Food Portions: A Guide for Teens

Part of healthy eating is knowing how big, or small, a serving size is. When reading Nutrition Facts Labels on packaging, or when planning meals, it is important to understand what a portion looks like. Using some simple visuals (including your own hand), you can better estimate the number of servings you are eating.

A. A half a cup of pasta or rice is approximately the size of a cupped hand.

B. 3 ounces of meat, fish, or poultry is approximately the size of the palm of your hand.

C. 1 cup of fruit, vegetables, or grain is approximately the size of a fist.

D. 2 tablespoons of peanut butter is approximately the size of a golf ball.

E. 1 ounce of cheese is approximately the size of four standard sized dice.
Nutrition Facts

Serving Size
This shows you what amount equals one serving of the product. Every other nutrient listed on the label is based on this amount.

Calories
Calories are a unit of energy. Calories in food come from carbohydrates, protein and fat. Because calories give us energy, we need them to be able to think and be active.

% Daily Value
This shows you the percentage of the recommended daily value for a nutrient that you get in one serving. A food that has more than 20% of the Daily Value of a certain nutrient is a good source of that nutrient.

Cholesterol
Cholesterol is a substance found only in animal products. Eating too much cholesterol is not healthy for your heart.

Total Carbohydrate
Carbohydrates give your muscles and brain energy. Certain types of carbohydrates are sometimes listed on the label.

Fiber: Helps with digestion and keeps you full between meals.

Sugars: Give you instant energy, but eating too much sugar can be unhealthy.

Footnote
This reminds us that all of the Daily Values come from the recommendations for a 2,000-calorie meal plan. Your needs may be higher or lower based on your height, genetics, and activity level. Keep in mind this is just an average, these daily value percentages (%) are not for everyone.
GOAL
Participants will be able to identify common nutrients based on their food sources and functions through this interactive game.

AGES
12-18
This game works best with 2-3 teams of approximately 4-15 students

ESTIMATED TIME
30-45 minutes

MATERIALS NEEDED
Nutrient Flashcards, Nutrients List, Nutrient Function List, watch with a second hand (or a timer)

PREPARATION
Copy and cut out the Nutrient Flashcards. (Optional: Game cards can be laminated if you plan on re-using the game.) Make one copy of the Nutrients List and post where it is visible to all participants. Make copies of the Nutrient Function List for all participants.

DIRECTIONS FOR FACILITATOR
1. Read the following introduction to participants:
   “Nutrients are substances that are found in the foods we eat. Our bodies need them to work properly so we can develop and grow.

   Each nutrient plays a special role in keeping our bodies healthy. Now we are going to learn about some specific nutrients that are found in the foods we eat. The name of this game is “Name that Nutrient”.

   2. Divide the group into 2 (or 3) teams and then toss a coin (or suggest another quick activity) to determine which team will go first.

   3. Read the following directions aloud:
      “Each team must decide who will be the first person to give clues. The designated person will then choose a Nutrient Flashcard. On the card is the name of the nutrient, and clues about what it does, or what foods it is found in. Without saying the name of the nutrient, the designated person should read one clue at a time to his/her fellow teammates after he/she is given the signal to start the game.

      For example, the clue giver might say: “I help your body absorb calcium.” The rest of the team would then take turns guessing what nutrient he/she is.
Each team has 1 minute to guess the nutrient. When a team guesses correctly, they earn 1 point. If a team is unable to guess the correct answer, they do not earn any points. The team with the most points at the end of the game wins.

4. After all rounds are played and the winning team is identified, pass out the Nutrient Function List for all participants to take home.

