1. What are carbohydrates made of?

2. What do carbohydrates convert into?

3. What kind of carbohydrate is better for you?

4. Which carbohydrate is faster to digest?

5. What is the difference between simple and complex carbohydrates?

6. Four grams of sugar equals what?

7. What are the three types of sugar discussed in the video?

8. An apple and a candy bar both contain sugar. Why then is an apple a better choice nutritionally?

9. Which is better for you, a whole grain bagel or white bagel? Why?
1. What are carbohydrates made of?
   \textit{Carbon, hydrogen, and oxygen.}

2. What do carbohydrates convert into?
   \textit{energy}

3. Which kind of carbohydrate is better for you?
   \textit{Complex carbohydrates}

4. Which carbohydrate is faster to digest?
   \textit{Simple carbohydrates}

5. What is the difference between simple and complex carbohydrates?
   \textit{Simple = single or double sugars, easy to digest, energy is short-lived}
   \textit{Complex = three, four, or more, longer to digest but energy lasts a long time, natural sugar}

6. Four grams of sugar equals what?
   \textit{1 teaspoon of sugar}

7. What are the three types of sugar discussed in the video?
   \textit{Added (artificial), natural, and starches.}

8. An apple and a candy bar both contain sugar. Why then is an apple a better choice nutritionally?
   \textit{The sugar in the apple is natural whereas the sugar in the candy bar is added.}

9. Which is better for you, a whole grain bagel or white bagel? Why?
   \textit{Whole grain bagel - Foods that contain natural sugars are better for us than those with added sugar because they also contain many other nutrients that are important to our health.}
The Facts about Carbohydrates

Fact 1: Carbohydrates are found in almost all foods in the diet with the exception of protein foods.

Fact 2: It is recommended that we get 55% of our diet from carbohydrates.
- For a teen girl who should consume about 2200 calories per day, 55% of her diet equals 1210 calories that should come from the carbohydrate group of foods.
- For a teen boy who consumes about 2800 calories per day, 55% would be 1540 calories that should come from the carbohydrate group.

Fact 3: Carbohydrates have 4 calories per gram.
- The Food Guide Pyramid suggests carbohydrates form the base of our diet and that means 6-11 servings from the grain group per day. That’s where we get our best carbohydrates. The problem is many teens eat lots of calories from the "other" group at the top. The carbohydrates at the top of the pyramid are empty of nutrients and mostly add just calories. The Mayo Clinic Healthy Weight Pyramid suggests only 75 calories per day should come from the carbs at the top of the pyramid.

Fact 4: Carbohydrates are found in two forms: simple or complex.
- The top of the Food Guide Pyramid is primarily simple carbohydrates, known as sugars. They can be added sugars as are found in high-sugar foods like cakes, pies, pudding, candy and soda. These foods have sugar as a main ingredient in their preparation. Eating cake or drinking soda is like eating several teaspoons of granulated table sugar. These simple carbohydrate foods give us a quick jolt of energy that often leaves us hungrier and with less energy than we originally had because they burn quick in our bodies. Many times these foods are said to be "empty calories" meaning they have no nutritive value — only calories.
- Simple carbohydrates can also be found in foods that are good for us. They are natural sugars that are part of a food’s basic makeup. Foods that contain natural sugars are better for us than those with added sugar because they also contain many other nutrients that are important to our health. Although these foods contain simple sugars, the additional nutrients such as fiber and fat also found naturally in them make them burn more slowly than sugary foods. They also provide needed vitamins, minerals and water for our body to use.
  - Fruits such as pears, grapes, apples, nectarines all contain natural sugar called fructose.
  - Many vegetables also contain natural fructose. Some examples are squash, beans, broccoli, carrots, lettuce, pea pods, tomatoes.
  - Dairy foods contain a natural sugar called lactose. Lactose can be found in cheese, milk, ice cream—most dairy products.
• The rest of the Food Guide Pyramid (with the exception of the meat/protein group), where we should make the majority of our choices, is made up of foods containing complex carbohydrates. Complex carbohydrates, also known as starches, are found in:
  - **Grain products** like crackers, rice, pasta, breads, and cereals such as oatmeal, Cheerios, Rice Krispies and Corn Flakes.
  - **Fruits and vegetables that contain fiber** along with their natural sugars. Some examples include strawberries, kiwifruit, oranges, bananas, apples, blueberries, potatoes, corn, peas, kidney beans and winter squash.

