

# Lowering Fat in Your Diet

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## Objectives

Complete this lesson, and you will be able to:

- lower the fat content in recipes
- explain what cancer is and how it starts
- explain how the fat you eat may affect your risk of developing certain types of cancer
- estimate your daily fat intake

## Introduction: Lowering Fat Intake

Sunshine spinach salad, minestrone soup, banana bread, and no-bake peach pie. Different recipes for fruits and vegetables can add variety and color to your meals. Color and variety can make it easier to eat the recommended five servings a day. But these extra servings of fruits and vegetables need to be low in fat.

Eating more calories than we use each day leads us to gain weight. The fats in food are a major source of calories. Fats are found in vegetable oils, butter, margarine, eggs, dairy products, and meat. They are also found in seeds, nuts, and some beans. Look at the fact sheet called Sources of Fat and compare the fat content of some of the foods listed. Use that list as a guide for identifying the sources of fat in food mixtures, like casseroles.

Every time you eat a gram of fat, you eat 9 calories. That doesn't sound like much, but it adds up. A teaspoon of margarine contains 4 grams of fat, or 36 calories. A tablespoon a day equals 108 calories. That extra 108 calories a day can affect the size of your waistline. In addition, calories from fat are more likely to end up as body fat. Calories from carbohydrate or protein in food are less likely to be stored as body fat.

Most fruits and vegetables contain almost no fat. As a result, they are low in calories. Eating fruits and vegetables can also help reduce the amount of fat we obtain from other foods. Most of us stop eating when we feel full. Vegetables provide bulk in your stomach. They can help you feel full if you eat them *first* at a meal. This way you will eat less of the other foods containing fat.

Vegetables, however, can supply a lot of calories if they are served with sauces that contain fat. As you will see, it is possible to prepare appetizing vegetables using a low-fat sauce. Fruits can also supply lots of calories if baked into a pie or packed in a syrup. Plain fruit is low in fat.

This lesson will show you how to change traditional recipes to reduce your fat intake. The amount of fat you eat can affect your risk of developing cancer.

## Changing menus

Each of the following three dinner menus features two vegetables: potatoes and broccoli. These menus provide you with two to three servings out of the five you need for the day. If you have milk and a dinner roll, you have done a great job of including most of the food groups in your meal.

However, the three menus differ in the number of calories and grams of fat in each meal.† Recipes marked with an asterisk (\*) are included at the end of the lesson.

† Nutrient content is based on a generous serving of each item in the menu. For example, a serving of Chilled Broccoli with Lemon Dressing is 1 cup. Please note that the recipe given at the end of this lesson is analyzed for a serving of 1/2 cup.

**Menu A**

Broccoli with Cheese Sauce  
 Traditional Scalloped Potatoes  
 Meat Loaf  
 Carrot Cake

*1073 calories*

*64 grams fat/meal*

*54% calories from fat*

**Menu B**

Chilled Broccoli with Lemon Dressing\*  
 New Scalloped Potatoes\*  
 Meat Loaf  
 Carrot Cake

*843 calories*

*42 grams fat/meal*

*45% calories from fat*

**Menu C**

Chilled Broccoli with Lemon Dressing\*  
 New Scalloped Potatoes\*  
 Meat Loaf  
 Fruit Salad

*602 calories*

*23 grams fat/meal*

*35% calories from fat*

Let's compare Menus A and B. We can remove 230 calories and 22 grams of fat from Menu A. How? By changing the sauce on the broccoli and the ingredients in the scalloped potatoes.

We can remove another 241 calories and another 19 grams of fat from Menu B. We do this simply by changing the dessert. Menu C is the same as Menu B, except we have replaced the carrot cake with fruit salad.

Comparing these menus shows that:

- the amount of fat in a meal is determined by the recipes used.
- the way vegetables are prepared affects the amount of fat in them.
- one way to eat less fat is to lower the amount of fat in recipes.

**Changing recipes**

Let's look at the recipes in these menus and see what changes were made to lower fat (go to the recipe packet in this lesson).

