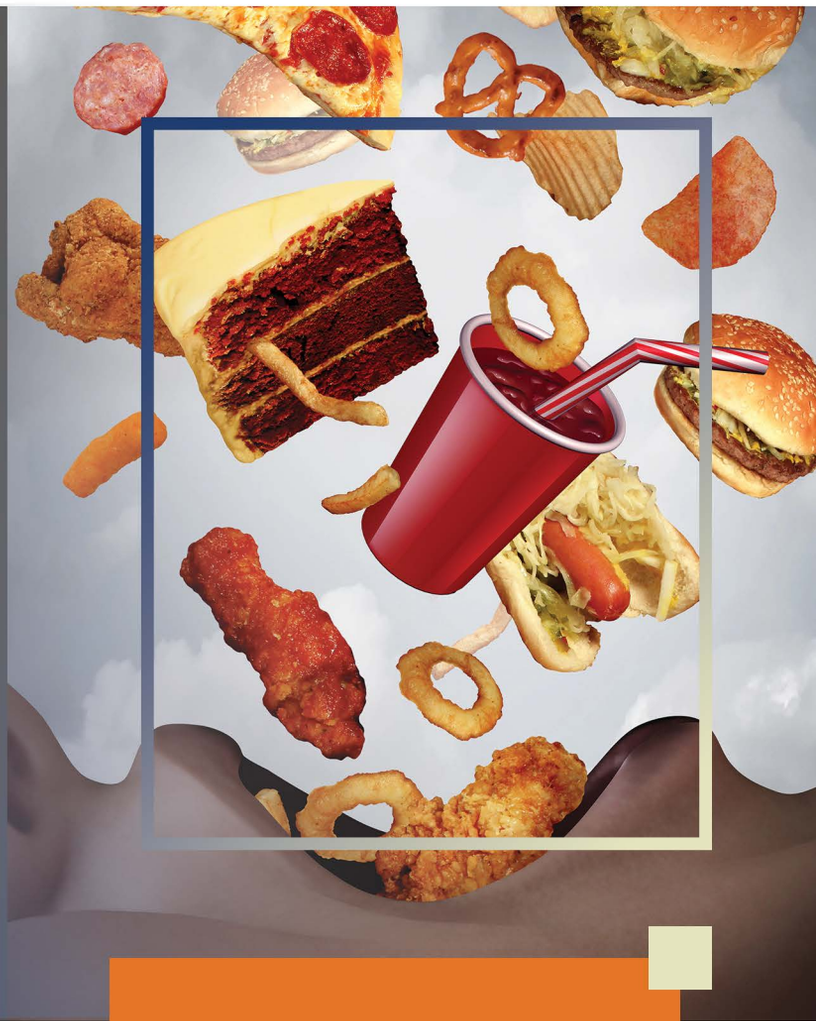
FDA U.S. FOOD & DRUG ADMINISTRATION

LifeSmarts
Learn it. Live it.

NUTRITION

NUTRIENTS TO GET LESS OF



The "Nutrients to Get Less of" module empowers students with the knowledge they need to make healthier dietary choices by identifying and reducing the intake of certain nutrients that can negatively impact health. This module focuses on key nutrients such as added sugars, sodium, and saturated fats, which are often over-consumed in the typical diet. One interesting feature of this module is its exploration of how these nutrients are hidden in everyday foods, even those that might seem healthy at first glance. Developed by educators and FDA experts, this module ties directly into LifeSmarts topics such as health, consumer awareness, and nutrition. Through engaging videos, practical tips, and interactive discussions, students will learn how to recognize and limit these nutrients in their diets, leading to better health outcomes. Teachers will find the vocabulary and enrichment activities essential for helping students apply this knowledge in real-world scenarios and prepare for LifeSmarts competitions.

DISCUSSION QUESTIONS

- Explain why it is important to limit added sugars in your diet. What are some potential health risks associated with high consumption of added sugars?
- Discuss the role of sodium in the body and why excessive sodium intake can be harmful. How can consumers use the Nutrition Facts label to monitor and reduce their sodium intake?

CHALLENGE QUESTION

- Research a public health initiative aimed at reducing sodium or added sugar intake in a population. What strategies were used, and what were the outcomes of the initiative?

VOCABULARY

- Saturated Fat
- Added Sugars
- Sodium
- Trans Fat
- Cholesterol
- Refined Grains
- Empty Calories
- Portion Size
- Nutrient-Dense Foods
- Daily Value (DV)

ACTIVITIES

- Added Sugars in Beverages
- Sodium in Snack Foods

VIDEOS

* See reverse side for list

See this lesson and more at LifeSmarts U.

This lesson was developed by educators and experts in conjunction with the U.S. Food & Drug Administration

VIDEO LINKS

Added Sugar on the Food Label (1:35)
https://www.youtube.com/watch?v=PygjyyWvqhU

Hy-Vee KidsFit at Home – Rethink Your Drink (8:37)
https://www.youtube.com/watch?v=eu9BgqCqIa8

Sodium on the Food Label (1:09)
https://www.youtube.com/watch?v=wY11oImXrOg

Eating Too Much Salt? 4 Ways to Cut Back ....Gradually (1:19)
https://www.youtube.com/watch?v=OG8RCuZNbeA

How Much Sugar Is In Our Drinks?
https://www.youtube.com/watch?v=wsMjLBL6aJE

My Drink Has How Much Sugar?
https://www.youtube.com/watch?v=ATIZkYp3EYM

OTHER WEB LINKS

Total and Added Sugars: Interactive Nutrition Facts Label
https://www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_Total&AddedSugars_October2021.pdf

Total Carbohydrates: Interactive Nutrition Facts Label
https://www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_TotalCarbohydrate_October2021.pdf

FoodData Central
https://fdc.nal.usda.gov

The truth behind sugar-filled beverages
https://blogs.bcm.edu/2019/04/16/the-truth-behind-sugar-filled-beverages

Sodium in Your Diet – FDA Fact Sheet
https://www.fda.gov/media/84261/download

30 Foods High in Sodium and What to Eat Instead
https://www.healthline.com/nutrition/foods-high-in-sodium

Be Salt Smart - MyPlate
https://www.myplate.gov/tip-sheet/be-salt-smart

Cut Down on Sodium - Dietary Guidelines for Americans
https://www.dietaryguidelines.gov/sites/default/files/2021-11/DGA_SodiumFactSheet_2021-05-26_508c.pdf

DISCUSSION QUESTIONS (SAMPLE ANSWERS)

- A: Limiting added sugars in your diet is crucial because excessive intake can lead to various health issues, including obesity, type 2 diabetes, and heart disease. Added sugars provide empty calories, meaning they contribute energy without essential nutrients. This can result in weight gain and increased risk for chronic diseases. Furthermore, high consumption of added sugars is linked to increased triglyceride levels, which is a risk factor for heart disease. By reducing added sugars, individuals can better manage their weight, maintain stable blood sugar levels, and reduce the risk of developing chronic conditions.
- Sodium plays a vital role in the body by helping to maintain fluid balance, support nerve function, and regulate muscle contractions. However, excessive sodium intake can be harmful, leading to high blood pressure, which increases the risk of heart disease and stroke. The average American consumes more sodium than the recommended limit, primarily from processed and restaurant foods. Consumers can use the Nutrition Facts label to monitor their sodium intake by checking the Percent Daily Value (%DV) of sodium per serving. Foods with 5% DV or less of sodium per serving are considered low, while those with 20% DV or more are high. Choosing lower-sodium options and limiting processed foods can help reduce sodium intake and improve overall health.

CHALLENGE QUESTION (SAMPLE ANSWER)

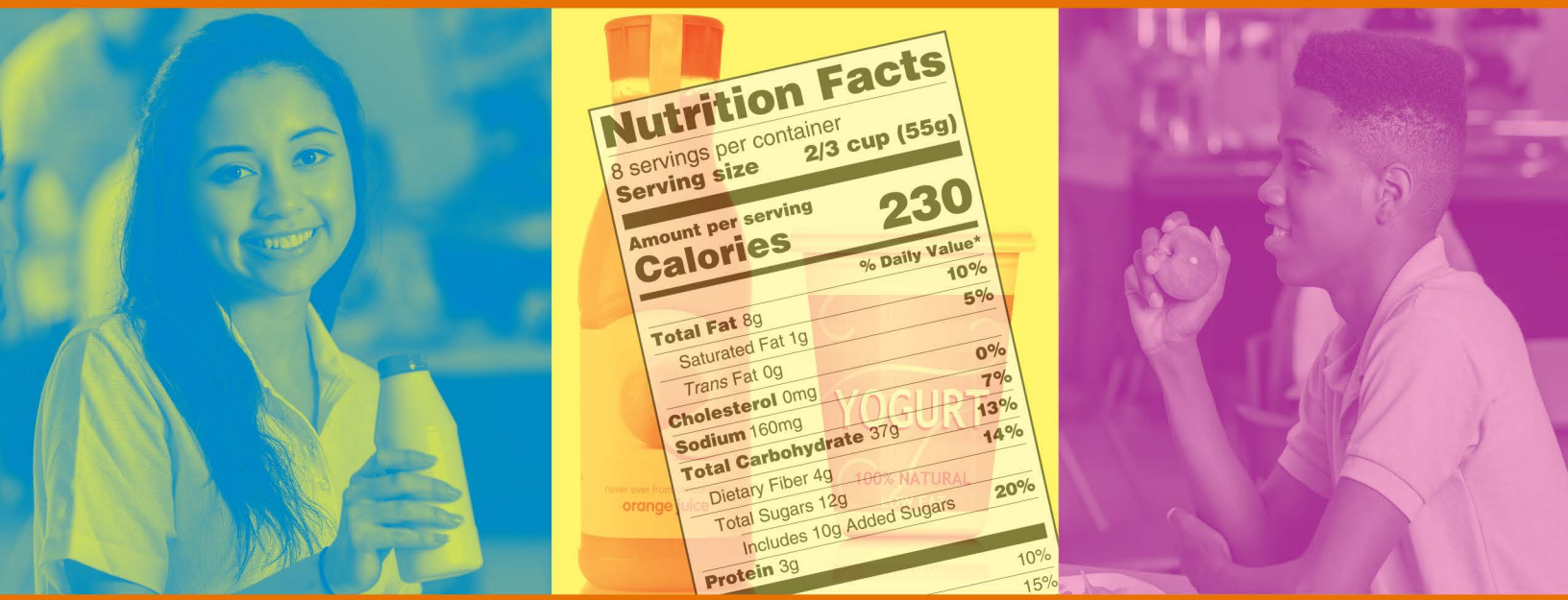
- **An example of such an initiative is New York City's "National Salt Reduction Initiative" (NSRI).**
  https://www.ncbi.nlm.nih.gov/books/NBK50950/#:~:text=The%20NSRI%20goal%20is%20to,of%20packaged%20and%20restaurant%20foods.

