises the gut (digestive system). It provides no calories but is essential for a healthy digestive system.

Sugar is widely used in all types of food processing to enhance the taste of foods. For example, sugar is added to tea/coffee, cakes, biscuits, drinks, desserts, and ice cream. It is added to some foods that you also might not expect, such as ketchup, savoury sauces, ready-made meals, and bread.

Sugar and health

As sugar is most often found in foods with little nutritional value in terms of vitamins or minerals, it is generally considered to be an unnecessary part of the diet. The addition of energy can be beneficial to some extent, but if too much energy is derived from high sugar foods, it is unlikely that



Sugar content of some common foods (in an average portion) (one teaspoon of sugar is 4 g)

- cola, sodas – 40 g
- one glass of KoolAid/soft drink – 20 g
- one chocolate bar – 15 g
- a handful of candies – 25 g
- bubble gum – 10 g
- ice cream – 10 g

the diet will contain all the nutrients needed. Most people have no problem with getting enough energy in their diet and so the addition of sugary foods can often result in too much energy being eaten, subsequently resulting in overweight and obesity.

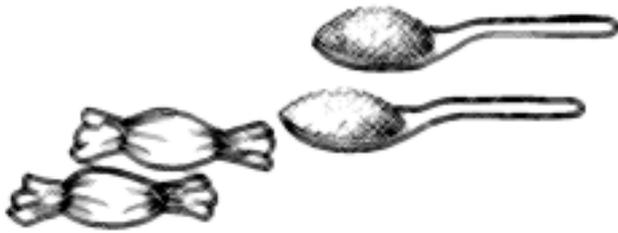
One of the other main problems with consuming too much sugar is its link to dental caries.

Tooth decay

Tooth decay, also called dental caries, is one of the most common infectious diseases.

The process of dental caries involves the following sequence:

- ☞ Plaque is a coating of bacteria that covers the teeth. These bacteria produce lactic acid when they 'eat'. The plaque becomes acidic.
- ☞ Acid attacks the tooth. Firstly it attacks the hard outer layer (enamel), and then the inner part (dentin).



⚡ The tooth is now damaged – this is dental caries/decay.

The effect of food and drink

The development of caries is affected by factors within food:

- ⚡ **Total amount and types of carbohydrates:** Sugar is a good food source for the plaque bacteria.
- ⚡ **Acidity:** Foods that are acidic such as juices, many soft drinks, and vinegary foods also attack the teeth.
- ⚡ **Retentiveness of the food** (how it sticks to the teeth): Sticky and chewy foods (e.g. toffee) can stick to the teeth, and so increase the time available for the bacteria to 'eat'.
- ⚡ **Frequency of eating/drinking:** Each time a food/drink is taken, bacteria start to produce acid. Later, the acid level in the mouth will return to normal. If foods/drinks are eaten very frequently, the mouth acidity will not return to normal. This increases the rate of dental decay.
- ⚡ **Combination of foods:** Certain foods are less cariogenic (likely to cause caries) than others, and some are protective.

Protection from decay

Fortunately there are a number of things that help to protect teeth from attack.

- ⚡ **Saliva:** contains a number of minerals (including calcium and fluoride) and other substances that help to protect teeth by lowering mouth acidity and attacking the bacteria in plaque. Chewing causes more saliva to be produced.
- ⚡ **Foods:** Cheese lowers mouth acidity, and its minerals can also help to protect teeth. Other body-building foods such as meats, nuts and beans also lower mouth acidity.

⚡ **Fluoride:** Fluoride works by protecting the surface of the teeth from decay. It is not only helpful during childhood but throughout life. It occurs naturally in certain foods such as shellfish and some local root crops. For most effect on the teeth however, the regular use of a toothpaste with fluoride is recommended.



Mouth hygiene

One of the most important ways to protect teeth is to brush them regularly using a fluoride toothpaste. The traditional methods of cleaning teeth using local sticks or twigs are effective alternatives to brushing. Ideally teeth should be brushed after every meal and snack/drink. However this is difficult to do. Instead:



- ⚡ Brush after breakfast and before going to bed.
- ⚡ Rinse your mouth with water, or chew a sugar-free gum after other meals and snacks.

Bottle-fed babies

Babies fed using bottles have very high rates of early dental decay. Teeth are already decayed before they have fully developed. This is linked to the use of formula milks (which are more likely to cause dental decay than breast milk), baby bottles and giving drinks such as juice and sugar water from the bottle. Many babies are left with the bottles in their mouth for long periods of time (to keep them quiet).

A baby should never be given a bottle; from birth they can take drinks from a cup. A baby under six months should be given nothing but breast milk (or formula). After six months, you can also give a baby clean water, and after 12 months diluted fruit juice – always from a cup. (The factsheet on infant feeding contains more information.)

Key tips to a great smile

- ☞ Brush teeth regularly with a fluoride tooth-paste.
- ☞ Avoid eating sugary foods and drinks regularly.
- ☞ Avoid frequent snacking (and drinking) of foods high in sugar or starches.
- ☞ Rinse mouth with water, clean your teeth or chew sugar-free gum after meals.
- ☞ Visit your dentist regularly for a check-up.

Ways of reducing sugar

- ☞ Don't add sugar to tea, coffee or other drinks. If you use sugar now – try using a little less. Cut down gradually – it will be easier.
- ☞ Eat less of the sugary foods mentioned – choose healthier snacks such as fruits.
- ☞ Avoid drinking soda/fizzy drinks and soft drinks – drink clean water, fresh coconut juice, fruit juice (unsweetened) or milk instead. Occasionally using sugar-free diet versions of certain drinks can add more variety.

Artificial sweeteners

These are also called non-nutritive sweeteners – as they contain few nutrients. They include products such as aspartame and saccharin.

Many food products actually contain a mixture of sweeteners, often sugar and a non-nutritive one. There is also a tendency to combine non-nutritive sweeteners, as this tends to increase their sweetness.

Artificial sweeteners are used to reduce or remove the need for sugar in a product, without losing the sweet taste. You can find them in products labeled as 'diet' or 'sugar-free' e.g. certain fizzy drinks, desserts and ice creams. Many people use them in place of sugar in tea or coffee. While they can help to reduce your sugar intake, their continued use can also encourage a 'sweet tooth'.

Sugar-free gums: In some countries, sugar-free gums are widely available. Research has shown that chewing sugar-free gum for 20 minutes after a meal, reduces the risk of dental decay, as it stimulates saliva production. This can be an alternative if you are not able to clean your teeth or rinse your mouth after eating. (Note: sugary chewing gums will not have this positive effect, as they contain sugar and so increase risk of tooth decay).

