

## LESSON 18



# Hunting for Healthy Fat

## Background

Fat is a necessary part of our diets. Fat makes food taste good, and it helps in the absorption and transportation of fat-soluble vitamins, such as vitamins A, D, E, and K. In addition, components of fat are involved in other important body functions such as maintaining healthy skin and hair. For decades, the low-fat diet was promoted as a way to lose weight, and food manufacturers reformulated their products to be reduced fat or fat free, often adding salt, sugar, or refined grains to compensate for differences in flavor and texture. Research has found, however, that low-fat diets are no better than any other type of diet at helping people control weight, nor do they boost health. The total amount of fat we eat isn't really linked with weight or disease. What matters most is the type of fat. The problem is that most Americans consume too much of the wrong types of fat (namely, saturated fat and trans fat). This is one of the main reasons so many people die of or are disabled by heart attacks in the United States. Every year, over half a million people die from heart disease in this country; heart disease is the leading cause of early death and disability in the United States.

Research suggests that the type of fat consumed rather than the total amount of fat consumed is more indicative of disease risk. High intakes of saturated and trans fat increase the risk of heart disease. The good news is that eating fewer foods that contain unhealthy fat and eating more foods with healthy fat (namely, polyunsaturated fat and monounsaturated fat) helps reduce the risk of heart disease.

## Fat Facts\*

Healthy fat, meaning monounsaturated and polyunsaturated fat, can decrease the risk of heart disease. Foods high in monounsaturated fat include olive, canola, and peanut oils; almonds, peanuts, and hazelnuts; and avocados. Soybean, corn, sunflower, and cottonseed oils are rich in polyunsaturated fat. Fatty ocean fish and walnuts contain a special type of polyunsaturated fat (omega-3 fat) that is also very healthy.

Unhealthy fat, meaning saturated and especially trans fat, can increase the risk of heart disease. Saturated fat comes mainly from animal-based foods. These include dairy products such as milk, butter, and cheese (and foods made with them, such as pizza, cookies, and ice cream); red meat and lard; and palm oil and coconut oil. One way to minimize the intake of unhealthy fat is to cut back on red meat (especially processed red meat, such as bacon) and cheese, choosing healthy protein sources such as fish, poultry, nuts, and beans instead. When preparing food, we can use ingredients that contain healthy unsaturated fat instead of those high in saturated fat (e.g., sautéing vegetables in olive oil rather than butter).

Trans fat is formed when polyunsaturated vegetable oils are partially hydrogenated. This process turns the normally liquid oils into solid or semisolid fat. Trans fat is found in hard stick margarines, commercial baked goods and crackers, and many processed and fast foods. The consumption of trans fat is strongly associated with an increased risk of coronary heart disease, sudden death, and possibly diabetes.

The *Dietary Guidelines for Americans* recognizes the importance of reducing saturated fat intake and sets a daily limit of 10% of total daily calories from saturated fat. The American Heart Association recommends an even lower limit for saturated fat—less than 7% of total calories. The *Dietary Guidelines for Americans* also advises keeping trans fat consumption as low as possible. For practical purposes, that means avoiding trans fat. Although the dairy and protein food groups contain some foods that are high in saturated fat, these groups provide many healthy options from which to choose. Fish, poultry, and beans are all great sources of healthy protein that do not contain a lot of saturated fat.

\*Information in part from President and Fellows of Harvard College.

The same goes for grain-based foods. Although there are many healthy options, some grain-based foods contain high amounts of saturated or trans fat. Examples are muffins and pastries (these foods are often high in sugar as well). Food preparation is another way unhealthy fat can sneak into food. Frying fish in partially hydrogenated oil or sautéing vegetables in butter, for example, can add unhealthy fat to a dish. So it's best to choose healthy fat sources (such as olive, vegetable, or canola oil) for frying and sautéing.

Reading food labels is a good way to compare the fat and nutrient content of foods. The place to find out whether a food is relatively high or low in a nutrient is the % Daily Value (% DV) column on the nutrition facts label. The % DV for saturated fat is particularly important when making food decisions. If the % DV for saturated fat in an individual food is 5 or less, the food is considered low in saturated fat. Foods that have a % DV of 20 or more for saturated fat are considered high in saturated fat. The more foods chosen that have a % DV of 5 or less for saturated fat, the easier it is to stay within the saturated fat limit. The overall daily goal is to select foods that together have less than 100% of the DV for saturated fat. The % DV is based on a diet of 2,000 calories per day. A person's actual daily caloric needs vary depending on age, gender, and level of activity; for more information on caloric needs, see lesson 16, Keeping the Balance, part II.

There is no % DV for trans fat because it is unclear whether there is any safe level of intake. But food labels do list the number of grams of trans fat per serving. Keep in mind that products made with partially hydrogenated oils can still claim "0 grams trans fat" if the product contains less than 0.5 grams of trans fat per serving. These small amounts of trans fat can add up over the day. So make sure to watch out for the words *partially hydrogenated vegetable oil* in the ingredients list.\* Switch to an alternative product that does not contain partially hydrogenated oil, especially if it is a product you consume regularly.