  Key Points:
  Strategies Used: The NSRI was a public-private partnership launched to reduce sodium levels in packaged and restaurant foods. The initiative set voluntary targets for reducing sodium content in various food categories, worked with food manufacturers and restaurants to reformulate products, and conducted public awareness campaigns to educate consumers about the risks of high sodium intake.

  Outcomes: The initiative led to a measurable reduction in sodium levels in many food products, contributing to a gradual decline in sodium consumption among the population. The NSRI also influenced other regions and countries to adopt similar strategies, highlighting the effectiveness of collaborative efforts between government, industry, and public health organizations in improving dietary habits and reducing the prevalence of hypertension and related health conditions.

SCIENCE AND OUR FOOD SUPPLY

Nutrition - Nutrients to Get Less of

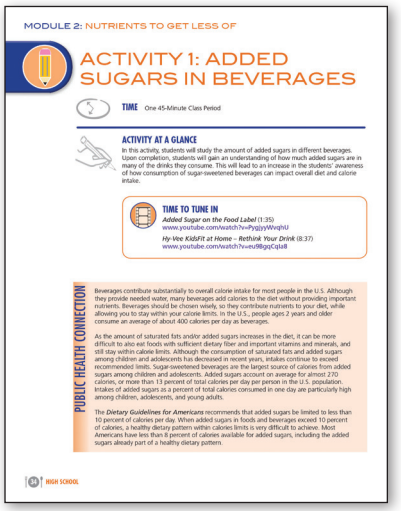


Teacher's Guide for High School Classrooms

2nd Edition

OVERVIEW OF ACTIVITIES

The activities are written in this easy-to-understand format.


MODULE 2: NUTRIENTS TO GET LESS OF

ACTIVITY 1: ADDED SUGARS IN BEVERAGES

TIME One 45-Minute Class Period

ACTIVITY AT A GLANCE

In this activity, students will study the amount of added sugars in different beverages. Upon completion, students will gain an understanding of how much added sugars are in many of the drinks they consume. This will lead to an increase in the students' awareness of how consumption of sugar-sweetened beverages can impact overall diet and calorie intake.

TIME TO TUNE IN

Added Sugar on the Food Label (1:35)
www.youtube.com/watch?v=PygjyWvqhU

Hy-Vee KidsFit at Home – Rethink Your Drink (8:37)
www.youtube.com/watch?v=ueJ8BgqCqUs8

PUBLIC HEALTH CONNECTION

Beverages contribute substantially to overall calorie intake for most people in the U.S. Although they provide needed water, many beverages add calories to the diet without providing important nutrients. Beverages should be chosen wisely, so they contribute nutrients to your diet, while allowing you to stay within your calorie limits. In the U.S., people ages 2 years and older consume an average of about 400 calories per day as beverages.

As the amount of saturated fats and/or added sugars increases in the diet, it can be more difficult to also eat foods with sufficient dietary fiber and important vitamins and minerals, and still stay within calorie limits. Although the consumption of saturated fats and added sugars among children and adolescents has decreased in recent years, intakes continue to exceed recommended limits. Sugar-sweetened beverages are the largest source of calories from added sugars among children and adolescents. Added sugars account on average for almost 270 calories, or more than 13 percent of total calories per day per person in the U.S. population. Intakes of added sugars as a percent of total calories consumed in one day are particularly high among children, adolescents, and young adults.

The *Dietary Guidelines for Americans* recommends that added sugars be limited to less than 10 percent of calories per day. When added sugars in foods and beverages exceed 10 percent of calories, a healthy dietary pattern within calories limits is very difficult to achieve. Most Americans have less than 8 percent of calories available for added sugars, including the added sugars already part of a healthy dietary pattern.

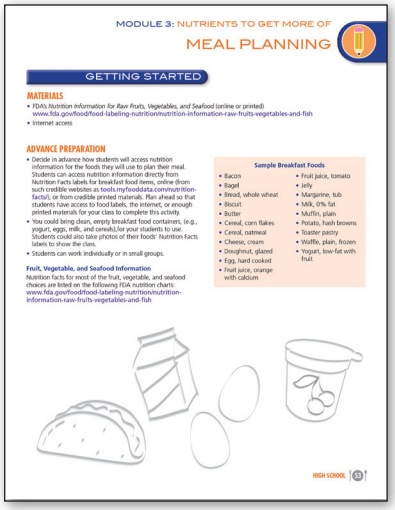
HIGH SCHOOL

TIME: The approximate amount of time needed to perform the activity.

ACTIVITY AT A GLANCE: Briefly summarizes the activity.

TIME TO TUNE IN: Shows the URL for online video or digital content (for youth) related to that module. Video URLs and web links are shown in purple.

PUBLIC HEALTH CONNECTION: Relates background information to relevant public health impact.


MODULE 3: NUTRIENTS TO GET MORE OF

MEAL PLANNING

GETTING STARTED

MATERIALS

- *FDA's Nutrition Information for Raw Fruits, Vegetables, and Seafood* (online or printed) www.fda.gov/food/food-labeling-nutrition/nutrition-information-raw-fruits-vegetables-and-fish
- Internet access

ADVANCE PREPARATION

- Decide in advance how students will access nutrition information for the foods they will use to plan their meal. Students can access nutrition information directly from Nutrition Facts labels for breakfast food items, online (from such credible websites as tools.myfooddata.com/nutrition-facts), or from credible printed materials. Plan ahead so that students have access to food labels, the internet, or enough printed materials for your class to complete this activity.
- You could bring clean, empty breakfast food containers, (e.g., yogurt, eggs, milk, and cereals),for your students to use. Students could also take photos of their foods' Nutrition Facts labels to show the class.
- Students can work individually or in small groups.

Fruit, Vegetable, and Seafood Information

Nutrition facts for most of the fruit, vegetable, and seafood choices are listed on the following FDA nutrition charts: www.fda.gov/food/food-labeling-nutrition/nutrition-information-raw-fruits-vegetables-and-fish

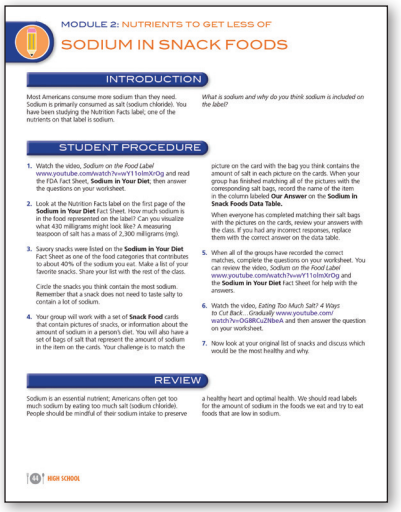
Sample Breakfast Foods

- Bacon
- Bagel
- Bread, whole wheat
- Biscuit
- Butter
- Cereal, corn flakes
- Cereal, oatmeal
- Cheese, cream
- Doughnut, glazed
- Egg, hard cooked
- Fruit juice, orange with calcium
- Fruit juice, tomato
- Jelly
- Margarine, tub
- Milk, 0% fat
- Muffin, plain
- Potato, hash browns
- Toaster pastry
- Waffle, plain, frozen
- Yogurt, low-fat with fruit

HIGH SCHOOL

MATERIALS: Lists the items needed to perform the activity.

ADVANCE PREPARATION: Indicates what you need to do *before* conducting the activity.


MODULE 2: NUTRIENTS TO GET LESS OF

SODIUM IN SNACK FOODS

INTRODUCTION

Most Americans consume more sodium than they need. Sodium is primarily consumed as salt (sodium chloride). You have been studying the Nutrition Facts label, one of the nutrients on that label is sodium.

What is sodium and why do you think sodium is included on the label?

STUDENT PROCEDURE

1. Watch the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and read the FDA Fact Sheet, **Sodium in Your Diet**; then answer the questions on your worksheet.
2. Look at the Nutrition Facts label on the first page of the **Sodium in Your Diet** Fact Sheet. How much sodium is in the food represented on the label? Can you visualize what 430 milligrams might look like? A measuring teaspoon of salt has a mass of 2,300 milligrams (mg).
3. Savory snacks were listed on the **Sodium in Your Diet** Fact Sheet as one of the food categories that contributes to about 40% of the sodium you eat. Make a list of your favorite snacks. Share your list with the rest of the class.

   Circle the snacks you think contain the most sodium. Remember that a snack does not need to taste salty to contain a lot of sodium.
4. Your group will work with a set of **Snack Food** cards that contain pictures of snacks, or information about the amount of sodium in a person's diet. You will also have a set of bags of salt that represent the amount of sodium in the item on the cards. Your challenge is to match the picture on the card with the bag you think contains the amount of salt in each picture on the cards. When your group has finished matching all of the pictures with the corresponding salt bags, record the name of the item in the column labeled **Our Answer** on the **Sodium in Snack Foods Data Table.**

   When everyone has completed matching their salt bags with the pictures on the cards, review your answers with the class. If you had any incorrect responses, replace them with the correct answer on the data table.
5. When all of the groups have recorded the correct matches, complete the questions on your worksheet. You can review the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and the **Sodium in Your Diet** Fact Sheet for help with the answers.
6. Watch the video, *Eating Too Much Salt? 4 Ways to Cut Back… Gradually* www.youtube.com/watch?v=OGBRCuZNbeA and then answer the question on your worksheet.
7. Now look at your original list of snacks and discuss which would be the most healthy and why.

