

Health Education Grade 7 or 8

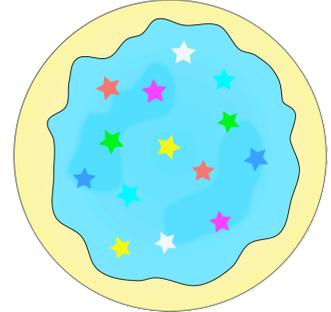
Standard: Grades 7 & 8 Nutrition and Physical Activity

1.5 N Differentiate between diets that are health-promoting and diets linked to disease.

1.6 N Analyze the caloric and nutritional value of foods and beverages.

Lesson Objective(s):

- State the differences between Type I and Type II Diabetes
- List the names of “added sugars” found on a food label.
- Determine the grams of sugar he or she consumes in a typical day.
- Identify “food swaps” to reduce consumption of hidden sugar.



Required Materials and Equipment:

- Student access to the internet
- One copy of the student hidden sugars/homework chart for each student.

Gaining Attention

Engage students in a discussion: Do you know that, according to the American Center for Disease Control and Prevention, by 2050 as many as 1 in 3 Americans may have a very serious health condition that can cause heart disease and stroke, high blood pressure, blindness, kidney disease, neuropathy (nerve damage), limb damage requiring amputation, or death? What disease do you think can cause all these things? (Take guesses.)*

Given such serious health consequences, don't you want to know if you are at risk for this disease, and what you can do to reduce your risk? Reveal that the disease is *Type II Diabetes*. Type II Diabetes is one of the fastest going health risks in the U.S. In this lesson, students learn that high levels of added sugar can increase their risk of developing Type II Diabetes, that many of their favorite foods have a high added sugar content, and how to swap out high sugar foods for lower sugar, healthier ones.

Presentation of Content

I. Type I vs. Type II Diabetes

Insulin is a hormone. It is released by the *pancreas*, which is an organ located behind the stomach. When you eat, the pancreas releases insulin to take sugar (*glucose*) out of the blood stream. If insulin production is impaired, or if the body does not use insulin efficiently, glucose builds up in the blood and can cause the serious health problems we just identified. There are actually two types of diabetes, Type I and Type II. *Let's compare them:*

	Type 1 Diabetes	Type 2 Diabetes
Description	Cells in the pancreas are attacked by the body's own cells, eliminating the ability of the pancreas to produce insulin.	Diet-related insulin release is large and frequent. Insulin receptor cells become less sensitive to insulin (<i>insulin resistant</i> .) Less sugar is removed from the blood, resulting in high levels of blood sugar.
Causes	Genetics, environmental and auto-immune factors.	Family history, obesity, age, physical inactivity.
Target groups	Children/teens onset	Adults, elderly, ethnic groups
Prone ethnic groups	All	More common in African American, Latino/Hispanic, Native American, Asian or Pacific Islander
Percentage of occurrence	5% -10% of people affected by diabetes have Type I.	90% - 95% of of diabetes are Type 2.
Cure	None	Exercise, weight loss & diet control
Treatment	Insulin Injections, dietary plan, daily exercise	Diet, exercise, weight loss, and/or medication. Insulin Injections may also be needed.
Onset	Rapid -- over weeks.	Slow -- over years.

II. What can you do to prevent developing Type II Diabetes?

With Type I diabetes, the pancreas often fails over a period of weeks. There is no cure, only management. Type II diabetes is partly genetic. If you are African American, Latino/Hispanic, Native American, Asian or Pacific Islander you are at greater risk of developing Type 2 diabetes. This disease is slow to develop, often over years, but tends to get worse over time. However, it can actually be prevented by making healthy food choices. ***One means of prevention is to reduce the amount of sugar you consume!*** The recommendations for consumption of added sugar are no more than 36 grams of per day for men and 24 grams for women.

Sugar vs. Added Sugar. Some sugars occur naturally in food, such as the sugar in an apple. *Added sugar* is a hidden dietary culprit. Added sugar is just that -- it is sugar added by a manufacturer/maker to sweeten the foods you consume, like soda, energy drinks, salad dressings, cakes, and reduced fat peanut butter. Whenever you buy or order food, search the label or menu description for added sugars: These are *agave nectar, brown sugar, cane crystals, cane sugar, corn sweetener, corn syrup, crystalline fructose, dextrose, evaporated cane juice, fructose, fruit juice concentrates, glucose, high-fructose corn syrup, honey, invert sugar, lactose, maltose, malt syrup, molasses, raw sugar, sucrose, sugar, syrup.* (Yes, the syrup Starbucks adds to flavor your drink is indeed an *added sugar.*)

Note: The closer the sugar appears to the beginning of the ingredients list, the more of it there is in the product.

** Source: <http://tobyamidornutrition.com>

and research the grams of added sugar in each of the items and write them on the chart. To see how many “sugar cubes” you consume daily, convert the total grams of sugar into cubes by dividing the grams by 4.2. If your total sugar consumed in a day comes to over 25 grams (for girls) and 37 (boys) go through your list of foods and find the hidden sugar culprits! Then research and identify a few healthy, low sugar “swaps” for that item.

(If you did not finish the in class activity, complete it as homework.)

Product	Grams of Sugar	Sugar Content Total Grams/ 4.2 (1 \square = 4.2 grams of sugar)	Swap It Out!

Closure

Engage students in a discussion: *Don't let hidden sugar drag you down into Type II Diabetes!*
Let's review what you now know:

- 1) You know the names of added sugars that hide in foods.
- 2) You know what the recommended daily consumption limit is for your gender.
- 3) You know how to find sugars on a menu or food label.
- 4) You know how to avoid added sugar by making food swaps.
- 5) You know that making smart food choices is not that hard or inconvenient!

Assessment and Follow-Up:

Go to the app store and download “**Eat This, Not That**” -- the game. (It's free.) Play any of the Classic breakfast, lunch or dinner games in casual mode. Read each answer and track your score. For the next class be prepared to contribute to the discussion at least 2 things you learned from the game. Research app store for healthy eating apps to recommend to classmates. Memorize the list of added sugars, for a quiz in the next class.