*\*At the time of publication, the FDA banned the use of partially hydrogenated oils in food products, giving manufacturers three years to comply with the decision. This edition's messaging on avoiding trans fat from partially hydrogenated oils remains important guidance during the transitional period.*

### TEACHER INFORMATION: HOW IS % DAILY VALUE CALCULATED?

Although all food labels provide % DV for nutrients, it is good to know how to calculate these values. The following describes how the % DV for one nutrient (saturated fat) is calculated:

To calculate % DV for a particular food, divide the number of grams of saturated fat per serving by 22 and multiply by 100 to get a percentage (22 is used because it is recommended that a person eating a 2,000-calorie daily diet consume no more than 22 grams of saturated fat each day).

For example, 1 cup of whole milk has 5 grams of saturated fat:  $(5 \div 22) \times 100 = 23\%$ . Although 5 grams may not sound like much, just 1 cup of whole milk contains 23% of the DV for saturated fat for a person who eats 2,000 calories a day.

## Estimated Teaching Time and Related Subject Areas

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**Estimated teaching time:** 1 hour, 15 minutes

**Related subject areas:** math, science, art

## Objectives

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- Understand why fat is an important part of the diet.
- Identify foods that contain unhealthy saturated and trans fat from food label information.

## Materials

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- Chalkboard
- Food wrappers (including nutrition labels) from canned fruits and vegetables, soups, candy bars, desserts, and baked goods (collect some on your own and ask students to bring some from home; you may want to assign foods from different food groups to ensure a variety of food labels)
- Small opaque container and a small object (such as a cotton ball, a piece of paper, or a feather) to place in the container
- Overhead 18.1, Reading the Food Label
- Handout 18.1, Food Labels (select a sample from the food labels provided to copy to round out the collection of labels brought in by students)
- Handout 18.2, Reading the Food Label
- Worksheet 18.1, Can You Find It?
- Worksheet 18.2, Graphing Fat

## Procedure

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### Part I

1. Before class, place a cotton ball, a piece of paper, a feather, or another small object in a small, opaque, covered container.
2. During class, ask the students to guess the contents of the container (provide a few clues). Have them give reasons for their answers.
3. After several guesses have been given, say to the students: "Some of the foods we eat are like this container. They contain hidden ingredients that cannot be seen. Today, we're going to go on a hunt for foods that contain different types of fat."

### Part II

1. Ask the students to tell you where they might find fat in foods. Write the names of each food group (grains, fruits, vegetables, protein, and dairy) on the board, and have the students name some foods from each group that contain fat (both healthy and unhealthy). List foods that are not part of a food group, such as butter, margarine, olive oil, and salad dressing, separately.



## Part III

1. Distribute Handout 18.1, Food Labels, and actual food labels, food containers, or copies of food labels. If possible, hand out a wide variety of labels, including labels from canned and frozen fruits and vegetables, desserts, and frozen dinners.
2. Explain that food labels contain information that can help students make smart decisions about whether a particular food fits into the healthy and balanced diets they are trying to create.
3. Display Overhead 18.1 and distribute Handout 18.2 (both are titled Reading the Food Label) to the students. Explain that one thing food labels address is the amount and type of unhealthy fat (saturated or trans fat) contained in the food. Food labels also present other information, such as the number of calories a food provides, certain vitamins and minerals a food contains, and a list of ingredients in the food (with the most abundant ingredient listed first).
4. Name one of the foods for which there is a label, and before examining the label, have students guess whether the food contains fat and, if so, what type of fat it contains. Record their answers on the board before investigations begin.
5. Have students find the following information on one of the food labels:

Food name

Serving size

Saturated fat per serving (grams)

% Daily Value (% DV) of saturated fat

Trans fat per serving (grams)

Does it contain partially hydrogenated oil in the ingredients list? Yes/No

Explain that the % Daily Value of saturated fat can help the students figure out how much one serving of food contributes to their daily maximum allowance of saturated fat. If they add the % DVs of saturated fat of all the foods they eat in a day, it should total no more than 100%. Ask for volunteers to stand and state the % DV of saturated fat found on their food labels. As each student stands, record the food on the board and add the percentages until the total reaches 100%. Try different combinations of foods to see how quickly it can take to reach 100% or how long it can take when eating foods with little saturated fat. From this information, ask students to identify foods and food groups that contain foods that are low in saturated fat.

Also explain that there is no % DV for trans fat; trans fat should be avoided. Some foods may list “0 grams trans fat,” but still contain partially hydrogenated oils. So students should make sure to watch out for the words *partially hydrogenated vegetable oil* in the ingredients list. They should switch to an alternative product that does not contain partially hydrogenated oil, especially if it is a product they consume regularly.

