



## Heart disease and dietary sugars

### Key Messages:

- **Cardiovascular disease (CVD) is the leading cause of death worldwide**, with risk influenced by factors such as blood pressure, cholesterol, obesity, smoking, inactivity, age, genetics, and family history.
- **Current scientific evidence does not support a direct link between sugars consumption and CVD.**
- **The impact of sugars on cardiovascular health appears to be related to excess calorie consumption**, rather than sugars directly causing heart disease.
- **Excess calorie intake from any food or drink can contribute to weight gain**, and it is excess body weight and obesity that are established risk factors for CVD.
- **High intakes of sugar-sweetened beverages have been associated with greater CVD risk**, although related lifestyle factors such as poor diet and low physical activity may also play a role.

*This content has been reviewed by Dr Wendy Hall, King's College London, UK.*

### Cardiovascular disease

Cardiovascular disease (CVD) is a group of disorders affecting the heart (also known as heart disease) and blood vessels. It's usually associated with a build-up of fatty deposits inside the arteries and an increased risk of blood clots. It can lead to damage to the arteries (large blood vessels) and reduced blood supply in organs such as the brain, heart, kidneys and eyes. CVD is the leading cause of death worldwide, causing an estimated 17 million deaths (1). There are several factors which can increase a person's chance of developing CVD. Some are unchangeable (genetics, age, family history), whilst others have the potential to be changed (high blood pressure, high blood cholesterol, overweight/obesity, smoking, and physical activity levels)(2).

### Dietary sugars and risk of CVD

Published scientific reviews of the evidence by researchers at the University of Toronto and University of Otago do not show a direct link between sugars consumption and risk of CVD (5,6). Excess calories from all foods and beverages, including sugars, can lead to weight gain, increasing the risk of obesity and other chronic diseases, such as CVD. Research suggests the effect of sugars on CVD risk is dependent on the total amount of excess calories in the diet (3,4). Some macronutrients [calorie-containing nutrients (e.g., fats and carbohydrates)] may make foods more palatable, which could promote the consumption of excess calories.

Which foods and drinks the sugars come from in our diet may also be important. Research shows there doesn't appear to be an unfavourable effect of sugars consumed in certain



nutrient-dense foods, including yogurt, fruit, 100% fruit juice, and whole grain cereals, if consumed as part of an overall healthy diet (5,6). A link between high consumption of sugars-sweetened beverages (SSBs) and an increased risk of developing CVD has been found in some observational studies. However, there may be some other lifestyle factors that are also associated with high SSBs intakes and are not fully accounted for when assessing the links between dietary patterns and CVD risk. These could include low physical activity levels and other dietary factors such as high salt and saturated fat consumption, which are more common in individuals who consume a lot of SSBs and are known risk factors for CVD. As such, it is unclear whether high SSBs intakes, or other related factors, account for the increased risk of CVD (7-9).

The current evidence does not show a direct link between sugars consumption and risk of CVD (5,6). Excess calories from all foods and beverages, including sugars, can lead to weight gain, increasing the risk of obesity and other chronic diseases, such as CVD. The effect of sugars on CVD risk is dependent on the total amount of excess calories in the diet (3,4).

### **CVD prevention**

Removing sugars entirely from the diet is not a requirement for preventing CVD. Sugars can be consumed as part of a healthy, balanced, calorie-controlled diet (11). A summary of food-based dietary guidelines across the globe, published by the Food and Agriculture Organization of the United Nations, shows foods high in sugars can be included in the diet, but "many guidelines mention the need to moderate consumption" (12). This is often recommended to help promote energy balance (11,12). Adopting a healthy diet and lifestyle (e.g., engaging in regular physical activity) and maintaining a healthy body weight can reduce CVD risk factors. Recommendations for CVD prevention often emphasise the importance of a healthy dietary pattern, rather than focusing on individual nutrients like sugars. For instance, the traditional Mediterranean diet, which is rich in fruits and vegetables, whole grains, and oily fish and low in red meat, processed meat, and dairy, has been associated with a 10% reduction in CVD risk (10,13).

### **Healthy dietary patterns**

The overall body of evidence suggests removing sugars entirely from the diet is not a requirement for preventing CVD. Sugars can be consumed as part of a healthy, balanced, calorie-controlled diet (11).

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