

How Sweet It Is

Target Audience:

Adults

Topic Areas:

Staying Sweet With Less Sugar

The participants will:

- Limit soft drinks and other beverages that are high in sugar
- Limit foods that are high in sugar, like candy, chocolate bars, cookies, doughnuts and other baked goods

Improving My Weight

The participants will:

- Eat fewer sweets

Reading Food Labels

The participants will:

- Choose foods and drinks that are lower in sugar

Fast Foods Can Be Healthy

The participants will:

- Limit foods that are high in sugar

How Sweet It Is

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Purpose:

The purpose of this lesson is for participants to learn to lower their sugar intake by choosing foods and drinks low in added sugar.

What The Nutrition Educator Needs To Know To Answer Questions:

It is hard to find someone who does not love sweet foods and drinks. Adding sugar is the main way we make foods sweet. But sugar adds calories, promotes tooth decay, and has few nutrients. Watch out for foods with a lot of added sugar. These are high-sugar foods and drinks that have few other nutrients. These are less healthy choices. It is okay to eat these foods, but only sometimes. Your goal should be to eat mostly foods low in added sugar. You can have a problem when high-sugar, low-nutrient foods crowd out more healthy foods and drinks.

Natural Sugar Verses Added Sugar

Sugars come in many forms. In nature, sugars are found in fruits, vegetables, dairy products, breads, cereals and grains.¹ They can also be added when foods are prepared. Added sugars make up much of the total amount of sugars we eat. Foods that contain a great deal of added sugars include soft drinks, candy, doughnuts, pastries, cookies, pies and cakes.

Natural and added sugars are used in the same way by your body. But, foods that are naturally rich in sugar, like fruits and milk, are often rich in many other nutrients. Foods with lots of added sugars, like soft drinks and candy, often have few vitamins and minerals and are mostly empty calories.

The Sugar-Carbohydrate Connection

¹ United States Department of Agriculture. 2010 Dietary Guidelines for Americans. Available at: <http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2010/PolicyDoc/PolicyDoc.pdf>

Sugars, fiber, and starch are called carbohydrates. Carbohydrates are your body's main source of fuel. They power most all that you do, from walking to breathing. Carbohydrates can be put into two categories—simple and complex. Simple carbohydrates are made up of one or two sugar units. Simple carbohydrates, like those found in table sugar, honey, molasses, milk and fruits, break down quickly during digestion and offer a fast source of energy.

Starch and fiber are complex carbohydrates. They are complex because they are made up of a long chain of sugar units. Because fiber is discussed in other lessons and because it provides very few calories, it will not be talked about in this lesson. Complex carbohydrates, found in grain products and some vegetables, like corn and potatoes, break down slowly giving the body a time-released source of energy. Foods rich in complex carbohydrates should make up the main part of your daily choices from the grain, fruit and vegetable groups because these foods tend to be more nutrient-rich than those that are made mostly from simple carbohydrates.

MyPlate tells you to eat more complex carbohydrates than simple ones. Foods like, whole grain breads and pastas, brown rice, fruits and vegetables and other nutrient-rich foods have complex carbs. They are high in fiber and other nutrients. Foods high in added sugar have more simple carbs. These high-sugar foods, like soda, cakes, cookies and candy should be eaten only sometimes.

Facts About Sugars

- **High sugar foods are high in Calories and low in vitamins and minerals.**
- **The *Dietary Guidelines for Americans* tells you to eat less food with added sugar.²** Foods with added sugars should only make up a small part of your diet.
- **Starches and sugars can cause tooth decay.** This is because the bacteria in your mouth, which live in plaque on your teeth and gums, mix with carbohydrates and make acid. The acid eats away tooth enamel and causes cavities. Eating low-sugar foods, taking care of your teeth every day and getting regular dental care can prevent tooth decay.

Bacteria on Plaque + Starches or Sugars = Acid
Acid + Tooth Enamel = Tooth Decay³

- **Many low-fat foods are high in added sugars.** Sugars are added to make up for the flavor and texture changes that occur when the fat is taken out of some foods. Read the "Nutrition Facts" label to learn the sugar content and the

² United States Department of Agriculture. 2010 Dietary Guidelines for Americans. . Available at: <http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2010/PolicyDoc/PolicyDoc.pdf>.