**Fact 4:** Fiber is often considered a carbohydrate.

- **Fiber** is the part of a grain kernel or a fruit or vegetable that is not digestible by our body. It can carry valuable nutrients but is not digested. Its value to our digestive system is its ability to clean us out! It leaves water, vitamins and minerals in our body and scrubs our digestive tract on the way through. It is recommended that we intake 25 grams of fiber per day. A high-fiber food contains 5 grams or more per serving.

<table>
<thead>
<tr>
<th>Food</th>
<th>whole-wheat cereal</th>
<th>broccoli</th>
<th>raisins</th>
<th>pasta</th>
<th>apple</th>
<th>potato, boiled</th>
<th>white rice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serving</td>
<td>1 cup</td>
<td>1 cup</td>
<td>1/2 cup</td>
<td>1 cup</td>
<td>medium</td>
<td>medium</td>
<td>1 cup</td>
</tr>
<tr>
<td>Fiber</td>
<td>5 g</td>
<td>5.4 g</td>
<td>5.4 g</td>
<td>4 g</td>
<td>3.2 g</td>
<td>1.4 g</td>
<td>0 g</td>
</tr>
</tbody>
</table>

**Fact 5:** The big fuss about low-carb diets is ongoing and probably never-ending.

- **Low-carb diets** were developed back in the 1800s. Experts debating the low-carb issue consider an idea called the glycemic index. It is a way of rating how quickly carbohydrates are digested and how quickly they get into the blood stream as sugar. Your body changes all carbohydrates, simple or complex, into sugar molecules that are either burned or stored. The slower this process, the better because the sugar enters the bloodstream more gradually. And that’s better for your digestive system as a whole. Let’s compare two carbohydrate foods:
  - The first is a chocolate bar. It is a simple carbohydrate that consists of almost 100 percent added sugar. It will give you a quick jolt of energy because it is digested quickly and gets into the bloodstream fast.
  - The second carbohydrate is a cup of spaghetti. Spaghetti will be digested much more slowly because it contains complex carbohydrates. They burn slowly and steadily.

- The jury is still out as to whether low-carb diets are really good for people who want to lose or maintain weight. Some proponents claim they result in rapid weight loss. Others claim they also can lead to feelings of low energy levels, constipation and, ultimately, kidney problems, heart disease, stroke, cancer and diverticulosis.

- What most do seem to agree on is that foods with natural sugar and carbs are better than foods with high amounts of added sugar. They also agree that calorie intake must be the same as calorie output or a person will gain weight. In other words, exercise!
Use the following equivalents table to calculate the amount of sugar in each item.

<table>
<thead>
<tr>
<th>4 grams of sugar</th>
<th>=</th>
<th>1 teaspoon sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 teaspoons</td>
<td>=</td>
<td>1 tablespoon</td>
</tr>
<tr>
<td>4 tablespoons</td>
<td>=</td>
<td>1/4 cup</td>
</tr>
<tr>
<td>5 tablespoons</td>
<td>=</td>
<td>1/3 cup</td>
</tr>
<tr>
<td>8 tablespoons</td>
<td>=</td>
<td>1/2 cup</td>
</tr>
<tr>
<td>16 tablespoons</td>
<td>=</td>
<td>1 cup</td>
</tr>
</tbody>
</table>

### Nutrition Facts

**Serving Size 1 pudding cup (99g)**

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories</th>
<th>90</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calories from Fat</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>% Daily Value*</td>
<td></td>
</tr>
<tr>
<td>Total Fat</td>
<td>0g</td>
<td>0%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>0g</td>
<td>0%</td>
</tr>
<tr>
<td>Sodium</td>
<td>140mg</td>
<td>6%</td>
</tr>
<tr>
<td>Total Carbohydrate</td>
<td>20g</td>
<td>7%</td>
</tr>
<tr>
<td>Sugars</td>
<td>15g</td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>2g</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Iron</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

Not a significant source of cholesterol, dietary fiber, vitamin A and vitamin C.