Two methods were used to lower fat:

1. remove ingredients that are sources of fat, or
2. replace high-fat ingredients with low-fat ingredients.

**Broccoli Dish**

The Chilled Broccoli with Lemon Dressing in Menus B and C replaces the Broccoli with Cheese Sauce in Menu A.

The fat in the cheese sauce comes from margarine or butter, whole milk, and grated cheese. The only fat in the lemon dressing is the vegetable oil (see recipe). Switching to the lemon dressing reduces the amount of fat in the broccoli dish. The lemon dressing provides great taste and fewer calories.

You could prepare a lower-calorie cheese sauce. Use skim milk and low-fat cheese instead of whole milk and regular cheese. However, the lemon sauce saves you the most calories.

**Potato Dish**

The fat in a traditional scalloped potato recipe comes from butter or margarine and from whole milk or cream.

The amount of butter or margarine in the new recipe is four times less than in a traditional recipe. Skim milk also replaces whole milk or cream. The new recipe is a healthier choice because it contains less fat.

**The Dessert**

Vegetables like carrots, zucchini, or pumpkin are often used in cakes and dessert breads to help keep them moist. However, many recipes for these cakes and breads are high in fat. Try serving a low-fat version. The fat in most breads and cakes comes from eggs, oil or shortening, and milk products. Can you change your dessert bread recipe so that it is lower in fat? (See the Fact Sheet on cutting fat in cooking and baking for some hints.)

Using low-fat recipes can lower the calories you take in. Growing children or very active people will need to eat additional low-fat snacks to satisfy their hunger. Less active people will find that low-fat recipes can help them control their weight. Use the methods you learned in this lesson to change the recipes you try.



Reducing your intake of fat is one way to lower your risk for cancer. The section on Diet and Cancer explains why.

## Recipe Notes

The main sources of fat in each recipe have an asterisk (\*) next to them. This way you will be able to see how fat can be hidden in mixed dishes.

The Antipasto is a low-fat salad that can be used for a quick weekday meal if prepared on the weekend. It is lower in fat than traditional antipasto. The Lemony Chicken Kabobs show how broiling as opposed to pan frying can help reduce fat in a recipe.

The nutrient list for each recipe includes the amount of vitamins A, C, and E found in one serving of that recipe. The Reference Daily Intake (RDI), based on the U.S. Recommended Daily Allowance (USRDA), is used as the guideline on the nutrition label for vitamins A, C, and E. The RDI for vitamin A is 5000 International Units (IU), for vitamin C 60 mg, and for vitamin E 30 IU.

## Diet and Cancer: How Cancer Forms

Cancer is a group of cells growing out of control in the body. You are made of thousands of cells. A single cell grows by getting larger and splitting into two cells. If each cell in your body did this with no control, you would become a gigantic human blob. Normally, your body controls the growth of your cells. Then when you reach adult size, you stop growing. The number of cells no longer increases.

However, your body cannot control cancer cells. Cancer cells damage your body because they can outgrow normal cells. They rob normal cells of their nutrients and invade places in your body where they don't belong. This upsets normal body functions.

■ *Cancer starts from a single changed cell.*

Cancer starts when a single normal body cell is changed to a cancer cell. A substance called a carcinogen causes this change.

■ *A carcinogen is any substance that causes cancer.*

The carcinogen changes the makeup of that cell. The changed "parent" cell grows and splits into two "daughter" cells. All cells that come from these daughter cells could be cancerous. Examples of carcinogens are cigarette smoke and certain chemicals, like benzene.

■ *This change of a normal cell to a cancer cell is called "initiation."*

Your body's defenses work to prevent normal cells from changing to cancer cells. Your body can also destroy a cancer cell once it is produced. So the production of single cancer cells is not enough to cause cancer.

Most cancers are diagnosed when a tumor is detected or

when a body function changes. The change in body function often happens because cancer cells have spread throughout the body. A tumor is a mass of thousands of cells. A cancer cell must outgrow its neighboring normal cells before it can become a tumor or spread.