6. Write on the board the following words: *bacon, steak, chicken, fish, butter, muffins, olive oil, canola oil, shortening, stick margarine, avocado, peanut butter, almonds, peanuts, cashews, guacamole, salad dressing made with vegetable oil, lunch meats, candy bars, hot dogs, pies, cheese, cakes, doughnuts, Twinkies, puddings, ice creams, and cookies*. Discuss foods that contain visible fat (fat that can be seen before, during, and after preparation). Have the students identify the foods with visible unhealthy fat (bacon, steak, butter, shortening, and stick margarine) and the foods with visible healthy fat (olive oil, canola oil, salad dressing made with vegetable oil). Point out that some foods may not appear to have fat in them but actually do have fat hidden inside (chicken, fish, and muffins). Have students identify the foods with hidden unhealthy fat (lunch meats, candy bars, hot dogs, pies, cheese, cakes, doughnuts,

- Twinkies, puddings, ice creams, cookies) and the foods with hidden healthy fat (almonds, peanuts, cashews, avocado, guacamole, fish).
7. Ask the students, “What are some foods that you know are prepared with fat or oils?” Responses may include french fries, doughnuts, pies, cakes, fried fish, fried chicken, stir-fries, and sautéed dishes.
  8. Have students describe food preparation processes involving fat. As each type of fat (e.g., butter, oil, lard, margarine) is mentioned, list it on the board (see the sample in table 18.1).
  9. Have students distinguish between cooking fat that comes from plants (olive oil, canola oil, corn oil, other vegetable oils) and cooking fat that comes from animal sources (butter, lard). Explain that these liquid, plant-based oils are a healthier choice for cooking than butter or lard. Discuss how partially hydrogenated oil is different from healthy plant-based oils, because the chemical process of hydrogenation changes the healthy oil into unhealthy trans fat.
  10. Explain to students that most of the time they should choose foods that contain healthy fat, such as nuts, fish, and avocados, or choose foods prepared with healthy fats, such as olive oil, canola oil, and other vegetable oils. They should limit foods that are high in unhealthy fat, such as red meat and bacon, and foods that are prepared with unhealthy fat, such as butter.
  11. Distribute Worksheet 18.1, Can You Find It? Have students (in pairs or small groups) examine various food labels and ingredients lists (using the labels they brought from home) and record the amount of saturated and trans fat in each food selection on the worksheet. Have them make bar graphs to compare the amounts of saturated and trans fat in various foods (use Worksheet 18.2, Graphing Fat, as a guide). If a food has 0 grams of trans fat, they should make sure to read the ingredients list and note whether it contains partially hydrogenated oil.

**TABLE 18.1 Food Preparation Processes**

What?	How prepared?	Using what?
French fries	Deep-fried	Partially hydrogenated vegetable oil, vegetable oil
Cake	Baked	Butter, vegetable oil
Fish	Fried	Vegetable oil (in restaurants, partially hydrogenated oil may be used), lard
Chicken	Stir-fried	Canola oil, peanut oil
Broccoli	Sautéed	Butter, olive oil, peanut oil

**Part IV**

1. Have the students identify foods low in saturated fat that have 0 grams of trans fat, and that do not contain any partially hydrogenated oil—foods they should choose to reduce the amount of unhealthy fat in their diets. Use the results from Worksheet 18.1 as a basis for this discussion.
2. Stress that students should not be fearful of fat. Remind them to enjoy foods with healthy fat, such as olive, canola, and other healthy plant-based oils; nuts and peanut butter; avocados; and fish. Foods that are high in saturated fat (also known as a “sometimes” foods) should be eaten rarely, if ever. On a regular basis, students should choose foods that are low in saturated fat and avoid trans fat.



## Part V

1. Have students look in their refrigerators and pantries at home and make a list of the foods they find that contain less than 5% of the DV for saturated fat per serving (they can use Worksheet 18.2 for this assignment), contain 0 grams of trans fat, and contain no partially hydrogenated oils in the ingredients list. A food with less than 5% of the DV for saturated fat per serving is considered to be low in saturated fat by the U.S. Food and Drug Administration (FDA).
2. Have students collect and make a collage of labels from foods with less than 5% of the DV for saturated fat, 0 grams of trans fat, and no partially hydrogenated oils in their ingredients. Encourage them to be creative in designing their collages and to add a message about nutrition and foods low in saturated fat appropriate for other students in their class or school. Display the collages for others to view.

## Extension Activity

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Play a game of 20 questions by taping a food label on each player's back. Instruct the students to walk around the room and ask yes or no questions to determine which foods are posted on their backs. Students should only ask one question at a time and then move to another player. Following are sample questions:

- Does my food contain fat?
- Is the fat visible?
- Does the food contain saturated fat?
- Does the food contain a high amount of saturated fat?
- Is the food from the dairy group?
- Is the food fried?