

What happens when you go without sugar for 10 days?

Lauren Saxena, RD, LD

It is no surprise that obesity is a serious problem among children in the United States. In the past 30 years, obesity has doubled among 6-11 year old children and quadrupled among 12-19 year old

**Definitions of overweight and obesity in children:*

- **Overweight:** BMI-for-age greater than or equal to 85th percentile
- **Obese:** BMI-for-age greater than or equal to 95th percentile (CDC, 2015)

adolescents* (CDC, 2015). Even more troubling, weight-related diseases typically only seen in adults are starting to appear in children as well. Up to 70% of obese children have one or more early signs of heart disease, such as high cholesterol and high blood pressure (CDC, 2015). Serious chronic illnesses such as non-alcoholic fatty liver disease and type 2 diabetes are also beginning to appear at a young age (Lustig, 2016).

According to the most recent Dietary Guidelines for Americans, added sugar, or sugar that does not occur naturally in foods, makes up about 16% of total calorie intake among children and adolescents. That is more than 1.5 times the recommended added sugar intake of 10% or less of total calories** (HHS and USDA, 2015). When it comes to maintaining a healthy weight, added sugar is particularly problematic because sugar adds calories to the diet without adding vital nutrients. In fact, nearly half of added sugars in the American diet come from beverages such as soft drinks, fruit drinks, sweetened coffee and tea, energy drinks, alcoholic beverages, and flavored waters (HHS and USDA, 2015).

There is also concern that fructose in added sugar contributes to metabolic diseases independent of calories and weight gain due to the way it is metabolized in the body. A recent study aimed to shed light on the relationship between sugar intake and chronic disease in children. Researchers recruited 43 children ages 8 to 18 years with habitual high sugar intake and signs of metabolic disease. For 10 days, sugar in their diets was replaced with complex carbohydrates such as those found in 100% whole wheat bread, cereals, pastas, fruits and vegetables, while keeping calorie intake from carbohydrates the same (Lustig, 2016).

***Less than 10% of total calories from added sugar:*

- 2-3 year olds: less than 30 grams per day
- 4-8 year olds: less than 40 grams per day
- 9-13 year olds and 14-18 year old females: less than 55 grams per day
- 14-18 year old males: less than 65 grams per day

These recommendations may vary based on your child's height, weight, and activity level (HHS and USDA, 2015).

During the 10 day study, added sugar intake was decreased from 28% of total calories to about 10% of total calories. Fructose, a component of sugar thought to contribute to metabolic disease, was decreased from 12% to 4% of total calories. At the end of 10 days, fasting blood sugar and fasting insulin, which are indicators of diabetes or pre-diabetes, were both significantly lower. Contributors to heart disease and fatty liver such as diastolic blood pressure, fasting triglycerides, and LDL cholesterol were also significantly lower than before starting the low sugar diet (Lustig, 2016).

Although every effort was made to keep the children's weight steady, they lost an average of about 2 pounds during the 10 days, which could account for the improved health measurements. However, the positive results were present even in the children whose weight stayed the same (Lustig, 2016). Overall,

this study provides promising evidence that reducing sugar intake can improve the current and future health of obese children, even without significant weight loss.

The take home message: reducing added sugar in your child's diet is an easy way to improve his or her health. If you're looking to upgrade your child's eating habits, look for common sources of added sugar. (Tip: the most common culprits are soda, sports drinks, fruit drinks, cakes, pies, cookies, pastries, ice cream, jam/jelly, syrup, and candy) Replace those foods with nutritious snacks and drinks such as fruits, vegetables, whole grains, water, low-fat milk, and modest amounts of 100% fruit juice (HHS and USDA, 2015). Someday they will thank you.

References:

CDC. (2015, August 27). Childhood Obesity Facts. Retrieved from Centers for Disease Control and Prevention: <http://www.cdc.gov/healthyschools/obesity/facts.htm>

CDC. (2015, June 19). Defining Childhood Obesity. Retrieved from Centers for Disease Control and Prevention: <https://www.cdc.gov/obesity/childhood/defining.html>

HHS and USDA. (2015, December). 2015–2020 Dietary Guidelines for Americans, 8th Edition. Retrieved from <http://health.gov/dietaryguidelines/2015/guidelines/>

*Lustig, R. H. (2016). Isocaloric fructose restriction and metabolic improvement in children with obesity and metabolic syndrome. *Obesity*, 453-460.*