

## Types of Nutrients We Need

### CARBOHYDRATES

Major source of energy

#### Why do we need carbohydrates?

- Gives all the cells in your body the energy they need.
- They let you run, jump, think, blink, breathe, and more.

#### What are sources of carbohydrates?

- Two different types: sugars and starches.
- Sugars are called **simple carbohydrates**. This is because your body digests them quickly and easily. Simple carbohydrates are usually sweet tasting, like cookies, candy, soda, and other sugary foods. Some come from nature—apples, bananas, grapes, and raisins; fruit cocktail, oranges, and pears; ice cream and frozen yogurt—both are good ways to get simple carbohydrates.
- Starchy carbohydrates have their own name, too: **complex carbohydrates**. These carbohydrates take longer to be digested than simple carbohydrates do. Complex carbohydrates are found in foods like bread, noodles, cereals, and rice, and in lots of tasty vegetables, such as corn, potatoes, and sweet potatoes.

### PROTEINS

Build up, keep up, and replace the tissues, such as muscles

#### Why do you need proteins?

- Protein's biggest job is to build up, keep up, and replace the tissues in your body.
- Your muscles, your organs, and even some of your hormones are made up mostly of protein.
- Making a big muscle? Taking a deep breath with your big lungs? Running down the street on your strong feet? You have got the power of protein!

#### What are sources of protein?

- Meat, chicken, fish, eggs, cheese, yogurt, milk, beans (lentils and peas), and nuts. Some proteins are leaner than others.
- Choose lean protein such as chicken breast, fish, and skim milk.

## Types of Nutrients We Need

### FATS

Fats store energy

Our bodies can make fat.

Fat insulates our bodies from the cold and provides some cushioning for our organs.

Fat sounds like it is always a bad thing that people avoid eating, but actually our bodies need some fat to work correctly.

### Why do we need fat?

- Fat is the body's major form of energy storage. Our bodies can make fat.
- Fat gives our bodies energy.
- Some fats help make up important hormones that we need to keep our bodies at the right temperature or keep our blood pressure at the right level.
- Fat helps us have healthy skin and hair.
- Fat is our bodies' very own storage and moving service: it helps vitamins A, D, E, and K hang out **and** get transported through the bloodstream when our bodies need them!

### What are sources of fat?

- Oils, butter, fried foods
- Fats come from many sources, but not all fats are created equal! **Saturated fat** is the main dietary cause of high blood cholesterol. It is found in foods from animals, such as beef, pork, bacon, butter, cream, cheese, and milk, and some foods from plants such as coconut, cocoa butter, and palm and canola oils.
- **Hydrogenated fat** is found in processed foods that undergo a chemical process called hydrogenation. The common foods with hydrogenated fats are margarine and shortening. This type of fat also raises blood cholesterol. *Trans*-fatty acids are also formed during this process of hydrogenation, and they may raise cholesterol levels even more than saturated fats.
- **Unsaturated (polyunsaturated and monounsaturated) fats** are found mainly in fish (salmon, trout, herring), nuts (walnuts, hazelnuts, pecans, peanuts), seeds, oils from plants (olive, canola, sunflower, soybean), avocados, and olives. Unsaturated fats may help lower your blood cholesterol level.

## Blood Sugar and Exercise

Before starting any new physical activity program, get your health care provider's OK to exercise.

Exercise can help you improve your blood sugar control.

Remember to check your blood sugar **BEFORE**, **DURING**, and **AFTER** exercise. This will help you track how your body responds to exercise and help you prevent rapid blood sugar changes.

### Check your blood sugar **BEFORE** physical activity

Think about these general guidelines:

- **Lower than 100 milligrams per deciliter (mg/dL).** Your blood sugar is too low to exercise. Eat a small snack containing carbohydrates, such as fruit or crackers, before starting your exercise.
- **100 to 250 mg/dL.** For most people, this is a safe blood sugar range. You may start your exercise!
- **250 mg/dL or higher.** Caution zone! Test your urine for ketones (compound made when your body breaks down fat for energy). Too many ketones indicate that your body doesn't have enough insulin to control blood sugar. Exercising with high levels of ketones may lead to a serious health complication, ketoacidosis, that needs immediate treatment. Wait for the levels of ketones to come down before exercise.
- **300 mg/dL or higher.** Do not exercise! Your blood sugar may be too high and is putting you at risk for ketoacidosis. Wait for the levels of ketones to come down before exercise.

### Watch for symptoms of low blood sugar **DURING** physical activity

Your blood sugar may change during exercise. If you are feeling shaky, dizzy, faint, or confused or have changes in coordination or vision, stop exercising and eat or drink something to raise your blood sugar level. Check your blood sugar and recheck it again 15 minutes later after your snack.

### Check your blood sugar **AFTER** physical activity

After exercise, check your blood sugar immediately. Exercise uses up reserve sugar stored in your liver and muscles. Your body will rebuild these stores by taking sugar from your blood. The longer you exercise, the longer your blood sugar will be affected.