REVIEW

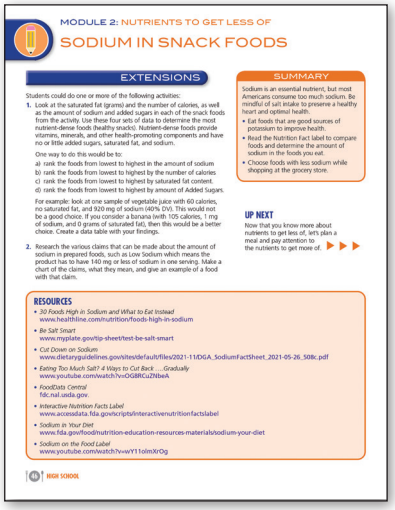
Sodium is an essential nutrient; Americans often get too much sodium by eating too much salt (sodium chloride). People should be mindful of their sodium intake to preserve a healthy heart and optimal health. We should read labels for the amount of sodium in the foods we eat and try to eat foods that are low in sodium.

HIGH SCHOOL

INTRODUCTION: Provides fun, innovative suggestions for introducing the activity. Where provided, suggested teacher dialogue is indicated by ***boldface italics***.

STUDENT PROCEDURE: Gives the step-by-step process for the activity. Where provided, suggested teacher dialogue is indicated by ***boldface italics***.

REVIEW: Uses interesting questions to guide students through a review of what they learned in the activity.


MODULE 2: NUTRIENTS TO GET LESS OF

SODIUM IN SNACK FOODS

EXTENSIONS

Students could do one or more of the following activities:

1. Look at the saturated fat (grams) and the number of calories, as well as the amount of sodium and added sugars in each of the snack foods from the activity. Use these four sets of data to determine the most nutrient-dense foods (healthy snacks). Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium.

   One way to do this would be to:

   a) rank the foods from lowest to highest in the amount of sodium
   b) rank the foods from lowest to highest by the number of calories
   c) rank the foods from lowest to highest by saturated fat content.
   d) rank the foods from lowest to highest by amount of Added Sugars.

   For example: look at one sample of vegetable juice with 60 calories, no saturated fat, and 920 mg of sodium (40% DV). This would not be a good choice. If you consider a banana (with 105 calories, 1 mg of sodium, and 0 grams of saturated fat), then this would be a better choice. Create a data table with your findings.
2. Research the various claims that can be made about the amount of sodium in prepared foods, such as Low Sodium which means the product has to have 140 mg or less of sodium in one serving. Make a chart of the claims, what they mean, and give an example of a food with that claim.

SUMMARY

Sodium is an essential nutrient, but most Americans consume too much sodium. Be mindful of salt intake to preserve a healthy heart and optimal health.

- Eat foods that are good sources of potassium to improve health.
- Read the Nutrition Fact label to compare foods and determine the amount of sodium in the foods you eat.
- Choose foods with less sodium while shopping at the grocery store.

UP NEXT

Now that you know more about nutrients to get less of, let's plan a meal and pay attention to the nutrients to get more of. ▶ ▶ ▶

RESOURCES

- *30 Foods High in Sodium and What to Eat Instead* www.healthline.com/nutrition/foods-high-in-sodium
- *Be Salt Smart* www.myplate.gov/tip-sheet/test-be-salt-smart
- *Cut Down on Sodium* www.dietaryguidelines.gov/sites/default/files/2021-11/DGA_SodiumFactSheet_2021-05-26_508c.pdf
- *Eating Too Much Salt? 4 Ways to Cut Back …Gradually* www.youtube.com/watch?v=OGBRCuZNbeA
- *FoodData Central* fdc.nal.usda.gov.
- *Interactive Nutrition Facts Label* www.accessdata.fda.gov/scripts/InteractiveNutritionFactslabel
- *Sodium in Your Diet* www.fda.gov/food/nutrition-education-resources-materials/sodium-your-diet
- *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg

HIGH SCHOOL

SUMMARY: Summarizes key concepts learned in the activity.

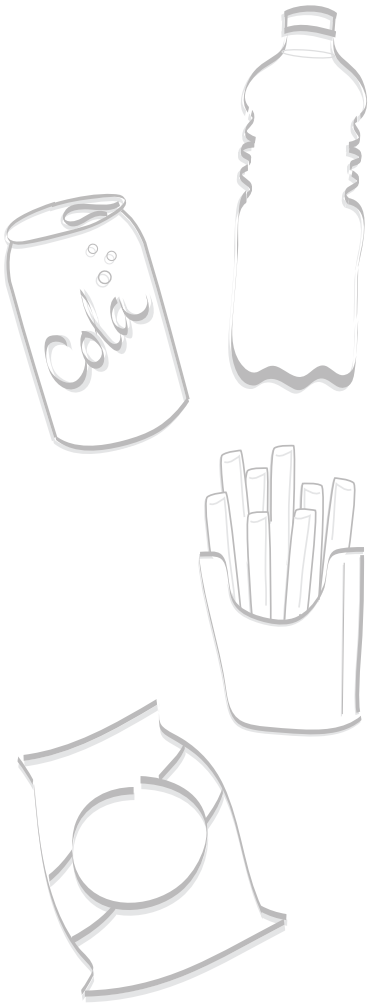
EXTENSIONS: Suggests activities to help students learn more about the topic.

RESOURCES: Provides references to online resources that enhance the activity or for further study.

UP NEXT: Gives a preview of the next activity.

MODULE 2 NUTRIENTS TO GET LESS OF

This module introduces nutrients to get less of, some foods and beverages that may contain nutrients to limit, and how to use the Nutrition Facts label to identify them.



BACKGROUND INFORMATION: PART 1

Understanding Carbohydrates introduces these nutrients with a focus on added sugars.

ACTIVITY 1

Added Sugars in Beverages challenges students to examine the added sugars content in a variety of familiar drinks.

Time to Tune In

Added Sugar on the Food Label (1:35)
www.youtube.com/watch?v=PygjyyWvqhU

Hy-Vee KidsFit at Home – Rethink Your Drink (8:37)
www.youtube.com/watch?v=eu9BgqCqIa8

BACKGROUND INFORMATION: PART 2

All About Sodium discusses what sodium is, where it is found, and how to limit its intake.

ACTIVITY 2

Sodium in Snack Foods uses some favorite snack foods as a springboard to examine sodium content.

Time to Tune In

Sodium on the Food Label (1:09)
www.youtube.com/watch?v=wY11oImXrOg

Eating Too Much Salt? 4 Ways to Cut Back ….Gradually (1:19)
www.youtube.com/watch?v=OG8RCuZNbeA&t=3s

Remember the Nutrients to Get Less Of

Get less than 100% DV of these each day: • Saturated Fat • Added Sugars • Sodium

Nutrients to get less of should be limited as part of a healthy eating pattern that consists of a variety of food and beverages that stay within your calorie needs. For example, when a food you like is high in a nutrient you want to get less of, you can balance it with foods that are low in that nutrient at other times of the day.

BACKGROUND INFORMATION

PART 1

Understanding Carbohydrates

Carbohydrates include total sugars (naturally present and added), dietary fiber, and sugar alcohols. The Daily Value for total carbohydrates is 275 grams (based on a 2,000-calorie daily diet). Although most people consume enough carbohydrates, many people consume too much added sugars and refined starches and not enough fiber.

About Sugars

In terms of their chemical structure, sugars are the smallest and simplest type of carbohydrate. They are easily digested and absorbed by the body. There are two main types of sugars, and both types are found in many foods.

Sugars that are composed of one molecule are called monosaccharides. They are small enough to be absorbed directly into the bloodstream. They include:

- Fructose
- Glucose
- Galactose

Sugars that contain two molecules of sugar linked together are called disaccharides. They are broken down in your body into single sugars. They include:

- Sucrose (table sugar) = glucose + fructose
- Lactose (milk sugar) = glucose + galactose
- Maltose (malt sugar) = glucose + glucose

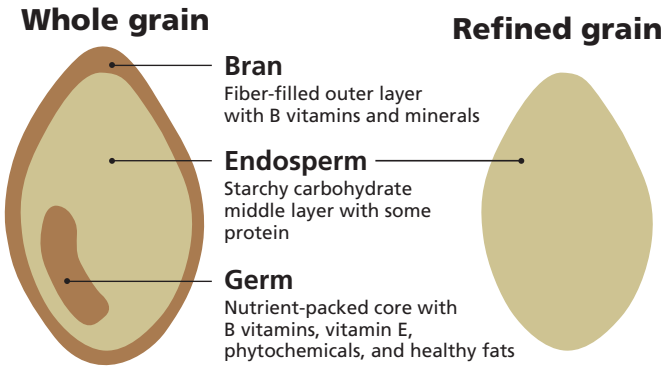
Focus on Starches

Starches are made up of many **glucose** molecules linked together into long chains. Starches are found naturally in foods such as vegetables (e.g., potatoes, carrots), grains (e.g., brown rice, oats, wheat, barley, corn), and beans and peas (e.g., kidney beans, garbanzo beans, lentils, split peas). Refined starches (e.g., corn starch) can be added to foods as thickeners and stabilizers during processing or cooking.

About Dietary Fiber

Fiber, or dietary fiber, is a type of carbohydrate made up of many sugar molecules linked together. But unlike other carbohydrates (such as starch), dietary fiber is bound together in such a way that it cannot be readily digested in the small intestine. Dietary fiber is found in bran, whole grain foods (such as whole grain breads, whole grain cereals, whole grain pasta, and brown rice), fruits, vegetables, beans, peas, and lentils, and nuts and seeds. The *Dietary Guidelines for Americans* recommends that at least half of total grains consumed be whole grains and that people limit refined starches and refined grains.

Whole Versus Refined Grain



DID YOU KNOW?

Sugar alcohols are a type of carbohydrate that chemically have characteristics of both sugars and alcohols but are not completely absorbed by the body; they provide a sweet taste with fewer calories per gram than sugar. They are found naturally in small amounts in a variety of fruits and vegetables and are also commercially produced and added as reduced-calorie sweeteners to certain foods such as chewing gum, baked goods, desserts, and frostings. They may be used in foods that are labeled "sugar-free" or "no added sugar".

TIPS The ingredient statement on the label shows the ingredients in descending order by weight: the closer they are to the beginning of the list, the more of that ingredient is in the food.

BACKGROUND INFORMATION

Sugars: A Closer Look

Where Are They Found?

Sugars are found naturally in many nutritious foods and beverages. They are also *added* to some foods and beverages during processing and preparation, or they can be consumed separately.

