

THE FACTS ON SUGAR



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Health Equalities Group 2017

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FOREWORD

Sugar is the hot topic in the nutrition world. It is now recommended that our intake of sugars should be less than 5% of our total energy intake [1], yet millions in the UK and around the world regularly exceed this.

What is most concerning is how far sugar has invaded the modern diet. Unbeknownst to the public bread, breakfast and granola bars, table sauces and condiments, low-fat products, smoothies and of course soft drinks are often full of sugar.

So how do we combat this stealthy substance that is widening our waistlines and harming our health?

To start with, we can [#GiveUpLovingPop](#).

Drinking sugary drinks
can increase the risk of

OBESITY
TOOTH DECAY
TYPE 2 DIABETES
HEART DISEASE
CANCER

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Obesity in the UK

Across the UK, obesity levels are rising. Nearly a quarter (22.5%) of 4-5 year olds and just over a third (33.5%) of children aged 10-11 year olds carry excess weight.

This trend continues into adulthood with 63.8% of adults identified as being overweight or obese. Those living in the most deprived areas are at greater risk of being overweight or obese [2].

Health problems associated with being overweight or obese cost the NHS more than £5 billion every year [3]. Sugar is a major contributor to the obesity epidemic with Britons on average eating 700g of sugar a week [4] – that's 140 teaspoons per person and a whopping 2240 calories.

Teenagers consume the most sugar; 74.2g sugar per day (contributing to almost double the amount recommended for

energy), closely followed by children aged 4-10 years, (consuming 60.8g sugar per day) and adults aged 19-64 years, 58.8g sugar per day.

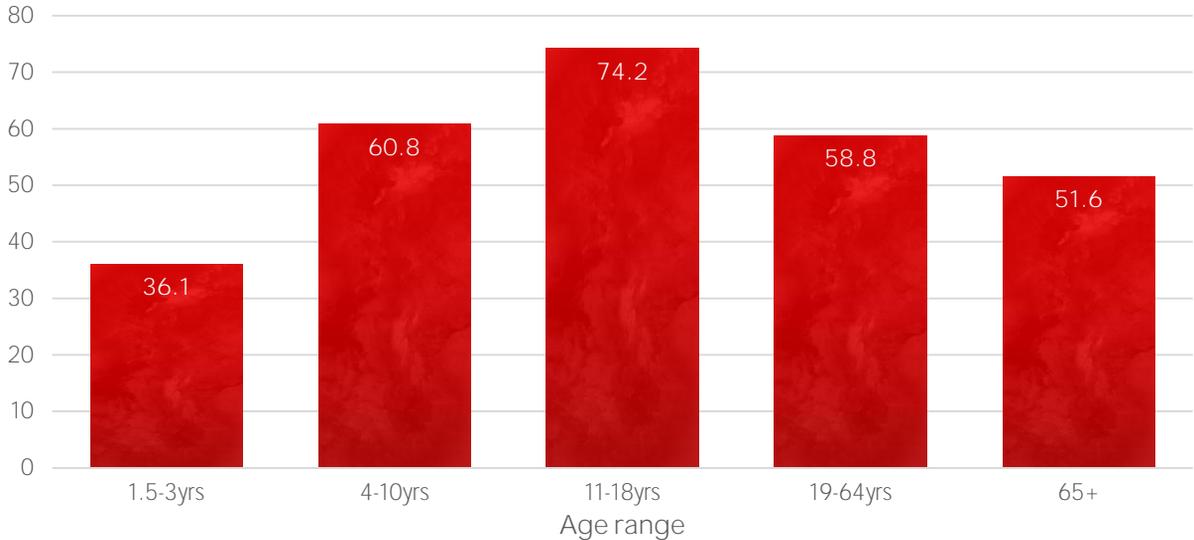
Sugar Guidelines

Sugar in numerous forms has been creeping into our bread, our table sauces a huge variety of soft drinks by the teaspoon (see appendix 1).

Both the WHO and the Scientific Advisory Committee on Nutrition (SACN) have proposed new recommendations that sugars added to food by the manufacturer, or sugars which are naturally present in syrups and unsweetened fruit juices should account for no more than 5% of our energy intake, half that of current recommendations [5].

SACN have proposed that the UK adopts the definition of free sugars' in place of the

Daily added sugar intake (g)



current term 'NMES' (non-milk extrinsic sugars). They define 'free sugars' as:

“all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and unsweetened fruit juices.”

EU labelling regulations have recently replaces Guideline Daily Amount (GDA) with Reference Intakes (RI) however the principles behind how these values are

determined remain the same.