³ Roberta Larson Duyff, The American Dietetic Association's Complete Food & Nutrition Guide, 2nd Ed. (Hoboken: John Wiley & Sons, 2002) 115.

Calories in foods before you buy them. On food labels, sugars are measured in grams. **Four grams of sugar equals one teaspoon of sugar.**

- **Sugars have many names.** Some names for sugars are:
 - Brown sugar
 - Corn sweetener
 - Fruit juice concentrate
 - High-fructose corn syrup
 - Invert sugar
 - Dextrose
 - Fructose
 - Glucose
 - Honey
 - Maltose
 - Sucrose
 - Corn syrup
 - Lactose
 - Malt Syrup
 - Molasses
 - Raw Sugar
 - Syrup

Notice how many sugar names end in –ose.

- **WIC approved cereals** cannot have more than six grams or one and a half teaspoons of sugar per ounce.
- **Sugar does not cause hyperactivity or attention deficit hyperactive disorder (ADHD).**⁴ No scientific proof shows that sugar causes hyperactivity. In fact, a short time after you eat sugar you may feel sleepy.
- **Sugar does not cause diabetes.**⁵ There are no scientific facts to support a link between sugar and diabetes. When you have diabetes, your body cannot use sugars the way it should. The reasons for this are complex. Diabetes can be caused by genetics, age, obesity or illness. But sugar does not cause diabetes. However, foods that are high in sugar are also high in Calories. Eating too many foods high in Calories can cause weight gain and obesity. Obesity can cause diabetes. Some ways to help manage diabetes are:
 - eat according to your MyPlate personal food plan;
 - be physically active;
 - see your doctor on a regular basis; and

⁴ Duyff, 125.

⁵ 5 Duyff, 125.

- take your medications as the doctor says.

In the past, experts said to eat less sugar if you had diabetes. Today, the American Diabetes Association says many diabetics can have **some sugar as part of a well-balanced diet**⁶ as long as this does not have a bad effect on their blood sugar levels. But, **always** work with a health care professional or your doctor to know what is right for you.

- **Sugar does not make you fat.** Too many Calories and too little activity make you gain weight. Calories come from sugar, but they also come from fat, protein, alcohol, and eating a lot of low-calorie foods. If you are overweight it does not mean you have a "sweet tooth."
- **Sugar substitutes** provide a **sweet taste with few to zero Calories** and do not promote tooth decay. Sugar substitutes can be a good alternative to table sugar if you want the sweet taste without the Calories.

Types Of Sugar Substitutes Approved For Use In The United States:

- **Saccharin** can be used in cooking and baking. But, because it does not have the same texture as sugar, it does not work in all recipes. Heating it also gives it a bitter aftertaste. It is sold under the brand name Sweet 'N Low and Sweet 10.
- **Aspartame** should not be used when cooking or baking because heat destroys its sweetness. If you wish to use it to cook with, add it to products after they are cooked or baked. People who are born with a rare disease called phenylketonuria (PKU) should talk their doctor before using this sweetener. People who feel that aspartame gives them headaches may want to limit how much they consume.⁷ It is sold as Equal and Nutra Sweet.
- **Acesulfame-K** is used in dry mixes for sweetened drinks, gelatin desserts and puddings. It can be used in cooking and baking, but heating it gives it a bitter aftertaste. It is marketed under the brand name Sunette and Sweet One.
- **Sucralose** is added to soft drinks, cakes, muffins, juices and chewing gum. It can be added in cooking and baking. Its brand name is Splenda.
- **Sugar-free does not mean Calorie-free.** Even though a sugar-free food does not have sugar, it may still have Calories from other carbohydrates, fat and protein. Watch out and read labels!

⁶ Duyff, 124.

⁷ SK Van den Eeden, TD Koepsell, WT Longstreth Jr., G van Belle, JR Daling, and B McKnight, "Aspartame ingestion and headaches: a randomized crossover trial," Neurology 1995 Aug; 45 (8): 1631-2.