**DISCUSSION**
Discuss the benefits of the nutrients listed on the Nutrient List, and the important role they play in disease prevention.
# Name that Nutrient

## Nutrient List

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Nutrient</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALCIUM</td>
<td>POTASSIUM</td>
</tr>
<tr>
<td>CARBOHYDRATES</td>
<td>PROTEIN</td>
</tr>
<tr>
<td>DIETARY FAT</td>
<td>VITAMIN B-12</td>
</tr>
<tr>
<td>FIBER</td>
<td>VITAMIN C</td>
</tr>
<tr>
<td>FOLIC ACID</td>
<td>VITAMIN D</td>
</tr>
<tr>
<td>IRON</td>
<td>ZINC</td>
</tr>
<tr>
<td>YOU ARE: <strong>CALCIUM</strong></td>
<td>YOU ARE: <strong>VITAMIN C</strong></td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>★ I am needed for strong bones.</td>
<td>★ I am an antioxidant.</td>
</tr>
<tr>
<td>★ You can find me in dairy products and</td>
<td>★ You can find me in citrus fruits,</td>
</tr>
<tr>
<td>fortified juices.</td>
<td>strawberries, and spinach.</td>
</tr>
<tr>
<td>★ Not eating enough of me over a long</td>
<td>★ I help your body absorb iron.</td>
</tr>
<tr>
<td>period of time may lead to osteoporosis.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YOU ARE: <strong>PROTEIN</strong></th>
<th>YOU ARE: <strong>FIBER</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>★ I am made up of amino acids.</td>
<td>★ I help with digestion.</td>
</tr>
<tr>
<td>★ You can find me in meats, dairy</td>
<td>★ You can find me in fruits, vegetables,</td>
</tr>
<tr>
<td>products, beans, nuts, and fish.</td>
<td>and whole grains.</td>
</tr>
<tr>
<td>★ I am needed for building and</td>
<td>★ I can reduce your risk of cancer</td>
</tr>
<tr>
<td>maintaining muscle.</td>
<td>and diabetes.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YOU ARE: <strong>ZINC</strong></th>
<th>YOU ARE: <strong>POTASSIUM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>★ I am needed for a healthy immune system.</td>
<td>★ I am an electrolyte.</td>
</tr>
<tr>
<td>★ You can find me in shellfish and red</td>
<td>★ You can find me in bananas and</td>
</tr>
<tr>
<td>meat.</td>
<td>potatoes.</td>
</tr>
<tr>
<td>★ I am found in beans and whole grains.</td>
<td>★ I am needed for normal heart function.</td>
</tr>
</tbody>
</table>
YOU ARE: **IRON**

- I help carry oxygen in the blood.
- You can find me in steak and liver.
- Not eating enough of me may cause anemia.

YOU ARE: **VITAMIN B-12**

- I am needed to keep nerve cells and blood cells healthy.
- I am only found naturally in animal food products.
- Vegans may not get enough of me in their diets.

YOU ARE: **DIETARY FAT**

- I help your body make hormones and absorb certain vitamins.
- You can find me in oils and nuts.
- I am needed for healthy hair and skin.

YOU ARE: **VITAMIN D**

- I help your body absorb calcium.
- You can find me in fatty fish and in dairy products.
- I am the only vitamin made in the body with help from the sun.

YOU ARE: **FOLIC ACID**

- I am found in prenatal vitamins because I can help prevent certain birth defects.
- I help your body make DNA.
- I am naturally found as folate in dark green leafy vegetables.

YOU ARE: **CARBOHYDRATES**

- Your muscles and brain use me for energy.
- You can find me in grains, such as bread and cereal.
- I am found in foods with natural sugars, such as fruit and milk.
**CALCIUM**
- Is needed for strong bones
- Is found in dairy products and fortified juices
- Not eating enough over a long period of time may lead to osteoporosis

**PROTEIN**
- Is made up of amino acids
- Is found in meats, dairy products, beans, nuts, and fish
- Is needed for building and maintaining muscle

**ZINC**
- Is needed for a healthy immune system
- Is found in shellfish and red meat
- Is found in beans and whole grains

**VITAMIN C**
- Is an antioxidant and can help protect your body against cancer
- Is found in citrus fruits, strawberries, and spinach
- Helps your body absorb iron

**FIBER**
- Helps with digestion
- Is found in fruits, vegetables, and whole grains
- Can reduce your risk of cancer and diabetes

**POTASSIUM**
- Is an electrolyte
- Is found in bananas and potatoes
- Is needed for normal heart function

**IRON**
- Helps carry oxygen in the blood
- Is found in steak, liver, and fortified cereal
- Not eating enough may cause anemia