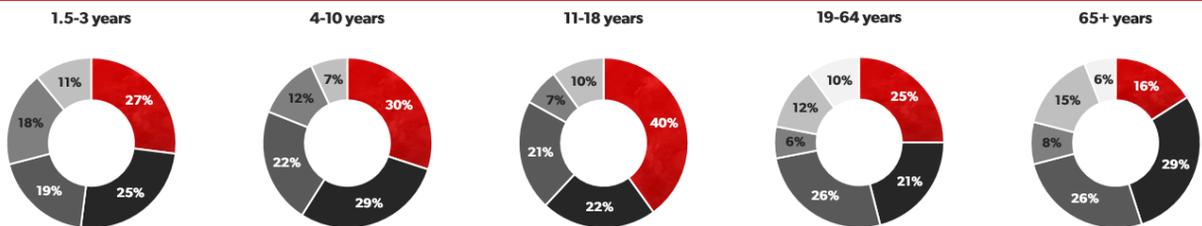
Lowering the consumption of 'free sugars' to around 5% of daily dietary energy intake would result in a limit of 30g – approximately 7 teaspoons or cubes of sugar for an adult (see appendix 2 for sugar swapping advice) [6].

Sugar, Health and Metabolism

There are three primary macro-nutrients: protein, fat and carbohydrate that can be broken down by the body to produce energy (kcal or calories are a measurement of energy).

WHERE DIFFERENT AGE GROUPS GET THEIR ADDED SUGAR FROM

Source: National Diet & Nutrition Survey, rolling programme 2008-2012



Soft Drinks

Cereals, cakes, biscuits

Sugar, sweets, jams

Milk products

Other

Alcohol

Although alcohol can provide energy, it is not essential and is therefore not considered a macronutrient.

1g carbohydrate	4kcal
1g proteins	4kcal
1g fat	9kcal
1g alcohol	7kcal

Carbohydrates are classified into two basic groups, simple and complex.

Simple carbohydrates are either monosaccharides (one sugar molecule) such as glucose and fructose; or disaccharides (two sugar molecules) such as sucrose (regular table sugar – composed of equal parts glucose and fructose) and lactose (sugars found in milk which are made up of galactose and glucose).

Complex carbohydrates are made up of sugar molecules that are strung together in long, complex chains. Complex carbohydrates are found in foods such as potatoes, peas, beans, whole grains, vegetables, pasta, bread and rice in the form of starch and fibre and provide vitamins and minerals that are important to the health of an individual.

Many processed foods are surprisingly high in 'added' sugar which contain these simple carbohydrates.

It is these 'free' or 'added' sugars which are of most concern.

It is believed that the liver handles high intakes of sugar in a way that is damaging to our health, especially if we are overweight or not physically active. This could lead to an increased risk of diabetes, heart disease and other health problems.

Whilst it is necessary to make sure you aren't exceeding the total recommended daily

amount of sugar, naturally occurring sugars probably aren't going to be a problem unless on a restricted diet, e.g. a low carbohydrate diet to control diabetes.

Sugar and Weight Gain

Different foods affect the body in different ways; eating too much sugar can lead to an excess intake of calories which can lead to weight gain as sugar is easily converted into fat in the body.

Glucose is vital to life and is an integral part of our metabolism. Every cell in the body can use glucose and it is essential fuel for the brain. Our bodies break down simple and complex carbohydrates and other macronutrients to produce it and we have a constant reservoir of it in our bloodstream.

However, excess glucose consumption leads to weight gain via two routes:

1. When the liver's sugar storage capacity is exceeded the excess glucose is converted by the liver into fatty acids and returned to the bloodstream – this is then distributed through the body and stored as fat (adipose cells) which over time can lead to weight gain.
2. When the body produces excess insulin the body's fat-burning process is shut down so that the glucose that has just been ingested can be immediately used for energy. Then, insulin transports all that glucose to the muscles. However, as soon as the muscles energy stores are full, the excess sugars are converted to fat. This process also leads to an increase in appetite.

Fructose, however, is different. Although produced during the metabolism of carbohydrate there is no biological need for dietary fructose. Very few cells in the body can make use of it except those in the liver.

There is gets turned into fat, which is then secreted into the blood.

Unlike glucose, consuming fructose does not trigger the release of insulin. Some studies have also shown when it is eaten as part of a meal, fructose does not suppress ghrelin (a major appetite stimulating hormone) leading to continues feelings of hunger which is believed to induce weight gain through overconsumptions [7].

Sugar in Alcohol

Alcohol generally has a low sugar content as the sugar in the fruit juice / grain / vegetable turns to alcohol during the fermentation process. Whatever sugars are left following the fermentation process contribute tot the final sugar content, which will vary from on drink to another.