Substances called *promoters* help the cancer cell outgrow its neighbors. Cancer cells don't grow faster than normal cells. They just continue to grow for a longer period than normal cells do. They eventually outnumber the normal cells. As their numbers increase, these cancer cells may be exposed to more carcinogens. This may further alter the cancer cells. Finally, a full-grown tumor may form after more help from promoters.

■ *Two steps are necessary for cancer to form: initiation and promotion.*

The two steps require different amounts of time. Initiation may take only a day or two, while promotion can take many years. This is why it is hard to pinpoint the causes of cancer. The events that create the cancer cell may occur 10 to 20 years before cancer is diagnosed. Promoting substances have their effect during that 10 to 20 years.

## The role of fat in food

The fat in the food we eat appears to contribute to the risk of developing certain types of cancer. Fat helps cancer cells grow. So eating a lot of it increases the risk of developing certain types of cancers.

■ *Dietary fat is thought to be a promoter of breast, colon, ovarian, and prostate cancer.*

Eating less fat can reduce this risk of cancer. Americans eat about 34 percent of their daily calories as fat. This is considered a high-fat diet. The Committee on Diet and Health of the National Research Council has recommended that Americans reduce their daily intake of fat to 30 percent or less of their daily calories. Many other health organizations including the National Cancer Institute (NCI) agree with this recommendation. See question number 3 on the Information Sheet to figure out how to get 30 percent or less of your calories from fat.

Be careful not to reduce your fat intake too much. If you eat a very low amount of fat, the *type* of fat you eat may affect your cancer risk.

In animals fed low-fat diets, scientists have seen that polyunsaturated fat promotes cancer more than other types of fats (see the Fact Sheet: What's in Fat? for an explanation of polyunsaturated, monounsaturated, and saturated fat). This may reflect the cancer cells' need for an essential fatty acid found in polyunsaturated fats.

With animals fed higher-fat diets, the type of fat does not matter. This is because the need for that essential fatty acid has been met. The *amount* of fat may play a bigger role in high-fat diets. It is not clear if these results in animals have the same meaning for humans.

The current recommendation is to reduce the amount of fat you eat to 30 percent of your daily calories. You need to eat some fat each day to stay healthy. That's why health professionals do not recommend that you cut out all fat from your diet.

Fat serves some very important roles in your body:

- It helps you absorb certain vitamins.
- It helps build certain hormones.
- It provides cushioning for your body organs.
- It helps keep you warm.
- It serves as a high energy source.

Fat also improves the taste and smell of many foods.

Eliminating it would make meals pretty bland.

Eating more plain vegetables or serving vegetables with low-calorie sauces can help you *reduce* the amount of fat you eat. The menus included in the recipes provide enough fat to help you remain healthy.

### How much fat do you eat now?

Cancer is a disease that develops slowly over a period of years. Eating a lot of fat appears to increase your risk of developing some common types of cancer. Therefore, your food choices and habits can have an impact on your health.

Your personal taste for fat started in your childhood. If you have children, set them on a path to better health. Guide their taste toward low-fat foods. You may wish to change your own taste to a lower-fat diet.

You must first know how much fat you normally eat now if you want to have a lower-fat diet. Complete the Fat Screen Worksheet to help you determine where you stand now. Be as accurate as possible, and the results will give you a ballpark estimate of your fat intake.

A more accurate estimate would require that you keep a 4- to 7-day food diary. The diary would then be analyzed on a computer program. However, the Fat Screen results will help you decide if you need to change your food choices to lower your fat intake. Keep the results for use in Lesson 5.

### Warning

Do not feed infants (children under one year of age) any of the recipes in Eat Five that contain honey. You must substitute sugar for honey to make these recipes safe for infants. Honey can be contaminated with the spores of the bacterium, *Clostridium botulinum*. These spores can grow in the baby's intestine and poison the infant. The digestive tracts of older children and adults contain bacteria and acids that prevent these spores from growing.

Eat Five and thanks for completing this lesson!