**DIETARY FAT**
- Helps the body make hormones and absorb certain vitamins
- Is found in oils and nuts
- Not eating enough may cause dry skin, coldness, or hair loss

**FOLIC ACID**
- Is found in prenatal vitamins because it can help prevent certain birth defects
- Helps the body make DNA
- Is found naturally as folate in dark green leafy vegetables

**VITAMIN B-12**
- Is needed to keep nerve and blood cells healthy
- Is only found naturally in animal food products
- Vegans may not get enough in their diets

**VITAMIN D**
- Helps the body absorb calcium
- Is found in fatty fish and dairy products
- Is the only vitamin made in the body with help from the sun

**CARBOHYDRATES**
- Is used for energy by the muscles and brain
- Is found in grains such as bread and cereal
- Is found in foods with natural sugars, such as fruit and milk
GOAL
Participants will be able to name 6 types of nutrients (*carbohydrates, proteins, fats, vitamins, minerals, and water*), explain their functions, and identify common sources of each.

AGES
12-18
This game works best with 6 or more participants

ESTIMATED TIME
20-30 minutes

MATERIALS NEEDED
Nutrient Function Posters, Nutrient Name Tags, tape, wall, or other place where posters can be hung, Nutrients 101 Answer Key

PREPARATION
Make copies of the Nutrient Function Posters and Nutrient Name Tags. *(Optional: name tags and posters can be laminated if you plan on re-using the game.)*

VARIATION
Instead of using poster size signs, you can write the name of each nutrient on 6 separate index cards and the different functions on 12 separate index cards, and play it as a table game. In this version, the object of the game is to match two functions with the correct nutrient. Participants can play on their own, or in teams.

DIRECTIONS FOR FACILITATOR:
1. Tape the 6 Nutrient Function Posters on the wall.

2. Read the following to the group:
   “We will be learning about six important nutrients that are essential for our bodies to function properly. In this game you will be asked to match each nutrient to its functions.”

3. Read the following to the group:
   “Raise your hand if you know the name of one of the six types of nutrients.” When a correct answer is given (*water, vitamins, minerals, carbohydrates, protein, or fat*) give the person who provided the answer the name tag for that particular nutrient. Continue until all six nutrients have been identified and all the tags have been given out. If participants are unable to identify all of the nutrients, ask for volunteers to take the remaining name tags.
4. Have the six individuals holding the name tags stand and go to the front of the room. Give them tape and ask them to tape their name tag on the Nutrient Function Poster that matches their nutrient. Tell them that they can ask the rest of the group for help.

5. After all 6 name tags have been taped to the posters, have everyone return to their seats.

DISCUSSION:
Tell the group that you will now review each nutrient using the Nutrients 101 Answer Key, so they can find out if they correctly matched the nutrients with their functions. As you review the nutrients, move name tags to the correct posters, as needed.
Nutrients 101

Water:
• Helps regulate your body temperature
• Makes up most of the fluid in your body

After reading the functions, explain that all non-caffeinated fluids such as water, seltzer, milk, juice, and caffeine-free soda count as fluids. Caffeinated drinks such as tea and coffee, are not as hydrating as water.

Vitamins:
• Help keep your immune system strong
• Some help you see well at night, help you heal, and may help protect your body against cancer

1. After reading the functions, ask the group if they can name a vitamin, and allow them to share answers.

2. Provide examples such as vitamin C, vitamin D, vitamin A, and the B vitamins. Explain that all vitamins have slightly different functions in the body.

3. Ask the group if they can name food sources of vitamins, and allow them to share answers.

4. Explain that fruits and veggies are great sources of vitamins. Citrus fruits are high in vitamin C, and carrots are high in vitamin A. Milk is a great source of vitamin D, and most B vitamins are found in foods from the grain group.

Minerals:
• These nutrients include: calcium, magnesium, sodium, potassium, iron, and zinc.
• Some are needed for building strong bones and regulating your heart beat

1. After reading the functions, ask the group if they can name any minerals and allow the group to share answers.

2. Provide examples such as calcium, iron, and zinc. Explain that all minerals have different functions in the body. For example, calcium is important for strong bones, iron is important for healthy blood, and zinc is important to help heal wounds.