For Additional Reading:

American Diabetic Association. American Diabetes Association. 3 May 2002
<[http://www.diabetes.org:80/main/application/commercewf?origin=*.jsp&event=link\(home\)](http://www.diabetes.org:80/main/application/commercewf?origin=*.jsp&event=link(home))>.

United States Department of Agriculture. Nutrition and Your Health: Dietary Guidelines for Americans. 5th ed. Home and Garden Bulletin No. 232
Washington, D.C.: USDA, 2000: 32-33.

“Carbohydrates and Sugar” American Heart Association. 2008.
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How Sweet It Is

Main Themes:

Nutrition & Diet

Cooking & Food Storage

Shopping

Budgeting

Safety & Sanitation

Materials Needed:

Activity 1

MyPlate poster

Large plastic container of sand

Teaspoon measuring spoon

2-3 paper towels or 2-3 thin, flimsy paper plates (colored, if possible)

Activity 2

MyPlate poster

Candy bar wrappers, empty doughnut boxes and packages from other sugary snack items participants commonly eat or drink. Make sure you bring in items like soft drinks; cakes; cookies; pies; fruitades and drinks such as fruit punch; dairy desserts such as ice cream; and candy. Also, be sure to have examples of low-sugar foods, like diet soft drinks, water, graham crackers or animal crackers, and lower sugar ice cream desserts and pies or cakes and canned pineapple in unsweetened juice. Note that not all canned fruits offer juice as an option. If syrup is the only choice, choose light syrup.

*You may wish to laminate the labels for longer use.

Large plastic container of sand

“Sugar Expert” pin (optional)

Teaspoon measuring spoon

2-3 paper towels or 2-3 thin, flimsy paper plates (colored, if possible)

Calculator with big keys

Activity 3

If no chalkboard or white board in room, large flipchart of white paper or poster board

Chalk or Marker

“Sugar Expert” pin (optional)

Calculator with big keys

Large plastic container of sand

Teaspoon measuring spoon

2-3 paper towels or 2-3 thin, flimsy paper plates (colored, if possible)

Sugar Counter Book

Time The Activity Is Expected To Take:

Before You Begin: 2 - 5 minutes

Activity 1: 10 minutes

Activity 2: 10 minutes

Activity 3: 20 minutes

Next Week's Goals: 5 minutes

How Sweet It Is

Lesson Plan:

Before You Begin: (2 - 5 minutes)

Ask the participants if they worked on their goals from the last lesson. Ask them which goals they worked on and how or what they did to work on them. Try to get people to tell the class what they did. If they did not work on the goals, ask them to work on them before the next class.

Activity 1: A Sugary Discussion (10 minutes)

1. Before the participants arrive, hang up the MyPlate poster. It is important that you refer to it often in the lesson.
2. Begin the class by telling participants that today's class will be about sugar and discovering how much sugar is in foods they eat. Right away, let them know that you will be using sand to represent sugar. Using sand instead of real sugar will help avoid problems with ants and other insects. Plus, if it gets wet, it will not get sticky. Explain that **1 level teaspoon of sugar (represented by sand) = 4 grams of sugar**. Show participants where grams of sugar are found on the food label. Using the teaspoon measuring spoon and sand, show them what 1 level teaspoon of sand looks like.
3. Counting aloud, measure out 11 teaspoons of sand onto a paper towel or paper plate. Tell the participants that this is about the amount of sugar that is found in a common food or drink. Ask them to tell you what they think it is. The correct answer is a 12-ounce soft drink.
4. Start a short discussion.
 - Ask the class how many of them have heard that eating a lot of sugar is bad for them.

Show of hands.

- Ask, "What bad things does sugar do to people?"

Participants will most likely say that too much sugar can cause tooth decay, hyperactivity, attention deficit hyperactivity disorder (ADHD), diabetes and/or make you fat. If they do not bring up these problems, be sure to raise them and say that eating too much sugar does not cause hyperactivity, ADHD or diabetes. Sugars do play a role in tooth decay. And eating too many Calories

can make people gain weight which can cause obesity, which can lead to diabetes. Most importantly, high sugar foods and drinks keep people from eating more healthy foods! For example, share that many children now drink high-sugar soft drinks rather than milk. So, they get lots of sugar and miss the calcium and other nutrients they need to help them grow.