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Issued in furtherance of Cooperative Extension Work, Acts of Congress May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture and the Pennsylvania Legislature. L.F. Hood, Director of Cooperative Extension, The Pennsylvania State University.

This publication is available in other media on request.

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College of  
Agricultural Sciences  
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# Information Sheet

## SOME COMMON QUESTIONS AND THEIR ANSWERS

- cholesterol level and cancer risk
- excess calories and cancer risk
- using nutrition labels to lower fat intake

### 1. What role does blood cholesterol level play in cancer risk?

Blood cholesterol refers to the amount of cholesterol in your bloodstream. (Dietary cholesterol is the cholesterol found in foods.)

High blood cholesterol doesn't appear to play a direct role in cancer risk. But some studies have found that blood cholesterol values below 160 mg/dl are associated with a slightly greater risk of certain cancers. These include cancers of the liver, pancreas, and lung. However, the risk is very small. At most, the risk is 2 in 10,000. One explanation for this increased risk of cancers may be that low blood cholesterol is the result of the cancer, not the cause of it. Another explanation is that certain cholesterol-lowering drugs may help increase the risk of certain cancers.

Both of these ideas are being studied.

### 2. What is the role of excess calories in cancer risk?

Underfed animals have less cancer and longer lives than animals that eat freely. Lowering calories inhibits tumors forming in the breasts and colons of rats. This occurs even if the low-calorie diet is high in fat.

It is much harder to study the effects of overfeeding on cancer in humans. However, studies indicate that overweight men and women are more at risk for certain types of cancers. Overweight women are at greater risk for ovarian, breast, uterine, gall bladder, and cervical cancer. Overweight men are at greater risk for colorectal and prostate cancer. The relationships between calories, body fat, and human cancer need further study. Most Americans would be wise to watch their weight until these relationships are clearly understood.

### 3. How can I use the nutrition label on packaged foods to lower my fat intake?

First determine how many grams of fat you can eat a day. This is based on 30 percent of your calorie intake. In the table at right, the lefthand column shows the calorie level, and the righthand column shows the grams of fat equivalent to 30 percent of that calorie level. Choose the number of calories you normally eat in a day from the first

column. For example, assume you eat 2000 calories a day. Go to the next column opposite 2000. This number, 65, is the amount of fat in grams you can eat to meet the 30 percent rule. This is your Daily Value for fat. If you eat 2400 calories a day, you can eat 80 grams of fat. If you eat 1600 calories, you should only eat 53 grams of fat. Choose the grams of fat that match your calorie intake. This is your fat budget.

Total daily calories	Grams of fat allowed in a risk-reducing diet (30% of calories from fat)
3000	100
2800	93
2600	87
2400	80
2200	73
2000	65 (67)*
1800	60
1600	53
1400	47
1200	40

\*The figures for grams of fat and saturated fat listed in the Nutrition Facts panel for a 2000-calorie diet are rounded off. The value in parentheses is the actual value.

Use the Nutrition Facts panel on the food label to help you manage your fat budget. Look at the example on the next page. This food has 13 grams of fat per serving. If you happen to eat 2000 calories, the Nutrition Facts panel tells you what percentage the 13 grams is of your fat budget of 65. That's because the % Daily Value is based on a 2000-calorie diet. The % Daily Value for total fat on this label is 20 percent based on 2000 calories (13 divided by 65 times 100 equals 20%). If you eat 2400 calories, the % Daily Value for fat is only 16 percent (13/80 x 100 = 16).

Regardless of your calorie intake, you can use the grams of fat listed to see how many grams of your fat budget you have left. If you eat 2000 calories, and ate a serving of this food, you would have 52 grams of fat left "to spend" that day on other foods (65 - 13 = 52). If your budget was 80 grams, eating a serving of this food would leave 67 grams for the day (80 - 13 = 67).