Source: Mayo Clinic. (2009). *Diabetes and exercise: When to monitor your blood sugar*. Available online at <http://www.mayoclinic.com/health/diabetes-and-exercise/DA00105>

## Nutrient Game Answers

Foods that are **high in fat** are in **bold**:

Skim milk	<b>Chicken*</b>
Tomato	Cereal
<b>Hamburger</b>	<b>Whole milk</b>
<b>Eggs</b>	<b>French fries</b>
<b>Peanut butter</b>	Apple

\*Chicken breast is low in fat, but chicken with skin on and dark meat such as legs and wings are high in fat.

Foods that are **high in protein** are in **bold**:

<b>Chicken</b>	<b>Cheese</b> (also high in fat)
Green beans	Pasta
<b>Tuna</b>	Orange juice
<b>Skim milk</b>	Crackers
Cucumber	<b>Eggs</b>

Foods that are **high in carbohydrates** are in **bold**:

<b>Orange juice</b>	Cheese
<b>Cereal</b>	<b>Crackers</b>
Eggs	Chicken
<b>Spinach</b>	<b>Skim milk</b>
<b>Pasta</b>	<b>Rice</b>

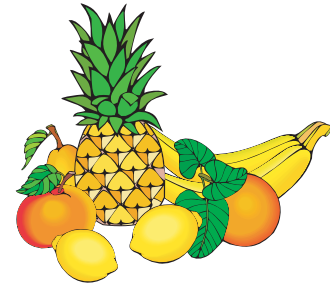
# What Nutrients Do We Need for Physical Activity?

## CARBOHYDRATES

Major source of energy

**Eat more of these:** apples, bananas, grapes, raisins, fruit cocktail, oranges, and pears.

**Eat these only once in a while:** ice cream, frozen yogurt, candy, and cookies



**Sources:** bread, noodles, cereals, rice, and all veggies, such as corn, potatoes, and sweet potatoes

## PROTEINS

Build up, keep up, and replace such tissues as muscles

**Lean protein:** chicken breast, fish, low-fat yogurt and milk, beans (lentils and peas), and nuts.

**High-fat protein:** red meat, eggs, and cheese.



## FATS

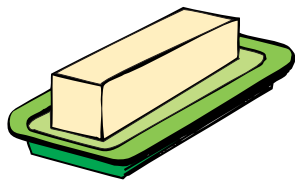
Energy storage.

Our bodies can make fat.

Fat insulates our bodies from the cold and provides some cushioning for our organs

Fat helps us have healthy skin and hair.

**Sources:** cookies, chocolate, eggs, cheese, fast food, hamburgers, and french fries.



## Participant Game: What Nutrients Do We Need?

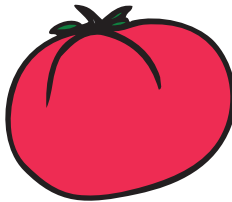
*Directions:* Circle the foods that are high in fat.



Skim milk



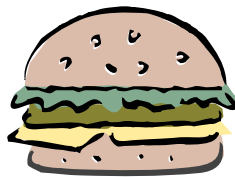
Chicken



Tomato



Cereal



Hamburger



Whole milk



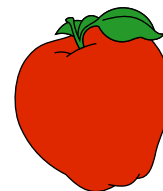
Eggs



French fries



Peanut butter



Apple

**Participant Game: What Nutrients Do We Need?**

*Directions:* Circle the foods that are high in protein.



Chicken



Cheese



Green beans



Pasta



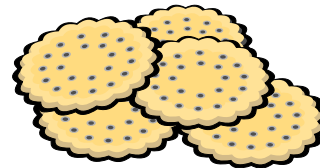
Tuna



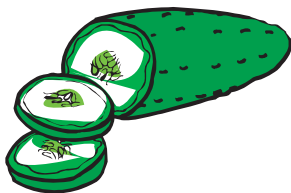
Orange juice



Skim milk



Crackers



Cucumber



Eggs

# Participant Game: What Nutrients Do We Need?

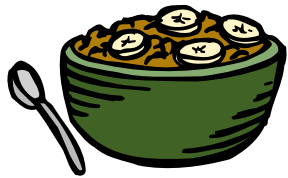
*Directions:* Circle the foods that are high in carbohydrates.



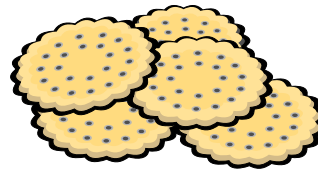
Orange juice



Cheese



Cereal



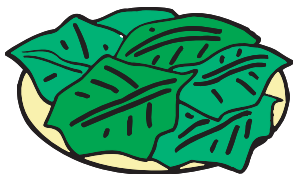
Crackers



Eggs



Chicken



Spinach



Skim milk



Pasta



Rice