Naturally occurring sugars are found in a variety of foods, including:

- Fruits (fresh, frozen, dried or canned in 100% fruit juices)
- 100% fruit juices
- Dairy products
- Vegetables

Added sugars are often found in such foods as:

- Baked goods (such as cakes, cookies, pastries, and pies)
- Desserts (such as ice cream and puddings)
- Salad dressings, sauces, spreads, condiments, and gravies
- Sugar-sweetened beverages (such as energy drinks, fruit drinks, regular soda, sports drinks, sweetened waters, and sweetened coffee and tea)
- Sweetened breakfast cereal
- Sweets (such as candies, jams, sweet toppings, and syrups)
- Single-ingredient sugars (such as table sugar, maple syrup, or honey)

What Sugars Do

Sugars provide calories and supply energy for the body. Each gram of sugar provides 4 calories. Your body breaks down sugars into glucose. Glucose in the blood (often referred to as blood sugar) is the primary energy source for your cells, tissues, and organs. Your body can use this glucose immediately, or it can store small amounts in your liver and muscles for later use.

Sugars (both naturally occurring and those added to foods and beverages) increase the risk of cavities (also known as "dental caries"). In addition, consuming high levels of added sugars from processed foods and beverages that contain few nutrients can lead to eating excess calories with little nutritional benefit. The *Dietary Guidelines for Americans* recommends limiting calories from added sugars to less than 10% of total calories per day.

Identifying Added Sugars

The amount of Total Sugars listed on the Nutrition Facts label includes those that occur naturally in the food or beverage as well as any Added Sugars. Added Sugars, listed in both grams and as a percent Daily Value, are required on most Nutrition Facts labels. They are included as part of the "Total Sugars" declaration, not as more sugars.

Added sugars are used to sweeten, preserve, or improve certain functional attributes of food, such as viscosity, texture, color, or browning capability. Added sugars are included in the ingredient list on food and beverage packages.

Some examples of added sugars are:

- brown sugar
- corn sweetener
- corn syrup
- dextrose
- fructose sweetener
- glucose
- high fructose corn syrup
- honey
- invert sugar
- lactose
- maltose
- malt syrup
- maple syrup
- molasses
- pancake syrup
- raw sugar
- sucrose
- turbinado sugar

ACTIVITY 1: ADDED SUGARS IN BEVERAGES

TIME One 45-Minute Class Period

ACTIVITY AT A GLANCE

In this activity, students will study the amount of added sugars in different beverages. Upon completion, students will gain an understanding of how much added sugars are in many of the drinks they consume. This will lead to an increase in the students' awareness of how consumption of sugar-sweetened beverages can impact overall diet and calorie intake.

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ADDED SUGARS IN BEVERAGES

GETTING STARTED

MATERIALS

- Beverages or empty beverage containers; images of beverages with their Nutrition Facts labels displayed are also appropriate
- Resealable, quart-sized, plastic bags
- Table sugar
- Measuring teaspoon
- Scale that measures in grams
- **How Much Added Sugar Is In Your Beverage?** worksheet
- FDA Fact Sheets:

  Total and Added Sugars: www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_Total&AddedSugars_October2021.pdf

  Total Carbohydrates: www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_TotalCarbohydrate_October2021.pdf

ADVANCE PREPARATION

1. Gather the beverages or beverage containers to include a variety of sugar-sweetened beverages as well as one sample of bottled water and one sample of diet (sugar-free) soda, each with 0 grams of Added Sugars. The worksheet includes space for 12 beverages, however, use as many or few as time allows.

   Suggested beverages:
   - Bottle of water
   - 12 fl. oz. can of regular soda
   - 20 fl. oz. bottle of regular soda
   - Oversized container of regular soda
   - 20 fl. oz. bottle of diet soda
   - 13.7 fl. oz. of chilled coffee drink
   - Various juices (mixed vegetable juices, green juices, citrus juices)
   - Energy drink
   - Lemonade or ice tea drink
   - Sports drink
   - Chocolate-sweetened milk beverage
   - Yogurt smoothie
   - Milkshake

TIP Depending on the size of the class, you can do this activity as a demonstration, as a whole group, or split the class into groups and give each group their own set of materials.

2. Create and label resealable plastic bags with an amount of sugar that corresponds with the added sugars in each beverage. Table sugar is used to represent all of the different added sugars that might be found in the beverage.

   Look at the Nutrition Facts label on each beverage container to find the amount of Added Sugars (in grams) in one serving. If the container has more than one serving, multiply the number of servings by the amount of Added Sugars because this activity targets the amount of Added Sugars in the entire container.

   Number of servings X Added Sugars (grams) = Added Sugars (grams) in container

   One teaspoon of sugar has a mass of 4.2 grams. To determine the number of teaspoons of added sugars in the entire container, divide the number of grams of added sugars in the entire container by 4.2 grams/teaspoon.

   $$\frac{\text{Added Sugars (grams) in container}}{\text{4.2 grams/teaspoon}} = \text{Teaspoons of Added Sugars in container}$$

   If you have a metric scale, measure the grams of Added Sugars in the beverages.

3. Number the beverage containers.

4. Label each bag of sugar with a letter that corresponds to a numbered beverage container.

   Divide the class into small groups of 2 or 3.

   Make copies of the **How Much Added Sugar Is In Your Beverage**? worksheet for each group.

   Groups should have access to the FDA Fact Sheets: **Total and Added Sugars** and **Total Carbohydrates:** Interactive Nutrition Facts Label.

Although 100% fruit juice without added sugars can be part of a healthy dietary pattern, it is lower in dietary fiber than whole fruit. Dietary fiber is a dietary component of public health concern. At least half of the recommended amount of fruit should come from whole fruit, rather than 100% juice.

ADDED SUGARS IN BEVERAGES

INTRODUCTION

What students drink is important to their overall health and wellness. In this activity, students will become aware of the amount of added sugars in their beverages, which will help them learn how to make better beverage choices.

STUDENT PROCEDURE

What are your favorite beverages? Have one of the members in your group keep a list of your suggestions. In this activity, you will look at the added sugars in beverages. The amount of Total Sugars on the label includes both the sugars that are naturally present in the beverage plus sugars added during the processing of the beverage. Review your beverage list and identify which ones you think are high or low in added sugars. Discuss your ideas with the rest of your class.

1. Watch these two videos that introduce Total Sugars and Added Sugars:

   Added Sugar on the Food Label
   www.youtube.com/watch?v=PygjyyWvqhU

   Hy-Vee KidsFit at Home – Rethink Your Drink
   www.youtube.com/watch?v=eu9BgqCqIa8

2. Now that you have some background information about added sugars in beverages, you will do an activity to help you visualize how much added sugar is in various beverages. You will look at a variety of beverage containers/images and at bags that contain amounts of sugar that correspond with the amount of added sugars in each of those beverage containers. You will determine which of the bags of sugar you think represents the amount of Added Sugars in each beverage.

3. Write the name of each beverage in the left column of the data table. Select the bag of sugar that represents the amount of Added Sugars you think are in the beverage and record the letter on that bag in the column labeled: **Sugar Bag.**

4. When all groups have finished matching their beverages with sugar bags, discuss the results on your data table with the class.

Sample Beverages (showing Added Sugars and Total Calories)

Drink (12-ounce serving)	Total Calories	Added Sugars (Grams)	Added Sugars (Teaspoons)
Plain Water	0	0	0
Unsweetened Tea	0	0	0
Sports Drinks	97	20	5
Cafe Mocha	290	21	5
Chai Tea Latte	180	23	5.5
Sweetened Tea	115	29	7
Regular Soda	156	37	9
Lemonade	171	43	10
Fruit Drinks	238	59	14

Data Source: U.S. Department of Agriculture, Agricultural Research Service. 2020. *USDA Food and Nutrient Database for Dietary Studies and USDA Food Patterns Equivalents Database 2017-2018.* Food Surveys Research Group Home Page, ars.usda.gov/nea/bhnrc/fsrg.

5. Look at the Nutrition Facts labels for each beverage to see the grams of Total Sugars and Added Sugars on the labels. Record this information on your data table. Correct any wrong answers on your sheet.
   - Which beverages had the most Added Sugars?
   - Which findings surprised your group the most?
   - In which beverages were the amounts of Total Sugars and Added Sugars the same?

6. Read the **Total and Added Sugars** and **Total Carbohydrates** Fact Sheets and review the previous videos, *Added Sugar on the Food Label* and *Hy-Vee KidsFit at Home – Rethink Your Drink*, to answer the questions on your worksheet.

7. When all groups have completed their responses to the questions, review the answers with your class.

ADDED SUGARS IN BEVERAGES

REVIEW

Many people don't take into consideration the amount of added sugars they consume when they drink sugary beverages because the sugar is not visible. This activity provided a strong visual illustration (bags of sugar) of the amount of added sugars in various beverages.

When students become aware of the sugar in beverages, they can make better beverage choices.

SUMMARY

Choosing beverages carefully is just as important as choosing foods wisely. Many beverages contain added sugars. Use the Nutrition Facts label to help you determine the added sugars a beverage contains and help you make better beverage choices.

EXTENSIONS

Students could do one or more of the following activities:

1. Keep a beverage diary that includes a list of the beverages you drink and the nutrients obtained from the beverages.

2. Create posters to advertise healthy beverages.

   Review beverage advertisements and packaging; identify the marketing strategies used in the advertisements and packaging and how they influence beverage choices.

3. Look at the Nutrition Facts labels for beverages specific to your area. For example, sweet tea is a popular beverage in the southern states. Measure the added sugars in different kinds (brands) of sweet tea; compare the total sugars in these beverages with the total sugars in the beverages in the activity.

4. Use the Nutrition Facts labels on a variety of beverages to look at the other nutrients found in them. Discuss whether any of the beverages are nutrient dense for any of these nutrients.

RESOURCES

- *Added Sugar on the Food Label*
  youtu.be/PygjyyWvqhU
- *FoodData Central*
  fdc.nal.usda.gov
- *How Much Sugar Is In Our Drinks?*
  www.youtube.com/watch?v=wsMjLBL6aJE
- *Hy-Vee KidsFit at Home – Rethink Your Drink*
  www.youtube.com/watch?v=eu9BgqCqIa8
- *Interactive Nutrition Facts Label*
  Interactive Nutrition Facts Label (fda.gov)
- *My Drink Has How Much Sugar?*
  www.youtube.com/watch?v=ATIZkYp3EYM
- *The truth behind sugar-filled beverages*
  blogs.bcm.edu/2019/04/16/the-truth-behind-sugar-filled-beverages
- *Total and Added Sugars*
  www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_Total&AddedSugars_October2021.pdf
- *Total Carbohydrates*
  www.accessdata.fda.gov/scripts/interactivenutritionfactslabel/assets/InteractiveNFL_TotalCarbohydrate_October2021.pdf

UP NEXT

Now that you know about beverages that contain surprisingly large amounts of added sugars, let's look at everyday snacks to see how much sodium they really contain.