Even if you don't eat exactly 2000 calories, use the %

Daily Value for fat as a guide. If the % Daily Value for fat in a food you've eaten is high—20 percent or more—you might want to eat lower-fat foods the rest of the day. If the % Daily Value is low—no more than 10 percent—you can eat some higher-fat choices during the day and still stay within your fat budget.

It's also important to keep track of the saturated fat in the foods you eat. Lowering the amount of saturated fat you eat can reduce your risk of disease. Experts recommend we eat no more than 10 percent of our calories as saturated fat. Eating even less would be beneficial too.

In the table at right, the lefthand column shows the calorie level, and the righthand column shows the grams of saturated fat equivalent to 10 percent of that calorie level. If you eat 2000 calories a day, you would want to limit your saturated fat to 20 grams. The Nutrition Facts panel (below) says this food provides 5 grams of saturated fat per serving, or 25 percent of this saturated fat budget.

Total daily calories	Grams of saturated fat (10% of calories)
3000	33
2800	31
2600	29
2400	27
2200	24
2000	20 (22)*
1800	20
1600	18
1400	16
1200	13

\*The figures for grams of fat and saturated fat listed in the Nutrition Facts panel for a 2000-calorie diet are rounded off. The value in parentheses is the actual value.

## Nutrition Facts

Serving Size 1 cup (228g)  
Servings Per Container 2

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**Amount Per Serving**

**Calories** 260    Calories from Fat 120

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**% Daily Value\***

<b>Total Fat</b> 13g	<b>20%</b>
Saturated Fat 5g	<b>25%</b>
<b>Cholesterol</b> 30mg	<b>10%</b>
<b>Sodium</b> 660mg	<b>28%</b>
<b>Total Carbohydrate</b> 31g	<b>10%</b>
Dietary Fiber 0g	<b>0%</b>
Sugars 5g	
<b>Protein</b> 5g	

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Vitamin A 4%    •    Vitamin C 2%

Calcium 15%    •    Iron 4%

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\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

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Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

# Worksheet

## FAT SCREEN

Read through the list of foods below. How often do you eat any of these foods in a normal week? List the *average number of servings* of these foods that you have eaten in a week during the past month. Then complete the columns for each food that you eat regularly.

You may eat some foods less than once a week. For example, if you eat hamburgers twice a month, divide two hamburgers by 4 (number of weeks in a month). Use this number in the servings-per-week column, as shown in this example:

2 divided by 4 = 1/2 serving per week.

Be sure to consider your normal *serving size* carefully for an accurate estimate. You may want to measure some foods to be sure. Sample portion sizes are listed to help you with this task. Here is an example:

Food	Servings per week	x	Fat in grams (g)	=	Total grams
Milk, whole (1 cup)	14		8.5		119

In this example, 1 cup of milk was drunk two times a day. This was done every day for one week. Seven days a week times 2 servings a day = 14 total servings. There are 8.5 grams of fat in 1 cup of milk. Fourteen servings times 8.5 grams of fat per serving = 119 grams of fat from 14 cups of whole milk per week.

When you're finished, add up all the numbers in the "total grams of fat" column. This will tell you your total fat intake for the week.

Food group	Servings per week	x	Grams of fat per serving	=	Total grams of fat
<i>MEAT, EGGS</i>					
Hamburger, cheeseburger, one medium (about 3 oz)	_____	x	17	=	_____
Beef steaks, roast, one medium serving (about 4 oz)	_____	x	11	=	_____
Pork, including chops, roast (about 4 oz)	_____	x	13	=	_____
Hot dogs, 1 each	_____	x	13	=	_____
Ham, lunch meats, one slice (1 oz)	_____	x	8	=	_____

Food group	Servings per week	x	Grams of fat per serving	=	Total grams of fat
Eggs, 1 large	_____	x	6	=	_____
<i>BREADS, STARCHES</i>					
Doughnuts, cookies, cakes, pastry, 1 serving	_____	x	7	=	_____
White bread, rolls, bagels, etc. (including sandwiches), 2 oz or 2 slices	_____	x	2	=	_____
French fries, 1 medium portion	_____	x	9	=	_____
<i>DAIRY PRODUCTS</i>					
Milk, whole (beverage), 1 cup	_____	x	8.5	=	_____
Cheese, excluding cottage cheese or low-fat cheese, 1 oz or 1 slice	_____	x	7	=	_____
Margarine or butter, 1 tsp	_____	x	5	=	_____
<i>OTHER</i>					
Salad dressing, mayonnaise, 1 Tbsp	_____	x	5	=	_____
					Total grams _____

To find your estimated daily intake, divide your total fat intake for the week by 7.