3. Ask the group if they can name food sources of minerals, and allow them to share answers.

4. Explain that meats are high in minerals such as iron and zinc, and dairy food is high in calcium. Minerals are also found in fruits, veggies and some grains.

Carbohydrates:
• Provide energy to your brain and muscles
Most of your energy (food intake) should come from carbohydrates

1. After reading the functions, ask the group if they know what foods contain carbohydrates, and allow them to share answers.

2. Explain that all foods from the grains group such as bread, cereal, rice, pasta, muffins, crackers, pretzels, and popcorn contain carbohydrates. Explain that the healthiest foods from this group are high-fiber whole grains such as whole wheat bread, brown rice, and popcorn. Explain that sweets, fruit, and milk also contain carbohydrates.

Protein:
- Helps to build and repair body tissues (ex: hair, skin, nails, muscles)
- Supports your immune system

1. After reading the functions, ask the group if they know what foods contain protein and allow them to share answers.

2. Explain that protein is found in animal products such as steak, hamburger, pork, chicken, fish, and eggs. Dairy foods such as milk, yogurt, and cheese are also good sources of protein. Vegetarian sources of protein include beans, nuts, tofu, and veggie burgers.

Dietary Fat:
- Provides energy and helps keep you full
- Is needed to help you absorb vitamins A, D, E, and K.

1. After reading the functions, ask the group if they know what foods contain dietary fat and allow them to share answers.

2. Explain that oil, butter, margarine, salad dressing, sour cream, and cream cheese are all sources of dietary fat. Explain that nuts, nut butters (such as peanut butter), some dairy foods (such as whole milk and cheese), fatty fish (such as salmon), and avocados also contain dietary fat. Explain that the healthiest types of fat are those found in olive and canola oil, nuts, fish, and avocados.
Hello my name is Minerals
Hello my name is Carbohydrates
Hello my name is Water
Hello my name is Vitamins
Hello my name is Dietary Fat
Hello my name is Protein
★ PROVIDES ENERGY TO YOUR BRAIN AND MUSCLES

★ MOST OF YOUR ENERGY (FOOD INTAKE) SHOULD COME FROM THIS NUTRIENT
★ PROVIDES ENERGY AND HELPS KEEP YOU FULL

★ IS NEEDED TO HELP YOU ABSORB VITAMINS A, D, E, AND K
★ HELPS TO BUILD AND REPAIR BODY TISSUE

★ HELPS TO SUPPORT YOUR IMMUNE SYSTEM
★ MOST HELP KEEP YOUR IMMUNE SYSTEM STRONG

★ SOME HELP YOU SEE WELL AT NIGHT, HELP YOU HEAL, AND MAY HELP PROTECT YOUR BODY AGAINST CANCER
★ THESE NUTRIENTS INCLUDE: CALCIUM, MAGNESIUM, SODIUM, POTASSIUM, IRON, AND ZINC

★ SOME ARE NEEDED FOR BUILDING STRONG BONES AND REGULATING YOUR HEART BEAT
★ HELPS REGULATE YOUR BODY TEMPERATURE

★ MAKES UP MOST OF THE FLUID IN YOUR BODY
Extreme Meal Makeover

GOAL
Using the New England Dairy Council food models, participants will gain an understanding of how to make healthy changes to meals and snacks. You can access the New England Dairy Council’s website online at: www.newenglanddairycouncil.org. Once you are there, click “catalogue” to access Nutrition Education Materials. Participants will also learn about the types of additions and substitutions that can be made to improve the nutritional value of their daily menu.

AGES
12–18
Two teams (with at least one person per team) are needed for this game

ESTIMATED TIME
20-25 minutes

MATERIALS NEEDED
Meal signs, New England Dairy Council food models, Extreme Meal Makeover game cards, Answer Key (for facilitators)

PREPARATION
Order the New England Dairy Council food models online at www.newenglanddairycouncil.org, or by calling 800-939-0002. The models cost approximately $25.00, with an additional $5.00 for shipping. Make sure to order the models in advance, and ask the Council for an approximate arrival date.