For example, a dry white wine has little residual sugar, whereas a sweet wine can have quite a lot. Spirits such as vodka, gin, rum and whiskey have nothing left but the alcohol, so no (or very little) sugar. However, the mixers often added to spirits are very sugary. Liqueurs also have sugar added.

Alcohol is high in calories at 7kcal per gram compared to 4kcal for protein or carbohydrate. The body is unable to store alcohol in its existing form so metabolises it to produce energy before carbohydrate or fat; this can cause fluctuations in blood sugar which can also increase appetite.

Sugars and Dental Health

Tooth decay affects 28% of five-year-old children [8] and 31% of adults in England [9], consumption of sugary foods and drinks is the chief cause. Tooth decay is the major cause of pain and suffering, and the main reason for administrating anaesthesia among children. The NHS spends around £3.4 billion on dental treatment a year [10].

Each time you eat sugar, bacteria in the mouth produces acid which attacks the enamel on the teeth, causing sensitivity and tooth decay.

By limiting sugary foods and drinks to mealtimes you can reduce the number of times teeth are attacked by this acid.

Other ways to reduce the impact of sugary foods and drinks on tooth decay include:

- Brushing regularly
- Regular dental check-ups
- Limiting unhealthy snacks
- Watching out for 'hidden' sugar content in everyday items.

Pure fruit juices and smoothies can be a healthy choice, but the natural sugars these contain can still damage teeth, so these beverages should be consumed with a meal and only one 150ml glass a day.

Water, milk and unsweetened tea and coffee are the best drinks to consume in-between meals to reduce dental erosion and decay.

Sweeteners

Sweeteners are a sugar substitute that provide a sweet taste not unlike that of sugar. Some are naturally occurring but those that are manufactured are generally referred to artificial sweeteners.

Artificial sweeteners tend to have little or no calorific value and are therefore not directly associated with weight gain.

However, there is some emerging evidence to suggest that artificial sweeteners may not aid weight loss as they can maintain and even encourage our preference for sweet-tasting food and drink.

Please refer the [gulp](#) resource on artificial sweeteners for further information.

Understanding Labelling

When measured in teaspoons (in tea or coffee for example) or grams (in a homemade cake) it is easy to work out and visualise the amount of sugar added to food and drink. However, when you are out shopping it can be much more difficult to understand just how much sugar a product contains. Examples of food and drink high in sugar include many biscuits, cakes, puddings, desserts, sweets, chocolate, flavoured yoghurts and of course – soft drinks.

But many processed products, even those that you'd never suspect, contain sugar. For example, ketchup and other condiments, tinned soups, breakfast cereals, healthy-looking granola bars and even bread.

Spotting the sugar can be tricky but there are several ways to identify the sugar content of processed foods and drinks. One way is to identify the different names of sugar – some of which are demonstrated in the

wordcloud on the following page.

Another option is to look at the nutrition information panel on the food packaging and refer to the line which says 'carbohydrate of which sugars'. This however includes both natural and added sugars.

Front of pack nutritional information labels often give the amounts of sugar per 100g of a product and provides a colour coding to indicate if the level of the sugar in a food or drink item is low (green), medium (amber) or high (red).

Many drinks manufacturers now utilise this traffic light system to demonstrate the contents of their products. Drinks that are low in sugar have 2.5g or less per 100ml; medium sugar drinks have between 2.5g and 11.25g of sugar per 100ml; and high sugar drinks contain more than 11.25g of sugar per 100ml or greater than 13.5g per portion.



Sugar Detective: the labels above can be used to identify the sugar content of drinks.



The 56(+) Names of Sugar

There are several ways to identify the sugar content of processed foods and drinks. Unfortunately, few food manufacturers refer to 'sugar' explicitly on the label.

They often use terms that are harder to decode; anything ending in 'ose' such as glucose, sucrose, fructose, lactose and maltose will be a form of sugar, as are honey, agave, molasses and syrups.

If the food item does not specify the amount of sugar in grams, the higher up the ingredient list the item is, the more sugar the product contains.

Soft Drinks Industry Levy

The Soft Drinks Industry Levy (SDIL) nicknamed the "Sugar Tax" by the media and online was announced at the 2016 budget by the then Chancellor of the Exchequer George Osborne MP.

The levy will be introduced in April 2018 and is intended to target the producers and

importers of sugary soft drinks to encourage them to remove added sugar (reformulation), promote low sugar and diet drinks options, and to reduce portion sizes for high sugar drinks.

The SDIL will make soft drinks companies pay a charge for adding sugar to their drinks and total sugar content of 5g or more per 100ml. A higher charge for drinks that contain 8g or more per 100ml will also be enforced.

This means that pure fruit juices and drinks with a high milk content that contain nutrients that are vital for a healthy diet won't be taxed because they do not contain added sugar.