*Percent Daily Values are based on a 2,000 calorie diet.

**INGREDIENTS:** NON-FAT MILK, WATER, SUGAR, MODIFIED CORN STARCH, COCOA (PROCESSED WITH ALKALI), LESS THAN 2% OF: SALT, CARRAGEenan, ARTIFICIAL FLAVORS, COLOR ADDED.

CONTAINS: MILK

1 snack-size pudding cup

______ teaspoons sugar

or _____ Tbs + _____ tsp.

1 – 12 oz. can of soda

______ teaspoons sugar

or _____ Tbs + _____ tsp.

1 pouch fruit snacks

______ teaspoons sugar

or _____ Tbs + _____ tsp.

1 chocolate candy bar

______ teaspoons sugar or _____ Tbs + _____ tsp.
Calculate the Sugars
Answer Key

Use the following equivalents table to calculate the amount of sugar in each item.

<table>
<thead>
<tr>
<th>4 grams of sugar</th>
<th>=</th>
<th>1 teaspoon sugar</th>
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<td>1/4 cup</td>
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<tr>
<td>5 tablespoons</td>
<td>=</td>
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<tr>
<td>8 tablespoons</td>
<td>=</td>
<td>1/2 cup</td>
</tr>
<tr>
<td>16 tablespoons</td>
<td>=</td>
<td>1 cup</td>
</tr>
</tbody>
</table>

### Nutrition Facts

**Serving Size**: 1 pudding cup (99g)

<table>
<thead>
<tr>
<th>Amount Per Serving</th>
<th>Calories: 90</th>
<th>Calories from Fat: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Fat</strong>: 0g</td>
<td>% Daily Value: 0%</td>
<td></td>
</tr>
<tr>
<td>Saturated Fat 0g</td>
<td>% Daily Value: 0%</td>
<td></td>
</tr>
<tr>
<td>Sodium: 140mg</td>
<td>% Daily Value: 6%</td>
<td></td>
</tr>
<tr>
<td><strong>Total Carbohydrate</strong>: 20g</td>
<td>% Daily Value: 7%</td>
<td></td>
</tr>
<tr>
<td>Sugars: 15g</td>
<td>% Daily Value: 5%</td>
<td></td>
</tr>
<tr>
<td>Protein: 2g</td>
<td>% Daily Value: 2%</td>
<td></td>
</tr>
</tbody>
</table>

**Calcium** 4%  
**Iron** 4%

Not a significant source of cholesterol, dietary fiber, vitamin A and vitamin C.

*Percent Daily Values are based on a 2000 calorie diet.

**Ingredients**: Non-fat milk, water, sugar, modified corn starch (corn, xanthan gum, cellulose, natural & artificial flavors, salt, carrageenan, artificial flavors, color added).

**Contains**: Milk

1 snack-size pudding cup

3-3/4 teaspoons sugar

or

1 Tbs + 3/4 tsp.

---

1 pouch fruit snacks

3-1/4 teaspoons sugar

or

1 Tbs + 1/4 tsp.

---

1 chocolate candy bar

5-1/2 teaspoons sugar

or

1 Tbs + 2-1/2 tsp.

---

1 – 12 oz. can of soda

11-1/2 teaspoons sugar

or

3 Tbs + 2-1/2 tsp.
1. Carbohydrates are found in many of foods. Name three.
   ____________________________________________________
   ____________________________________________________
   ____________________________________________________

2. Dietary Guidelines suggest we make most of our food choices from the __________ group.

3. The only food group on the Food Guide Pyramid that does not contain any foods with carbohydrate in them is the ___________ group.

4. Low-carb diets were outlined as long ago as the 1880s in the _________________.

5. Carbohydrates = _____________ + _______________ + _______________ which leads to energy!

6. Proteins in the diet help build ____________ and keep your body in shape.

7. Carbohydrates give you ___________ and help you perform.

8. High-protein diets can be hard on the ________________.

9. Normally, teens take in around ____________ calories per day. It’s better for your body to ____________
   exercise than to ____________ calories.