Copy and cut out the Extreme Meal Makeover game cards. (Optional: Game cards can be laminated if you plan on re-using the game.) Make one copy of Answer Key for facilitators.

Create the following 4 piles of food models:
• Breakfast: Bran flakes, blueberries, corn flakes, egg, orange, orange juice, yogurt, donut
• Lunch: Baby carrots, grapes, juice box, milk (carton), peanut butter and jelly sandwich, potato chips, and whole wheat bread
• Snack: Cookies, drinkable yogurt, popcorn, string cheese, and soda
• Dinner: Black beans, brown rice, brownie, corn, fried chicken, iced tea, milk (glass), pudding, roasted chicken, and white rice

DIRECTIONS FOR FACILITATOR:
1. Split the participants into 2 teams.

2. Explain the following directions to
all participants:
The game will consist of 4 rounds: breakfast, lunch, snack, and dinner. At the beginning of each round, the meal sign that corresponds with that round will be presented. Teams will take turns drawing the Extreme Meal Makeover cards for that meal.

Start with:

- **Breakfast**: Start with cornflakes, OJ, donut (other foods will be used in the makeover challenge)
- **Lunch**: Start with peanut butter and jelly sandwich, juicebox and chips
- **Snack**: Start with soda and cookies
- **Dinner**: Start with fried chicken, corn, iced tea, white rice and brownie

One team member will read the “makeover challenge” and the multiple choice questions. The team will then be given 30 seconds to discuss possible answers. One representative will then announce the team’s answer. Have the team use the food models to show the changes that they would make in the makeover challenges.

3. After the representative announces the team’s answer, check it against the Answer Key, and review the correct answers with all participants.

3. Continue this process for each team.
Extreme Meal Makeover
Answer Key

BREAKFAST

Trans Fat: (C) Because some donuts are deep fried, they may be high in trans fat. Dairy foods, such as yogurt, fruits (such as blueberries), juices (such as orange juice), and cereals don’t contain trans fats.

Fiber: (D) Fruits (such as oranges and blueberries) and whole grains (such as bran cereal) are good sources of fiber.

Protein: (D) Eggs and yogurt are good sources of protein. Bran flakes are a healthy alternative to corn flakes, but are not high in protein.

Calcium: (C) Dairy foods such as yogurt are high in calcium. Fruits are healthy foods, but don’t contain any calcium. The only way to get calcium from the fruit group is to drink calcium-fortified orange juice.

LUNCH

Calcium: (A) Dairy foods such as milk are high in calcium. Foods such as grapes and baby carrots are healthy foods, but are low in calcium.

Fiber: (D) Fruits, veggies, and whole grains are all good sources of fiber.

Sugar: (D) Jelly and juice are both usually high in sugar. Whole wheat bread is a healthy alternative to white bread, but neither have much sugar.

Sodium: (C) Neither juice nor bread are high in sodium. Chips are usually high in sodium because they are covered in salt. Substituting baby carrots for chips would help lower the sodium in the lunch.

SNACK

Protein: (B) Water and popcorn are healthy choices, but neither have much protein. Dairy foods are high in protein, so having string cheese instead of cookies would help increase the protein in the snack.

Calcium: (D) Unlike soda and cookies, both yogurt and string cheese are high in calcium.

Sugar: (D) Soda and cookies are both loaded with sugar. Water, string cheese, and popcorn are all low sugar options.

Fiber: (A) Popcorn is the only high fiber option listed. Water, string cheese, and yogurt are all healthy, but do not contain fiber.

DINNER

Trans Fat: (B) Fried foods (such as fried chicken) usually have trans fat, so having roasted chicken is a healthier option.

Protein: (D) Beans, milk, and pudding (because it is made with milk) are all high in protein.

Fiber: (D) Beans and brown rice are both high fiber foods. Milk is a healthy drink, but does not have any fiber.