- Ask, “What snack foods and drinks do you eat often that are high in sugar?”

Answers will vary.

5. Tell the class to watch out for high-sugar foods that have few other nutrients. The goal always should be to eat mostly foods with very little added sugar and eat high-sugar foods only once in a while. Problems arise when high-sugar, low-nutrient foods crowd out more healthy foods and drinks.
6. Thank the class for sharing their information. Tell them that in the rest of today’s lesson they will be discovering how much sugar are in common foods they eat.

Activity 2: How Sweet It Is (10 minutes)

1. Place empty food containers on table or desk.
2. Tell participants to try to eat foods with less added sugars. Remind them what kinds of foods have a lot of added sugar like apple pie, soda, candy, cakes, etc..
3. Remind the class that sand will represent sugar.
4. Ask for a volunteer who likes to play in the sand. Tell the volunteer that she or he is your “Sugar Expert.” If you have a “Sugar Expert” pin, give it to this volunteer to wear.
5. Once you have picked a “Sugar Expert” volunteer, show the volunteer and the class for a second time how to read for sugar on a food label. (Participants have already been shown how to do this in Activity 1, Step 2.) Remind the class that **4 grams of sugar = 1 teaspoon.**
6. Have each participant pick a food from the table. If the group is large, divide them into smaller groups and have each group pick a food. You decide which way will work better in terms of time and the group size.
7. Beginning with one group or participant, ask the group or participant to hold up the food item for the “Sugar Expert” to see. Be sure to ask how much of the food or drink in the package would be consumed. For example, if a drink is

chosen, ask if the group or participant usually drinks the whole bottle. Check how many servings that would be on the “Nutrition Facts” label. For the drink, it could say that it is 2 servings. If the participant drinks the whole bottle, you would need to double the amount of sugar that is in one serving on the label to see how much sugar the participant would be getting if the participant drank the whole drink.

8. Ask the “Sugar Expert” to use the teaspoon measuring spoon to measure out how much sugar/sand she or he thinks is in the amount of food usually consumed. The “Sugar Expert” can ask participants in the class for help. Have the “Sugar Expert” place that amount of sugar/sand onto a paper towel or plate. Either you or the “Sugar Expert” should count aloud the number of teaspoons added to the paper towel or plate. Have the “Sugar Expert” stop when she or he thinks there is enough sugar/sand on the paper towel or plate.
9. Ask the group or participant whose item you are using to read the “Nutrition Facts” label, and to reveal the actual amount of sugar to the class.
10. Divide that number by 4 to learn the number of teaspoons of sugar in the item. You can use a calculator to do this. If your “Sugar Expert” guessed fewer teaspoons than are really in the item, ask your “Sugar Expert” to add the extra teaspoons. If she or he guessed too many, remove the extra sugar/sand to show the right amount for that food or drink.
11. To review: Ask the group member or participant:
 - "How much sugar is in the container of the food or drink you are eating?"
 - "How many servings will you be eating?"
 - "How many grams of sugar are in the number of servings you are eating?"
 - "How many teaspoons of sugar is that?"
12. Repeat the activity with other groups or participants’ food choices. Ensure that everyone in the class reads at least one label either as an individual or as part of a group. Repeat as many times as time permits. Thank all the volunteers.
13. Ask participants what they learned from this activity. Ask, "What low-sugar snack choices would you be willing to eat?" Good choices will vary depending on which foods and drinks participants choose. Some good choices are fruit canned in unsweetened juice, fresh fruit or vegetables, diet drinks, all low-sugar or sugar-free items. Ask what they learned about looking at “Nutrition Facts” labels and comparing labels.

Activity 3: A Mound of Sugar (25 minutes)

1. If there is a chalkboard in the room, use it. If not, use the flipchart. Divide the chalkboard or flipchart into four equal spaces, labeled:
 - Breakfast
 - Lunch
 - Dinner
 - Snacks
2. Building on the last activity, tell the class you will now look at how much sugar one person eats and drinks in an average day. Let participants know that the amount of sugar in snack foods as well as other foods can really add up in one day.
3. Ask for four volunteers. (If you only have four participants in the class, all will take part in the activity.)