STUDENT WORKSHEET

ACTIVITY 1: HOW MUCH ADDED SUGAR IS IN YOUR BEVERAGE?

Name _____ Date _____ Class/Hour _____

This activity will help you to visualize how much sugar is in a beverage.

1. Make a list of your group's top 6 favorite beverages and then respond to these questions:

a. Which beverages on your list do you think have the most added sugars?

_____

b. Which do you think have the least added sugars?

_____

2. Watch these two videos that introduce Total Sugars and Added Sugars:

Added Sugar on the Food Label www.youtube.com/watch?v=PygjyyWvqhU

Hy-Vee KidsFit at Home – Rethink Your Drink www.youtube.com/watch?v=eu9BgqCqIa8.

3. Your teacher has prepared some numbered beverage containers and bags with various amounts of sugar that represent the amount of added sugars in the various beverages. As you look at the containers and bags of sugar, match the bags of sugar you think represents the amount of added sugars in each beverage.

SUGAR IN BEVERAGES DATA TABLE

BEVERAGE	SUGAR BAG (letter)	GRAMS OF ADDED SUGARS	GRAMS OF TOTAL SUGARS	PERCENT OF TOTAL SUGARS FROM ADDED SUGARS (i.e., ADDED SUGARS/TOTAL SUGARS x 100%)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

continued on next page

STUDENT WORKSHEET

HOW MUCH ADDED SUGAR IS IN YOUR BEVERAGE? (CONTINUED)

4. Look at the Nutrition Facts labels for the beverages in this activity and record the Total Sugars and Added Sugars for each on your Worksheet.

In which beverages were the amounts of Total Sugars and Added Sugars the same?

_____

5. Review the completed data table with your class to learn how well your group matched the beverages with the bags of sugar, and make corrections as needed.

a. List which beverages had the most Added Sugars:

_____

b. Which findings surprised your group the most?

_____

6. Read the **Total and Added Sugars** and **Total Carbohydrates** Fact Sheets and review the videos, *Added Sugar on the Food Label* and *Hy-Vee KidsFit at Home – Rethink Your Drink*, to answer the following questions.

a. Sugar belongs to a group of chemical compounds called carbohydrates. What are the different kinds of carbohydrates that are used by your body?

_____

b. Why are carbohydrates important for your health?

_____

c. The calories in sugary beverages are said to be "empty calories." What does this mean?

_____

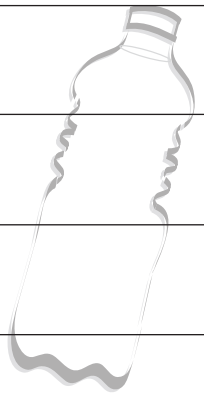
d. What is the difference between naturally occurring sugars and Added Sugars?

_____

e. For a 2,000-calorie daily diet, the Daily Value for Added Sugars is 50 grams. For a person with this diet, which of the drinks in this activity would you recommend and why?

_____

f. Why is milk called a "nutrient dense" food?



_____

g. Why is it important to read the labels on the foods and beverages you consume?

_____

h. What are some ways to limit your added sugars intake?

_____

7. When all groups have completed their responses to the questions, review the answers with the class.

BACKGROUND INFORMATION

PART 2

All About Sodium

Sodium is an essential nutrient primarily consumed as salt (sodium chloride). Sodium maintains a balance of body fluids, keeps muscles and nerves running smoothly, and helps certain organs work properly.

As a food ingredient, sodium has multiple uses that include curing meat, baking, thickening, retaining moisture, enhancing flavor (including the flavor of other ingredients, like making sweets taste "sweeter"), and as a preservative. Salt is one of the oldest forms of food preservation; people have been salting (and drying) meat to preserve it for thousands of years.

Salt and Sodium Defined

The words "salt" and "sodium" are often used interchangeably, but they do not mean the same thing. **Salt** (also known by its chemical name *sodium chloride*) is a crystal-like compound that is abundant in nature and is used to flavor and preserve food. **Sodium** is a mineral and one of the chemical elements found in salt.

Most people in the U.S. eat too much salt. Salt contains sodium, and too much sodium can raise blood pressure, which can have serious health consequences if not treated.

- The daily recommendation for sodium is less than 2,300 mg per day (and less than 1,800 mg per day for children ages 9 through 13).
- Americans consume on average 3,400 milligrams (mg) of sodium per day, which is nearly 50% more than the 2,300 mg limit recommended by federal guidelines for people 14 years and older. Recommended limits for children 13 and younger are even lower.

The **Nutrition Facts label** on food and beverage packages is a useful tool to make healthy dietary choices and monitor how much sodium is in a food. Many restaurant websites also have nutrient information for their menu items.

FDA requires nutrition information about a food that has a nutrient claim, such as "low sodium." FDA also requires certain nutrition information, including information on sodium and many other nutrients, to be available upon request for standard menu items in many restaurants and similar retail food establishments.

Most of the sodium consumed by Americans comes from the following foods:

- Deli meat sandwiches
- Pizza
- Burritos and tacos
- Soups
- Savory snacks (such as chips, crackers, and popcorn)
- Poultry
- Pasta dishes
- Burgers
- Egg dishes and omelets

NOTE: Keep in mind that nutrition sources may vary. Although scientists don't always agree, they must have data to support what they report. The key point to remember is that sodium comes mostly from processed foods and restaurant foods, not from what is added at the table.

DID YOU KNOW?

Salt

Salt is the main source of sodium for most people, but some common food additives like monosodium glutamate (MSG), sodium bicarbonate (baking soda), sodium nitrite, and sodium benzoate, also contain sodium and contribute (in lesser amounts) to the total amount of "sodium" listed on the Nutrition Facts label.

Surprisingly, some foods that don't taste salty can still be high in sodium, so don't use taste as a guide. For example, while some foods that are high in sodium taste salty – like pickles and soy sauce – there are also many foods, like cereals and pastries, that contain sodium but don't taste salty. Some foods that you may eat several times a day, such as breads, can add up to a lot of sodium even though an individual serving may not be high in sodium.

Sodium chloride, or salt, is approximately 40% sodium. Understand just how much sodium is in table salt and in food so you can take measures to control your intake.

1 teaspoon salt = 2,300 mg sodium

BACKGROUND INFORMATION

Check the Label!

High levels of sodium may seem "hidden" in packaged food, particularly when a food doesn't "taste" salty, but sodium is not hidden on the Nutrition Facts label! All you need to do is read the label.

- The Nutrition Facts label lists the Percent Daily Value (%DV) of sodium in one serving of a food.
- The DV for sodium is 2,300 mg, and less for people under 14 years old.
- One package of food may often contain more than one serving. So, if a package contains two servings and you eat the entire package, you have consumed twice the amount of sodium listed on the label (in other words, you've consumed double the %DV).

Use the %DV to compare sodium in different products. The %DV tells you whether a food contributes a little or a lot to your total daily diet.

- 5% DV or less of sodium per serving is low.
- 20% DV or more of sodium per serving is high.

Check the Package for Nutrient Claims

You can also check the food package to quickly identify foods that may contain less sodium. For example, look for foods with such claims as:

Salt/Sodium-Free	Less than 5 mg of sodium per serving
Very Low Sodium	35 mg of sodium or less per serving
Low Sodium	140 mg of sodium or less per serving
Reduced Sodium	At least 25 percent less sodium than the regular product
Light in Sodium or Lightly Salted	At least 50 percent less sodium than the regular product
No-Salt-Added or Unsalted	No salt is added during processing – but beware, these products may not be salt/sodium-free unless stated

DID YOU KNOW?

POTASSIUM CAN HELP

Research shows that increasing potassium intake can help manage blood pressure. Examples of foods higher in potassium include:

- Beans
- Dairy products (e.g., milk and yogurt)
- Fruits (e.g., apricots, bananas, kiwifruit, cantaloupe, and grapefruit)
- Juices (e.g., carrot and other vegetables juices, orange, pomegranate, and prune)
- Seafood (e.g., clams, pollock, and trout)
- Tomato products
- Vegetables (e.g., potatoes, sweet potatoes, beet greens, and spinach)

ACTIVITY 2: SODIUM IN SNACK FOODS

TIME One 45-minute class period

ACTIVITY AT A GLANCE

Students will look at the amount of sodium in their snacks, learn about the recommended amount of sodium they should consume on a daily basis, and how they can control the amount consumed.

TIME TO TUNE IN

Sodium on the Food Label (1:09)
www.youtube.com/watch?v=wY11olmXrOg

Eating Too Much Salt? 4 Ways to Cut Back ….Gradually (1:19)
www.youtube.com/watch?v=OG8RCuZNbeA

GETTING STARTED

MATERIALS

- **Snack Food** Cards (page 49)
- Snack food container/packages or images of snack foods that show the Nutrition Facts label
- Table salt
- Milligram scale
- Resealable plastic bags – 2 inches x 3 inches
- **Sodium in Snack Foods** worksheet
- Copies of FDA's Fact Sheet, **Sodium in Your Diet – Use the Nutrition Facts Label and Reduce Your Intake:** www.fda.gov/media/84261/download

TIP Check out *Nutrition in Action* on page 45 for Sodium and Percent Daily Value tips. It makes a great handout!

SODIUM IN SNACK FOODS

ADVANCE PREPARATION

1. Gather snack food packages/containers or images of snack foods that show the Nutrition Facts labels.

   The snack food examples in this activity are based on a single serving.