The intention is to invest the revenue generated from the SDIL in giving school-aged children a brighter and healthier future, including programmes to encourage physical activity and balanced diets.



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APPENDIX 1

SUGAR CONTENT OF FOOD AND DRINK

BREAD PRODUCTS	Sugar (g) per 100g	Sugar (g) per (typical) serving
Kingsmill Gold Wholemeal Bread	3.5	1.4 (per slice)
Hovis Thick White bread	3.5	1.7 (per slice)
Wholemeal Pitta Bread (Tesco own)	2.5	1.6 (per slice)
Tesco butter Brioche rolls	14.0	4.9 (per roll)
White Bagel (Tesco own)	5.4	4.6
CEREALS	Sugar (g) per 100g	Sugar (g) per (typical) 40 serving
Kellogg's Fruit and Fibre *	24	9.6
Kellogg's All Bran	18	7.2
Kellogg's Special K	17	6.8
M&S Count On Us Muesli *	36.1	15g
READY MEALS	Sugar (g) per 100g	Sugar (g) per (typical) serving
Sainsbury's Sweet & Sour Chicken with Rice	11.8	50.7 (per 450g pack)
Tesco Healthy Living Duck & Hoisin Noodles	7.3	23.4 (per 350g pack)
Weight Watchers Heinz Signature Recipes Sweet Chilli Chicken	7	22.5 (per 320g pack)
Asda Reduced Calorie Sweet Chilli Chicken Noodles	5.6	19.6 (per 350g pack)
Weight Watchers Sweet and Sour Chicken	5	18.9 (per 320g pack)
Tesco Healthy Living Sweet Chilli Chicken Noodle	5.2	16.2 (per 350g pack)
PRE-PACKAGED SANDWICHES	Sugar (g) per 100g	Sugar (g) per (typical) serving
Chicken Salad	2.2	5.1
Tuna and sweetcorn	2.9	4.9
BLT	2.5	4.6
Sweet Chilli Wrap	9.2	16.1
Southern fried Chicken Pasta Salad	2.9	8.8
Tesco Fish Sushi (large)	10.4	22.6

SAUCES	Sugar (g) per 100g	Sugar (g) per (typical) serving
Heinz Tomato Ketchup	23.6	2.6 (10g)
Heinz Salad Cream	17.5	1.7 (10g)
Hellmann's Mayonnaise	1.3	<0.5
SAVOURY SNACKS	Sugar (g) per 100g	Sugar (g) per (typical) serving
Walkers Salt and Vinegar Crisps	1.0	0.3
Walkers Salt and Vinegar baked crisps	6.3	1.6
Sweet Popcorn	31.3	6.3 (20g serving)
BREAKFAST ON THE GO	Sugar (g) per 100g	Sugar (g) per (typical) serving
Muller Light (Peach and Pineapple)	7.1	12.4 (per 175g)
Belvita Biscuits	22	11 (per 50g)
Nutrigrain Bar	33.4	12 (per 37g)
Weetabix on the go (drink) – chocolate	8.8	22 (per 250ml)
SWEET SNACKS	Sugar (g) per 100g	Sugar (g) per (typical) serving
Cadbury's Dairy Milk	56	25 (per 45g)
McVities Chocolate Digestives	29.5	4.9 (per biscuit)
Eat Natural Bar	47.7	23.8 (per 50g)
Tracker Cereal Bar	30.8	11.4 (37g bar)
Original glazed Krispy Kreme Donut	20	10 (49g doughnut)
DRINKS	Sugar (g) per 100g	Sugar (g) per (typical) serving
Innocent Smoothie Pomegranate Blueberry and Acai Drink	13.9	35g
Can of Coca-Cola	11	36.3
Carton of Apple Juice	11.1	22.2 (200ml)
Mars flavoured milk	12.8	25.7 (200ml)

APPENDIX 2

SUGAR SWAPS

With a bit of careful thought and planning, it is much easier than you may think to choose the healthier options and find those sugar swaps!

Original	Better	Even Better	Best
Cola	Reduced sugar cola	Zero sugar cola	Water
Large serving of fruit juice	Small serving (150ml) of fruit juice	Small serving (150ml) of fruit juice mixed with water	Water and a piece of fruit
Piece of cake	Serving of malt loaf	Wholegrain toast with a small amount of jam	Piece of fruit
Honey nut cereal flakes	Cereal flakes	Porridge with a small amount of honey	Porridge with fresh fruit
Chocolate muffin	Reduced sugar muffin	Fruit teacake	Wholemeal toast with banana
Large chocolate bar	Small chocolate bar	Low sugar cereal bar	Plain yoghurt with fruit
Sugary sweets	Reduced sugar sweets	Dried fruit	Fresh fruit

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