Calcium: (A) Brown rice, beans, and roasted chicken are healthy foods, but don’t have a lot of calcium. Pudding is a good source of calcium because it is made with milk.
MAKEOVER CHALLENGE: 
**BREAKFAST**

**MAKE THIS MEAL LOWER IN UNHEALTHY TRANS FAT**
A) Have an orange instead of OJ
B) Have bran flakes instead of corn flakes
C) Have a yogurt instead of the donut
D) Add blueberries to the cereal

**MAKEOVER CHALLENGE: BREAKFAST**

**MAKE THIS MEAL HIGHER IN FIBER**
A) Have an orange instead of orange juice
B) Have bran flakes instead of corn flakes
C) Add blueberries to the cereal
D) All of the above

**MAKEOVER CHALLENGE: BREAKFAST**

**MAKE THIS MEAL HIGHER IN PROTEIN**
A) Add an egg to the meal
B) Have a yogurt instead of the donut
C) Have bran flakes instead of corn flakes
D) Both A and B

**MAKEOVER CHALLENGE: BREAKFAST**

**MAKE THIS MEAL HIGHER IN CALCIUM**
A) Have an orange instead of orange juice
B) Add an egg to the meal
C) Have a yogurt instead of the donut
D) Add blueberries to the cereal
MAKEOVER CHALLENGE: LUNCH

MAKE THIS MEAL HIGHER IN CALCIUM
A) Have milk instead of the juice box
B) Have grapes for dessert
C) Have baby carrots instead of chips
D) Both A and C

MAKE THIS MEAL HIGHER IN FIBER
A) Have grapes for dessert
B) Have baby carrots instead of chips
C) Have whole wheat bread instead of white
D) All of the above

MAKE THIS MEAL LOWER IN SUGAR
A) Remove jelly from peanut butter and jelly
B) Have milk instead of the juice box
C) Have whole wheat bread instead of white
D) Both A and B

MAKE THIS MEAL LOWER IN SODIUM
A) Have milk instead of juice
B) Have grapes for dessert
C) Have baby carrots instead of chips
D) Have whole wheat bread instead of white
MAKEOVER CHALLENGE: SNACK

MAKE THIS SNACK HIGHER IN PROTEIN
A) Have a water instead of soda
B) Have a string cheese instead of cookies
C) Have popcorn instead of cookies
D) All of the above

MAKE THIS SNACK HIGHER IN CALCIUM
A) Have popcorn instead of cookies
B) Have a drinkable yogurt instead of soda
C) Have a string cheese instead of cookies
D) Both B and C

MAKE THIS SNACK LOWER IN SUGAR
A) Have water instead of soda
B) Have a string cheese instead of cookies
C) Have popcorn instead of cookies
D) All of the above

MAKE THIS MEAL HIGHER IN FIBER
A) Have popcorn instead of cookies
B) Have water instead of soda
C) Have a string cheese instead of cookies
D) Have a drinkable yogurt instead of soda
MAKEOVER CHALLENGE: DINNER

MAKE THIS MEAL LOWER IN TRANS FAT
A) Have beans instead of corn
B) Have roasted chicken instead of fried chicken
C) Have brown rice instead of white rice
D) All of the above

MAKE THIS MEAL HIGHER IN PROTEIN
A) Have beans instead of corn
B) Have milk instead of iced tea
C) Have a pudding instead of the brownie
D) All of the above

MAKE THIS MEAL HIGHER IN FIBER
A) Have milk instead of iced tea
B) Have beans instead of corn
C) Have brown rice instead of white rice
D) Both B and C

MAKE THIS MEAL HIGHER IN CALCIUM
A) Have a pudding instead of the brownie
B) Have brown rice instead of white rice
C) Have beans instead of corn
D) Have roasted chicken instead of fried chicken
Breakfast:

- CORN FLAKES
- DONUT
- ORANGE JUICE
Lunch:

- PEANUT BUTTER & JELLY SANDWICH ON WHITE BREAD
- POTATO CHIPS
- JUICE BOX
Dinner:

- Fried Chicken
- White Rice
- Corn
- Brownie
- Water
1. Did you like the presentation? □ Yes □ No
   Why?

2. Do you think the presenters were prepared? □ Yes □ No

3. Do you think this topic was valuable? □ Yes □ No
   Why, or why not?

4. List two important points that you remember from the presentation.
   1.
   2.

5. List one thing you plan to change (or you will do differently) because of what you learned during the presentation.

6. Do you have any suggestions for the speakers to improve the program?