   - Banana (7 – 7.9 inches long); contains 1 mg sodium
   - Diet soda (12 ounce can); contains 40 mg sodium
   - Baked potato chips (1 ounce bag); contains 160 mg sodium
   - Regular potato chips (1 ounce bag); contains 170 mg sodium
   - Crunchy cheese snack (1 ounce bag); contains 250 mg sodium
   - Large fries (5.3 ounces); contains 400 mg sodium
   - Pretzels (1 ounce bag); contains 450 mg sodium
   - Vegetable juice (11.5 ounce can); contains 920 mg sodium
   - Sunflower seeds, kernels with salt on shells (1 ounce); contains 1,910 mg sodium

   Also include:

   - Recommended limit for sodium per day for those 14 and older: 2,300 mg
   - Average American intake of sodium per day: 3,440 mg
   - Amount of sodium needed by body per day: 1,500 mg

2. In this activity, table salt represents the amount of sodium in one serving of a snack or in an item that relates to sodium in a person's diet. To prepare resealable bags for each of the items: write the number of milligrams of sodium for each item on a bag. Use a milligram scale to measure the number of milligrams of sodium (salt) for each item and add the salt to one of the bags. Prepare a set of salt bags for each group of students.

3. Use USDA's FoodData Central website to find information on the Nutrition Facts label: fdc.nal.usda.gov

4. Prepare a set of **Snack Food** Cards and print a **Sodium in Snack Foods** worksheet for each group of students.

5. Divide class into small groups of 2 or 3.

PUBLIC HEALTH CONNECTION

According to the ***Dietary Guidelines for Americans***, reducing sodium intake is associated with a decreased risk of developing high blood pressure (hypertension) and cardiovascular disease. In a recent study, the CDC found that about 1 in 25 young people between 12 and 19 years of age has hypertension, and 1 in 10 has elevated blood pressure (previously called "prehypertension"). "Elevated blood pressure is above normal or ideal, but it is not high enough to be classified as "high." Hypertension is a known risk factor for heart disease, which kills about 655,000 Americans each year. Eating a high sodium, low potassium diet increases the risk for hypertension.

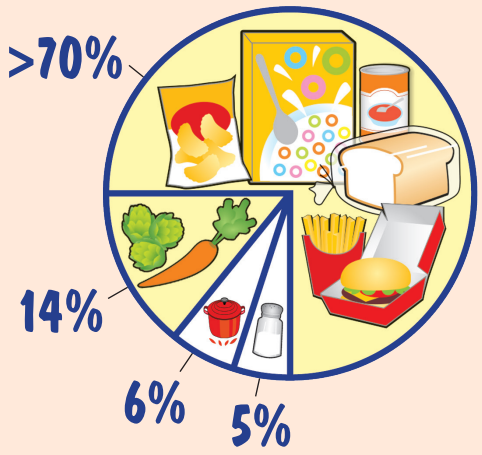
Source for CDC youth statistics:
www.cdc.gov/bloodpressure/youth.htm
Source for updated heart disease mortality:
www.cdc.gov/heartdisease/facts.htm

The Surprising Truth about Sodium Consumption

Despite what many people think, use of the salt shaker is not the main cause of too much sodium in your diet.

Americans' sodium intake breaks down like this:

- **Over 70%** comes from processed and packaged foods
- **14%** is naturally occurring in foods
  Source: www.heart.org/en/healthy-living/healthy-eating/eat-smart/sodium/hold-the-salt-infographic
- **6%** comes from adding salt to food while cooking and preparing food at home
- **5%** is added at the table



SODIUM IN SNACK FOODS

INTRODUCTION

Most Americans consume more sodium than they need. Sodium is primarily consumed as salt (sodium chloride). You have been studying the Nutrition Facts label; one of the nutrients on that label is sodium.

What is sodium and why do you think sodium is included on the label?

STUDENT PROCEDURE

1. Watch the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and read the FDA Fact Sheet, **Sodium in Your Diet**; then answer the questions on your worksheet.

2. Look at the Nutrition Facts label on the first page of the **Sodium in Your Diet** Fact Sheet. How much sodium is in the food represented on the label? Can you visualize what 430 milligrams might look like? A measuring teaspoon of salt has a mass of 2,300 milligrams (mg).

3. Savory snacks were listed on the **Sodium in Your Diet** Fact Sheet as one of the food categories that contributes to about 40% of the sodium you eat. Make a list of your favorite snacks. Share your list with the rest of the class.

   Circle the snacks you think contain the most sodium. Remember that a snack does not need to taste salty to contain a lot of sodium.

4. Your group will work with a set of **Snack Food** cards that contain pictures of snacks, or information about the amount of sodium in a person's diet. You will also have a set of bags of salt that represent the amount of sodium in the item on the cards. Your challenge is to match the picture on the card with the bag you think contains the amount of salt in each picture on the cards. When your group has finished matching all of the pictures with the corresponding salt bags, record the name of the item in the column labeled **Our Answer** on the **Sodium in Snack Foods Data Table.**

   When everyone has completed matching their salt bags with the pictures on the cards, review your answers with the class. If you had any incorrect responses, replace them with the correct answer on the data table.

5. When all of the groups have recorded the correct matches, complete the questions on your worksheet. You can review the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and the **Sodium in Your Diet** Fact Sheet for help with the answers.

6. Watch the video, *Eating Too Much Salt? 4 Ways to Cut Back…Gradually* www.youtube.com/watch?v=OG8RCuZNbeA and then answer the question on your worksheet.

7. Now look at your original list of snacks and discuss which would be the most healthy and why.

REVIEW

Sodium is an essential nutrient; Americans often get too much sodium by eating too much salt (sodium chloride). People should be mindful of their sodium intake to preserve a healthy heart and optimal health. We should read labels for the amount of sodium in the foods we eat and try to eat foods that are low in sodium.

NUTRITION IN ACTION

Start the Shake-Down: Easy Tips for Cutting Sodium

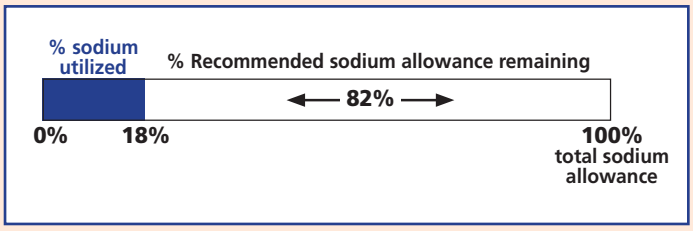
Learning about sodium in foods and exploring new ways to prepare foods will help you achieve your sodium goal. If you follow these tips to reduce the amount of sodium you are consuming, your "taste" for sodium will gradually decrease over time. Eventually, you probably won't even miss it!

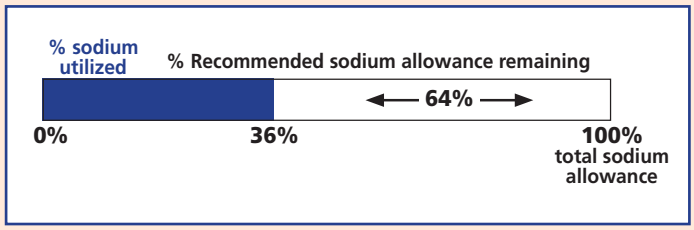
1. Read the Nutrition Facts label to see how much sodium is in the foods you want to eat. Most people should consume less than 100% of the Daily Value of sodium each day. Check the label for lower sodium choices and compare sodium in different brands of food products, such as frozen meals, packaged soups, breads, dressings/sauces, and snack foods. Choose those with lower sodium.
2. Prepare your own food when you can. Limit packaged sauces, mixes, and "instant" products, including flavored rice, instant noodles, and ready-made pasta whenever possible, and limit the amount of salt you add to foods when cooking, baking, or at the table.
3. Add flavor without adding sodium. Use herbs and spices instead of salt to add flavor to your foods. Try rosemary, oregano, basil, curry powder, cayenne pepper, ginger, fresh garlic or garlic powder (not garlic salt), black or red pepper, vinegar or lemon juice, and no-salt seasoning blends.
4. Get fresh foods when you can. Buy fresh or frozen meat and poultry, rather than canned, smoked, or processed meat and poultry such as luncheon meats and sausages. Also, check the label on packages of fresh meat and poultry to see if salt water or saline has been added.
5. Watch your veggies. Buy fresh, frozen (no sauce or seasoning), or low sodium or no-salt-added canned vegetables.
6. Give sodium the "rinse." Rinse sodium-containing canned foods, such as tuna, vegetables, and beans before eating. This removes some of the sodium.
7. "Un-salt" your snacks. Choose nuts, seeds or snack products (such as chips and pretzels) that are marked "low sodium" or "no salt added" – or choose carrot or celery sticks instead.
8. Consider your condiments. Sodium in condiments can add up. Choose light or reduced sodium condiments, add oil and vinegar to salads rather than bottled dressings, and use only a small amount of seasoning from flavoring packets instead of the entire packet.
9. Make lower-sodium choices at restaurants. Request that your meal be prepared without salt and that sauces and salad dressings be served "on the side"—and then use less of them.

A Quick Guide to %DV

- **5% DV or less per serving is low** for all nutrients, including those you want to *limit* (such as saturated fat, cholesterol, and sodium), as well as those that you want to consume in greater amounts (such as dietary fiber and calcium).
- **20% DV or more per serving is high** for all nutrients.

Balancing daily needs example:
If the label shows that the sodium in one serving is 18% DV, is that amount contributing a lot or a little to the Daily Value for sodium? What if you ate the whole package (for example, two servings)? You would then double that amount, eating 36% of the Daily Value for sodium. That means you should aim to get less than 64% DV (100%-36%=64%) from all of the other foods you eat that day—snacks and drinks included.





SODIUM IN SNACK FOODS

EXTENSIONS

Students could do one or more of the following activities:

1. Look at the saturated fat (grams) and the number of calories, as well as the amount of sodium and added sugars in each of the snack foods from the activity. Use these four sets of data to determine the most nutrient-dense foods (healthy snacks). Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium.

   One way to do this would be to:

   a) rank the foods from lowest to highest in the amount of sodium
   b) rank the foods from lowest to highest by the number of calories
   c) rank the foods from lowest to highest by saturated fat content.
   d) rank the foods from lowest to highest by amount of Added Sugars.

   For example: look at one sample of vegetable juice with 60 calories, no saturated fat, and 920 mg of sodium (40% DV). This would not be a good choice. If you consider a banana (with 105 calories, 1 mg of sodium, and 0 grams of saturated fat), then this would be a better choice. Create a data table with your findings.

2. Research the various claims that can be made about the amount of sodium in prepared foods, such as Low Sodium which means the product has to have 140 mg or less of sodium in one serving. Make a chart of the claims, what they mean, and give an example of a food with that claim.