10. Digestion = food  ➔  ________ in carbohydrates  ➔  glucose  ➔  ________ that powers cells.

11. _______________ carbohydrates contain 1-2 sugars and give quick, short-lived energy.
    _______________ contain 3-4 sugars and take longer to digest giving steady, longer-lasting energy.
12. There is also a third type of carbohydrate called ____________.

13. Simple carbs like “sweet goodies” have ____________ sugar and give us a ________ of energy.

14. Healthier carbs like an apple would contain are made up of ____________ sugars.

15. Although fiber is considered a carbohydrate, it has no ____________ and gives no ________________.

16. When considering the amount of added sugar in a food, remember that 4 grams of sugar is equal to ____________.

17. One can of soda could contain ________ teaspoons of sugar.

18. The problem with eating lots of snacks with added sugar is that they really ____________ your energy because they give you a quick jolt and then run out. If you fill up on sugary carbs, you get lots of ____________ calories and you have no room for healthier carbs.

19. What does research say about the healthiness of low-carb diets?

20. Instead of eliminating one entire food group from your diet, you should aim for ____________, choose ____________ foods and think about ________________ when planning your diet.

21. Complex carbohydrates from ________________ foods are better than foods like white bread or a white flour bagel.

22. Reading ________________ is important in determining how much added sugar is in a food.

23. Food labels don’t distinguish between natural and added sugars but looking at the first three ingredients and checking for words ending in ________ can give you a clue about the sugar content.

24. A great option for staying healthy is to get plenty of ________________.
1. Carbohydrates are found in many of foods. Name three.
   - Grains
   - Fruits and some vegetables
   - Sugary foods and some dairy foods

2. Dietary Guidelines suggest we make most of our food choices from the **grain** group.

3. The only food group on the Food Guide Pyramid that does not contain any foods with carbohydrate in them is the **protein/meat** group.

4. Low-carb diets were outlined as long ago as the 1880s in the **Letter on Corpulence**.

5. Carbohydrates = **carbon** + **hydrogen** + **oxygen** which leads to energy!

6. Proteins in the diet help build **muscles** and keep your body in shape.

7. Carbohydrates give you **energy** and help you perform.

8. High-protein diets can be hard on the **kidneys**.

9. Normally, teens take in around **2000** calories per day.
   It’s better for your body to **increase** exercise than to **decrease** calories.

10. Digestion = food ➔ **sugar** in carbohydrates ➔ glucose ➔ **energy** that powers cells.

11. **Simple** carbohydrates contain 1-2 sugars and give quick, short-lived energy.
    **Complex** contain 3-4 sugars and take longer to digest giving steady, longer-lasting energy.
12. There is also a third type of carbohydrate called ___fiber____.

13. Simple carbs like “sweet goodies” have ___added___ sugar and give us a ___jolt___ of energy.

14. Healthier carbs like an apple would contain are made up of ___natural___ sugars.

15. Although fiber is considered a carbohydrate, it has no ___nutrients___ and gives no ___energy___.

16. When considering the amount of added sugar in a food, remember that 4 grams of sugar is equal to ___1 teaspoon____.

17. One can of soda could contain ___10___ teaspooons of sugar.

18. The problem with eating lots of snacks with added sugar is that they really ___drain___ your energy because they give you a quick jolt and then run out. If you fill up on sugary carbs, you get lots of ___empty___ calories and you have no room for healthier carbs.

19. What does research say about the healthiness of low-carb diets? 
   Studies are inconclusive—we really don’t know.

20. Instead of eliminating one entire food group from your diet, you should aim for ___variety___,
   choose ___healthy___ foods and think about ___serving size___ when planning your diet.

21. Complex carbohydrates from ___whole grain___ foods are better than foods like white bread or a white flour bagel.

22. Reading ___food labels___ is important in determining how much added sugar is in a food.

23. Food labels don’t distinguish between natural and added sugars but looking at the first three ingredients and checking for words ending in ___ose___ can give you a clue about the sugar content.

24. A great option for staying healthy is to get plenty of ___exercise____.