

Want to be a... Sugar Detective?!

Do you know how to **solve the mystery** between
added sugars & natural sugars?

Natural Sugars

Found naturally in intact fruits, vegetables, berries, dairy products, juiced or pureed fruits/vegetables.



Added Sugars

Sugars added to foods during processing or preparation.

But how do you know what is added sugar?

Common examples are brown sugar, corn syrup, dextrose, fructose, glucose, sucrose, high-fructose corn syrup, honey, invert sugar, lactose, maltose, malt syrup, molasses, and raw sugar.

Investigate the
nutritional label on the
back of a food/beverage
product



Locate Sugar

Look for “Added Sugars”

Nutrition Facts	
8 servings per container	
Serving size 8 fl oz (240mL)	
Amount per serving	
Calories	110
% Daily Value*	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 5mg	0%
Total Carbohydrate 27g	10%
Dietary Fiber 0g	0%
Total Sugars 25g	
Includes 23g Added Sugars	46%
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 40mg	0%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

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Why is this important to know for adolescents like myself?

Easy access to high-calorie fast foods, increased consumption of sugary beverages, and sedentary lifestyles, are linked with rising obesity. Added sugars are the villain hidden in those high calorie foods and sugary beverages! They are sneaky and can easily go unnoticed unless you know what to look for!

National surveys have shown that added sugar intake, defined as sugars eaten separately or as ingredients in processed or prepared foods, constitutes 20% of total energy intake for adolescents in the United States.

Studies have linked high intake of added sugar-sweetened beverages a major source of dietary sugar correlated with poor dental health, weight gain, metabolic syndrome, type 2 diabetes mellitus and heart disease.

1. Davis JN, Ventura EE, Shaibi GQ, et al. Reduction in added sugar intake and improvement in insulin secretion in overweight latina adolescents. *Metab Syndr Relat Disord.* 2007;5(2):183-193. doi:10.1089/met.2006.0038

This study assessed the effects of modifying carbohydrate intake by specifically decreasing added sugar and increasing fiber on insulin secretion.¹ The objective of this study was to examine whether changes in dietary intake, specifically reductions in added sugar and/or increases in fiber, following a 12-week, modified carbohydrate dietary intervention, were associated with changes in insulin secretion and other metabolic risk factors for type 2 diabetes.¹ There was a trend for unadjusted change in reported added sugar intake with change in insulin secretion.¹ This relationship became significant after controlling for age, baseline insulin secretion, added sugar and adiposity, and change in adiposity.¹ No other changes in dietary variables were related to changes in insulin secretion or other metabolic risk factors for type 2 diabetes.¹ Participants with greater reductions in added sugar intake showed significantly greater improvements in insulin secretion following a modified carbohydrate nutrition intervention.¹ These findings suggest that interventions focused on decreasing added sugar intake have the potential to reduce type 2 diabetes risk in overweight youth and adolescents.¹

2. Mela DJ, Woolner EM. Perspective: Total, Added, or Free? What Kind of Sugars Should We Be Talking About?. *Adv Nutr.* 2018;9(2):63-69. doi:10.1093/advances/nmx020

There is consistent public guidance to limit sugars intakes.² Public discussion focuses on “added” sugars, and globally most food labeling states “total” sugars.² Definitions of added and free sugars differ mainly in their respective exclusion or inclusion of sugars in juiced or pureed fruit and vegetables.² There has been little evidence for consumer communication and nutrition labeling.² Evidence of discriminating relations of total compared with added or free sugars with weight gain or energy intake, type 2 diabetes, and dental caries was identified from recent systematic reviews and meta-analyses.² Consideration of these health outcomes suggests that the emphasis for intake monitoring, public health guidance, and consumer communication should be on free sugars.² However, at present, the adoption of free sugars for these purposes would also carry challenges related to implementation, including consumer understanding, consensus on specifications, and current labeling regulations.²

3. Kaartinen NE, Similä ME, Kanerva N, Valsta LM, Harald K, Männistö S. Naturally occurring and added sugar in relation to macronutrient intake and food consumption: results from a population-based study in adults. *J Nutr Sci.* 2017;6:e7. Published 2017 Mar 8. doi:10.1017/jns.2017.3

Associations between sugar intake and the remaining diet are poorly described in modern food environments.³ This study aimed at exploring associations of high naturally occurring and added sugar intakes with sociodemographic characteristics, intake of macronutrients, fiber and selected food groups.³ An approach was used to estimate sucrose and fructose intakes from natural sources and all other added sugars.³ Young age was found to be a determinant of higher added sugar and lower naturally occurring sugar intakes.³ High added sugar intake was associated with low fiber intake accompanied with lower fruit and vegetable consumption and higher wheat

consumption.³ Opposite results were found for naturally occurring sugar.³ Therefore, the associations of sugar types with dietary carbohydrate and fat quality seem opposing.³ Proper adjustments with dietary variables are needed when studying independent relationships between sugar and health.³

4. Kansra AR, Lakkunarajah S, Jay MS. Childhood and Adolescent Obesity: A Review. *Front Pediatr.* 2021;8:581461. Published 2021 Jan 12. doi:10.3389/fped.2020.581461

The most common cause of obesity throughout childhood and adolescence is an inequity in energy balance by excess caloric intake without appropriate caloric expenditure.⁴ The increasing prevalence of childhood and adolescent obesity is associated with a rise in comorbidities such as Type 2 Diabetes Mellitus, Hypertension, Non-alcoholic Fatty Liver disease, Obstructive Sleep Apnea, and Dyslipidemia.⁴ Due to psychosocial issues that may accompany adolescence regarding body habitus, this approach can have negative results. Teens can develop unhealthy eating habits that result in Bulimia Nervosa, Binge- Eating Disorder, or Night eating syndrome.⁴ To date, lifestyle interventions have shown only modest effects on weight loss. Nearly 6% of adolescents in the United States are severely obese and bariatric surgery as a treatment consideration will be discussed.⁴ In summary, this paper will overview the pathophysiology, clinical, and psychological implications, and treatment options available for obese pediatric and adolescent patients.⁴