SUMMARY

Sodium is an essential nutrient, but most Americans consume too much sodium. Be mindful of salt intake to preserve a healthy heart and optimal health.

- Eat foods that are good sources of potassium to improve health.
- Read the Nutrition Fact label to compare foods and determine the amount of sodium in the foods you eat.
- Choose foods with less sodium while shopping at the grocery store.

UP NEXT

Now that you know more about nutrients to get less of, let's plan a meal and pay attention to the nutrients to get more of.

RESOURCES

- *30 Foods High in Sodium and What to Eat Instead*
  www.healthline.com/nutrition/foods-high-in-sodium
- *Be Salt Smart*
  www.myplate.gov/tip-sheet/test-be-salt-smart
- *Cut Down on Sodium*
  www.dietaryguidelines.gov/sites/default/files/2021-11/DGA_SodiumFactSheet_2021-05-26_508c.pdf
- *Eating Too Much Salt? 4 Ways to Cut Back ….Gradually*
  www.youtube.com/watch?v=OG8RCuZNbeA
- *FoodData Central*
  fdc.nal.usda.gov.
- *Interactive Nutrition Facts Label*
  www.accessdata.fda.gov/scripts/interactivenutritionfactslabel
- *Sodium in Your Diet*
  www.fda.gov/food/nutrition-education-resources-materials/sodium-your-diet
- *Sodium on the Food Label*
  www.youtube.com/watch?v=wY11olmXrOg

STUDENT WORKSHEET

ACTIVITY 2: SODIUM IN SNACK FOODS

Name _____ Date _____ Class/Hour _____

What is sodium and why do you think sodium is included in the list of nutrients on the Nutrition Facts label?

1. Watch the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and read the FDA Facts Sheet **Sodium in Your Diet** and then answer the following questions:

a. According to the Fact Sheet what is sodium? _____

_____

b. How does this definition compare with your group's definition? _____

_____

c. How is sodium different from salt? _____

_____

d. Why is sodium called an essential nutrient? _____

_____

e. When you look at the Nutrition Facts label on the **Sodium in Your Diet** Fact Sheet, you see there are 430 mg (milligrams) of sodium in that food. If you could visualize 430 milligrams, what do you think it might look like?

_____

f. One teaspoon of salt contains 2,300 mg of sodium. What is the volume for salt (measured by teaspoon) with 430 mg of sodium, and how does this compare with your previous visualization for 430 mg of sodium?

_____

_____

2. In the **Sodium in Your Diet** Fact Sheet, savory snacks are listed as one of the food categories that contributes about 40% of the sodium you eat. Make a list of your group's favorite snacks.

a. _____

b. _____

c. _____

d. _____

e. _____

f. Which snacks on your list do you think contain the most sodium? Remember, a snack does not need to taste salty to contain a lot of sodium.

_____

3. Your **Snack Food** cards show pictures of snacks or information about the amount of sodium in a person's diet. Your teacher has shown you a set of bags of salt that represent the amount of sodium in the items on the cards. Match the picture on the card with the bag of salt that you think represents the amount of sodium in the product in the picture. When you finish matching all of the pictures with bags of salt, record the name of the item on the card in the column beside the amount of salt listed on the **Sodium in Snack Foods Data Table.**

continued on next page

STUDENT WORKSHEET

SODIUM IN SNACK FOODS (CONTINUED)

SODIUM IN SNACK FOODS DATA TABLE		
	SNACK FOOD	
MILLIGRAMS OF SODIUM	OUR ANSWER	CORRECT ANSWER
1 mg		
40 mg		
160 mg		
170 mg		
250 mg		
400 mg		
450 mg		
920 mg		
1,500 mg		
1,910 mg		
2,300 mg		
3,440 mg		

When everyone has completed their data tables, review your group's answers with the rest of the class. If you had any incorrect responses, write the correct answer in that column in the data table.

4. Complete the following questions. You can review the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and the **Sodium in Your Diet** Fact Sheet.

a. What did you find surprising about the snack foods? _____

_____

b. How can eating foods high in sodium affect your health? _____

_____

c. How much sodium does the body need in order to function each day? _____

d. How much sodium should we consume daily? _____

e. What is the average daily intake of sodium by Americans over 2 years of age? _____

f. From where does most of the sodium in your diet come? _____

g. Name 3 foods that you eat that are high in sodium. _____

h. Name 3 foods that you eat that are low in sodium. _____

5. Watch the video, *Eating Too Much Salt? 4 Ways to Cut Back…Gradually* www.youtube.com/watch?v=OG8RCuZNbeA.

Describe 3 things you will do to reduce the amount of sodium that you eat. _____

_____

6. Refer to your list of snacks. Which do you think are the most healthy and why? _____

_____

A

Crunchy Cheese Snack
(1 ounce)

B

Vegetable Juice
(11.5 ounces)

C

Pretzels
(1 ounce)

D

Diet Soda
(12 ounces)

E

Medium Banana
(7 - 7.9 inches)

F

Regular Potato Chips
(1 ounce)

G

Baked Potato Chips
(1 ounce)

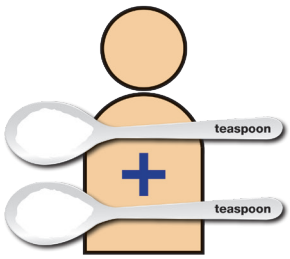
H

Sunflower Seeds
(1 ounce)

I

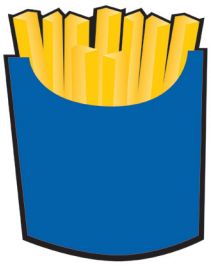
Recommended
Amount Per Day

J



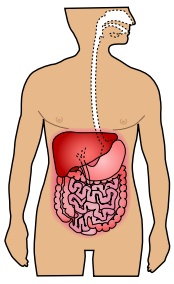
Average American
intake of Sodium

K



Large Fries
(5.3 ounces)

L



Amount of Sodium
Your Body Needs

STUDENT WORKSHEET SAMPLE ANSWERS
ACTIVITY 1: HOW MUCH ADDED SUGAR IS IN YOUR BEVERAGE?

Name _____ Date _____ Class/Hour _____

This activity will help you to visualize how much sugar is in a beverage.

1. Make a list of your group's top 6 favorite beverages and then respond to these questions:

a. Which beverages on your list do you think have the most added sugars? Cola, chocolate milk drink, large milk shake.

Answers will vary depending on beverages used; these are examples of common beverages chosen by students.

b. Which do you think have the least added sugars?

Energy drink, vitamin water, diet soda

2. Watch these two videos that introduce Total Sugars and Added Sugars:

Added Sugar on the Food Label www.youtube.com/watch?v=PygjyyWvqhU

Hy-Vee KidsFit at Home – Rethink Your Drink www.youtube.com/watch?v=eu9BgqCqIa8.

3. Your teacher has prepared some numbered beverage containers and bags with various amounts of sugar that represent the amount of added sugars in the various beverages. As you look at the containers and bags of sugar, match the bags of sugar you think represents the amount of added sugars in each beverage.

SUGAR IN BEVERAGES DATA TABLE

BEVERAGE	SUGAR BAG (letter)	GRAMS OF ADDED SUGARS	GRAMS OF TOTAL SUGARS	PERCENT OF TOTAL SUGARS FROM ADDED SUGARS (i.e., ADDED SUGARS/TOTAL SUGARS x 100%)
1 Water 10 oz		0 grams	0 grams	0%
2 Diet Cola – 12 oz		0 grams	0 grams	0%
3 Cola – 12 oz		39 ounces	39 ounces	100%
4 Cola – 20 oz		55 grams	55 grams	100%
5 Orange juice – 8 oz		0 grams	22 grams	0%
6 Sport Drink – 20 oz		34 grams	34 grams	100%
7 Low Fat Chocolate Drink – 14 oz		18 grams	39 grams	46%
8 Vitamin Water – 20 oz		27 grams	27 grams	100%
9 Canned Ice Tea – 23 oz		44 grams	44 grams	100%
10 Chilled Coffee Dink – 9.5 oz		22 grams	32 grams	69%
11 Berry Flavored Water – 16.9 oz		0 grams	0 grams	0%
12 Super Soda Fountain Drink – 44 oz		165 grams	165 grams	100%

continued on next page

STUDENT WORKSHEET SAMPLE ANSWERS

HOW MUCH ADDED SUGAR IS IN YOUR BEVERAGE? (CONTINUED)

4. Look at the Nutrition Facts labels for the beverages in this activity and record the Total Sugars and Added Sugars for each on your Worksheet.

In which beverages were the amounts of Total Sugars and Added Sugars the same?

The colas, sport drink, vitamin water, canned ice tea, super soda fountain drink

5. Review the completed data table with your class to learn how well your group matched the beverages with the bags of sugar, and make corrections as needed.

a. List which beverages had the most Added Sugars:

Super soda fountain drink, canned ice tea, low-fat chocolate drink, 20 ounce cola

b. Which findings surprised your group the most?

We were surprised by the high amount of added sugar in the sport drink and vitamin water.

6. Read the **Total and Added Sugars** and **Total Carbohydrates** Fact Sheets and review the videos, *Added Sugar on the Food Label* and *Hy-Vee KidsFit at Home – Rethink Your Drink*, to answer the following questions.

a. Sugar belongs to a group of chemical compounds called carbohydrates. What are the different kinds of carbohydrates that are used by your body?

The different kinds of carbohydrates are dietary fiber, sugar, and sugar alcohols.

b. Why are carbohydrates important for your health?

Carbohydrates are important for the body because they provide energy for the body.

c. The calories in sugary beverages are said to be "empty calories." What does this mean?

Empty calories are those obtained from foods containing few or no beneficial nutrients.

d. What is the difference between naturally occurring sugars and Added Sugars?

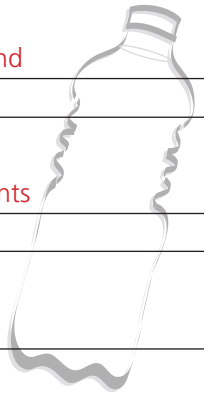
Natural sugars are found naturally in food such as fruit. Added Sugars include sugars that are added during the processing of foods (such as sucrose or dextrose), foods packaged as sweeteners (such as table sugar), sugars from syrups and honey, and sugars from concentrated fruit or vegetable juices.

e. For a 2,000-calorie daily diet, the Daily Value for Added Sugars is 50 grams. For a person with this diet, which of the drinks in this activity would you recommend and why?