Volunteers' Tasks (Each task will be explained in detail in the activity)

- The first volunteer will describe what she or he eats and drinks during an average day. Tell the class you need a very brave person for this job who is not afraid to tell you the truth about her or his diet.
 - The second volunteer will write down on the chalkboard or notepad what was eaten. Tell the class you need someone who likes writing on the board.
 - The third volunteer will use the calculator to divide the grams of sugar in the food by four. Tell the class you need someone who is good at math.
 - The fourth volunteer will measure out the amount of sugar eaten. Tell the class that you need another “Sugar Expert” who likes playing in the sand. If you are using a “Sugar Expert” pin, give it to this volunteer to wear.
4. Have the first volunteer who agreed to describe her or his diet come to the front of the room. Ask her or him to describe what she or he eats and drinks on a normal day, beginning with breakfast. Do not forget milk and sugar in coffee or tea. Ask her or him what size each item is. She or he can describe or show you the amount.
 5. Have the second volunteer write down the food item or drink item and its size under the correct space. Continue this casual diet recall through each of the categories labeled on the chalkboard or flipchart—Breakfast, Lunch, Dinner and Snacks. You do not need to have this activity be as accurate as the diet recall. This listing of food should take much less time than the regular diet recall.
 6. Once all of the food and drink items and their sizes are listed, have the third and fourth volunteers come forward. Hand the third volunteer the calculator

and tell her or him that you will read aloud how many grams of sugar are in each food, and it will be her or his job to divide that number by four and call it out to the class. This is the number of teaspoons of sugar in the food.

7. Hand the fourth volunteer the teaspoon measuring spoon, and tell her or him to measure out the amount of sugar/sand the third volunteer calls out.
8. Using your sugar counter book, look up the amount of sugar in the food items listed on the chalkboard or flipchart. Read aloud the grams of sugar in each item. Keep in mind serving sizes. For example, if the participant only drank half of a can of soda, only give half of the grams for that item. If a food is not listed in the book, use a similar food in its place.
9. The second volunteer, who is writing, will mark down the amount of sugar next to the item. Remind participants that **4 grams of sugar = 1 teaspoon**. The volunteer with the calculator will divide the number of grams by four.
10. For example:

Can of cola (42 grams of sugar)
 $42 \div 4 = 10.5$, round up to 11 teaspoons

The “Sugar Expert” should measure out that amount of sand with the teaspoon and place it on a paper towel or plate.

11. Repeat steps 4-7 for each of the items on chalkboard or flipchart.
 - Look up the grams of sugar for the correct portion size.
 - Write down the grams of sugar.
 - Divide the grams of sugar by four.
 - Measure out the amount and place on a paper towel or plate.
12. Have the third volunteer, who is using the calculator, total all of the grams of sugar on the board.
13. After the activity is done, invite the rest of the class to look at the total amount of sugar consumed in one day. Discuss the participants’ reactions.
14. Ask participants to name high-sugar foods from this activity that they often eat and any ideas for foods they would be willing to eat instead.

Next Week’s Goals: (5 minutes)

1. Ask the participants to name one thing that they learned in today’s class that they will use. Make sure that each learning objective is mentioned, and if not, be sure to re-state that objective. Remind them to work on meeting their new

goals they set today before the next class. Let them know that they will be asked what changes they made at the next class.

2. Invite comments, suggestions or questions.
3. Thank the participants for coming and tell them what the next lesson will be about.

For The Teacher: What Makes This Lesson Behaviorally-Focused?

- In Activity 1, participants talk about high-sugar food choices that they make and think about the negative effects of too much sugar.
- In Activity 2, participants pick out a food or drink that they often consume and see how much sugar is in the amount that they normally eat. They then select other choices they would be willing to eat instead.
- In Activity 3, a participant's diet is used to see how much sugar people eat in a day. Steps for cutting back on the amount of sugar that they currently consume are suggested.
- In Next Week's Goals, the participants are invited to name one thing that they learned during the class that they will use. They choose the behaviors that they will work on during the coming week.



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