We would recommend water or berry flavored water because there is no added sugar in these drinks.

f. Why is milk called a "nutrient dense" food?

Milk is a nutrient dense food because it has substantial amounts of vitamins, minerals, dietary fiber, and other substances that contribute to a healthy diet.



g. Why is it important to read the labels on the foods and beverages you consume?

It is important to read food labels so you can make wise choices to ensure that you will get the nutrients that your body needs.

h. What are some ways to limit your added sugars intake?

Added sugar intake can be limited by drinking water instead of vitamin water or sports drinks.

7. When all groups have completed their responses to the questions, review the answers with the class.

STUDENT WORKSHEET SAMPLE ANSWERS
ACTIVITY 2: SODIUM IN SNACK FOODS

Name _____ Date _____ Class/Hour _____

What is sodium and why do you think sodium is included in the list of nutrients on the Nutrition Facts label?

1. Watch the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and read the FDA Facts Sheet **Sodium in Your Diet** and then answer the following questions:

a. According to the Fact Sheet what is sodium? Sodium is a mineral and one of the chemical elements found in salt.

b. How does this definition compare with your group's definition? Answers will vary. Students' responses should include their definition.

c. How is sodium different from salt? Sodium is an element. Salt is a compound composed of sodium and usually chloride (table salt) and is abundant in nature.

d. Why is sodium called an essential nutrient? We need sodium for many body processes such as fluid balance, muscle contraction, and nervous system functioning.

e. When you look at the Nutrition Facts label on the **Sodium in Your Diet** Fact Sheet, you see there are 430 mg (milligrams) of sodium in that food. If you could visualize 430 milligrams, what do you think it might look like?
Answers will vary. Students' responses should include a reference to a specific amount.

f. One teaspoon of salt contains 2,300 mg of sodium. What is the volume for salt (measured by teaspoon) with 430 mg of sodium, and how does this compare with your previous visualization for 430 mg of sodium?
Students' responses should include comparison of their visualization with the 430 mg.
To figure this out, divide 430 mg by 2,300 mg, which equals 0.19 tsp (1/4 tsp = 0.25, and 1/8 tsp = 0.125)

2. In the **Sodium in Your Diet** Fact Sheet, savory snacks are listed as one of the food categories that contributes about 40% of the sodium you eat. Make a list of your group's favorite snacks.

a. Potato chips

b. Icing-filled chocolate cookies

c. Fish-shaped crackers

d. Crispy cheese snack

e. Pretzels

f. Which snacks on your list do you think contain the most sodium? Remember, a snack does not need to taste salty to contain a lot of sodium.
Answers will vary but should include snacks from the list above.

3. Your **Snack Food** cards show pictures of snacks or information about the amount of sodium in a person's diet. Your teacher has shown you a set of bags of salt that represent the amount of sodium in the items on the cards. Match the picture on the card with the bag of salt that you think represents the amount of sodium in the product in the picture. When you finish matching all of the pictures with bags of salt, record the name of the item on the card in the column beside the amount of salt listed on the **Sodium in Snack Foods Data Table.**

continued on next page

STUDENT WORKSHEET SAMPLE ANSWERS

SODIUM IN SNACK FOODS (CONTINUED)

SODIUM IN SNACK FOODS DATA TABLE		
	SNACK FOOD	
MILLIGRAMS OF SODIUM	OUR ANSWER	CORRECT ANSWER
1 mg		Banana
40 mg		Diet Soda
160 mg		Baked Potato Chips
170 mg		Regular Potato Chips
250 mg		Crunchy Cheese Snack
400 mg		Large Fries
450 mg		Pretzels
920 mg		Vegetable Juice
1,500 mg		Amount Needed by the Body
1,910 mg		Sunflower Seeds
2,300 mg		Recommended Daily Amount
3,440 mg		Average Intake by Americans

When everyone has completed their data tables, review your group's answers with the rest of the class. If you had any incorrect responses, write the correct answer in that column in the data table.

4. Complete the following questions. You can review the video, *Sodium on the Food Label* www.youtube.com/watch?v=wY11olmXrOg and the **Sodium in Your Diet** Fact Sheet.

a. What did you find surprising about the snack foods? Answers will vary. Students' responses should reference specific snack(s).

b. How can eating foods high in sodium affect your health? Foods high in sodium can increase the risk for high blood pressure

c. How much sodium does the body need in order to function each day? 1500 mg

d. How much sodium should we consume daily? 2300 mg

e. What is the average daily intake of sodium by Americans over 2 years of age? 3440 mg

f. From where does most of the sodium in your diet come? Most of the sodium comes from processed foods.

g. Name 3 foods that you eat that are high in sodium. Pizza, French fries, tacos

h. Name 3 foods that you eat that are low in sodium. Strawberries, grilled chicken, corn-on-the-cob

5. Watch the video, *Eating Too Much Salt? 4 Ways to Cut Back…Gradually* www.youtube.com/watch?v=OG8RCuZNbeA.

Describe 3 things you will do to reduce the amount of sodium that you eat. Eat less pizza, change the kinds of snacks, check food labels to see amount of sodium in the food.

6. Refer to your list of snacks. Which do you think are the most healthy and why? Answers will vary. Students' responses should reference looking at the Nutrition Facts label for nutrients in the snacks.

GLOSSARY

For the purposes of these materials, these terms are defined as follows.

Added Sugars includes sugars that are either added during the processing of foods, or are packaged as such (e.g., a bag of table sugar), and include sugars from syrups and honey, and sugars from concentrated fruit or vegetable juices.

Calories refer to the "energy" supplied from all food sources (fat, carbohydrate, protein, and alcohol).

Cholesterol is a waxy, fat-like substance produced primarily by the liver in both humans and animals. It is found in all cells of the body. Cholesterol in food is referred to as "dietary cholesterol" and is found only in animal products.

Dietary Fiber, or fiber, is sometimes referred to as "roughage." It is a type of carbohydrate made up of many sugar molecules linked together. But unlike other carbohydrates (such as starch), dietary fiber is bound together in such a way that it cannot be readily digested in the small intestine.

An **Essential Nutrient** is a vitamin, mineral, fatty acid, or amino acid required for normal body functioning that either cannot be synthesized by the body at all or in amounts adequate for good health, and thus must be obtained from a dietary source. Some food components that are not essential, such as dietary fiber, are still important for health

A **Healthy Eating Pattern** is the combination of foods eaten over time – at an appropriate calorie level – that provide variety and give you the nutrients you need to maintain your health, feel good, and have energy. These nutrients include protein, carbohydrates, fat, vitamins, minerals, and water.

The **Ingredient List** shows each ingredient in a food by its common or usual name in descending order by weight.

A **Lipid** is an organic compound that is oily to the touch and insoluble in water. Lipids include fats, oils, and waxes and are a source of stored energy. The terms lipid and fat are often used interchangeably.

Minerals are inorganic substances that are not made by living things, but they are important for human growth, development, and normal body functioning. Minerals are naturally found in soil and water and are absorbed by plants, which are then eaten by people and other animals. Examples of minerals are iron, calcium, and potassium. People obtain minerals from both the plant and animal products they eat.

Monounsaturated Fatty Acids (MUFAs) are fats that have one double bond between the carbon atoms and are usually liquid at room temperature. Plant sources rich in monounsaturated fats include vegetable oils (such as canola and olive oil), avocados, peanut butter, and most nuts.

Nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

Nutrients are substances in food that contribute to growth and health. Nutrients provide energy, cell-building and structural materials, and agents that regulate body chemistry.

%DV stands for **Percent Daily Value**, which is found on the Nutrition Facts label. It is a guide to how much a nutrient in a serving of the food contributes to a daily diet. For example, if the label lists 15% DV for calcium, it means that one serving of the food provides 15% of the calcium most people need each day.

Phytochemicals are chemical compounds produced by plants, generally to help them resist fungi, bacteria, and plant virus, as well as consumption by other pests.

Polyunsaturated Fatty Acids (PUFAs) are fats that have two or more double bonds between the carbon atoms and are usually liquid at room temperature. Primary sources of this fat are vegetable oils; fatty fish such as salmon, mackerel and sardines; and some nuts and seeds. Polyunsaturated fats provide essential fats.

Saturated Fat is found in higher proportions in animal products and is typically solid at room temperature. The exceptions are seafood (which contains a lower proportion of saturated fat compared to other animal products) and certain tropical plant oils, such as coconut oil, palm oil, and palm kernel oil (which contain a higher proportion of saturated fat compared to other plant products).

Saturated Fatty Acids are fats that have no double bonds between the carbon atoms. They are called "saturated" because all the spaces on the fat molecule that can hold a hydrogen atom do so and are "full" – that is, the molecule is "saturated" with hydrogen atoms. Saturated fats are usually solid at room temperature. Major sources include butter and beef fats, and tropical oils such as coconut or palm oils. The human body makes all the saturated fat that it needs, so it is unnecessary to consume additional saturated fat.

Serving Size is based on the amount of food that is customarily eaten at one time. All of the nutrition information listed on a food's Nutrition Facts label is based on one serving of that food.

Servings per Container indicates the total number of servings in the entire food package or container.

A **Triglyceride** is a compound formed from a glycerol and three fatty acid groups. Triglycerides are the main constituents of natural fats and oils.

***Trans* Fat** is an unsaturated fat, but it is structurally different than unsaturated fat that occurs naturally in plant foods. *Trans* fat has detrimental health effects and is not essential in the diet. Most *trans* fat is man-made (designed to improve texture and help food last longer).

Vitamins are organic substances made by plants and animals, which are then eaten by humans. There are 13 vitamins: vitamins A, C, D, E, K, and the B vitamins (thiamin, riboflavin, niacin, pantothenic acid, biotin, vitamin B6, vitamin B12, and folate). You can get all your vitamins from the foods you eat, but your body also makes vitamins D and K.

Whole Grains include the entire grain seed (usually called the "kernel"), which consists of the bran, germ, and endosperm — nothing has been added or taken away by processing. Whole grains are consumed either as a single food (such as wild rice or popcorn) or as an ingredient in food, such as in cereals, breads, or crackers.

Science and Our Food Supply: Using the Nutrition Facts Label to Make Healthy Food Choices was brought to you by...

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