Total intake \_\_\_\_\_ ÷ 7 = \_\_\_\_\_ grams fat per day

You may want to consider lowering the fat in your diet if your score is above 20 grams of fat per day. Use the hints in this lesson. If your score is 20 grams or less of fat per day, you are eating less fat than most middle-aged men and women.

This worksheet provides an *estimate* of the amount of fat you eat. It does this by looking at your pattern of eating *some* food sources of fat. The actual amount you eat is probably two to three times higher than this estimate. So if, according to this worksheet, you eat 30 to 40 grams of fat, you need to think about cutting down on fat.

A high score on this worksheet does not necessarily mean you make poor food choices. If you eat more calories than the average person, a score 21 grams of fat or more per day may be acceptable. Men and women doing heavy work and eating more than 2,000 calories per day could earn scores of 20 to 30 grams and still be within their fat budget.

# Fact Sheet

## CUT THE FAT IN COOKING AND BAKING

It's a good idea to reduce the amount of fat you use in cooking and baking. Eating too much fat is thought to help certain cancers develop.

Two methods for reducing the fat in recipes are to:

1. remove ingredients that are sources of fat, and
2. replace high-fat ingredients with low-fat ingredients.

Here are some ways to remove or replace the fat in cooking and baking. It may take you a while to adjust to the change, so try only one or two of these suggestions at a time.

### Leaner Baking

■ Reduce the amount of fat called for in your favorite recipes by one-fourth to one-third. Use applesauce, fruit purees, juice, milk, or water to replace the fat you do not use. In the following recipe, for example, pureed prunes are being substituted for the fourth cup of liquid vegetable oil or butter that would normally be used as the fat ingredient.

### Low-Fat Brownies

1 tsp dry instant coffee  
 1/3 cup boiling water  
 1/3 cup unsweetened cocoa powder  
 2/3 cup all-purpose flour  
 2/3 cup sugar (half can be dark brown)  
 1/4 tsp baking soda  
 1/8 tsp baking powder  
 1/8 tsp salt  
 1 (2.5-oz) jar pureed prunes baby food  
 1/3 cup nonfat milk  
 2 eggs (may substitute 1 eggwhite for 1 egg)  
 1 tsp vanilla extract  
 1/4 tsp almond extract

Preheat oven to 350°F. Grease or oil an 8-by-8-inch square pan. Dissolve instant coffee in boiling water. Combine all dry ingredients in one bowl. Combine all wet ingredients, including the dissolved coffee, in another bowl. Mix liquid ingredients with dry ingredients and mix well. Pour batter into pan. Bake 25 minutes. Makes 16 brownies.



- Replace lard, butter, or margarine with liquid vegetable oil. Use one-third less than what the recipe calls for since you are using a liquid instead of a solid ingredient.
- Try replacing some or all of the oil with corn syrup. This will increase the sweetness of the product, but it will lower the calories. (Corn syrup has less than half the calories of oil.)
- Use evaporated skim milk for light cream.
- Use low-fat choices if the recipe calls for dairy products.
- Use low-fat ricotta cheese for regular cream cheese.

### Leaner Cooking

- Bake, broil, steam, or microwave foods; use only water or chicken broth.
- Choose lean meats and trim all visible fat. (Lesson 3 has a list of lean meats.)
- Discard the skin on chicken and turkey (most of the fat is under the skin). Baste the chicken or turkey with tomato sauce or broth to keep it moist.
- For a lighter “fried” chicken, remove the skin, dip the chicken in milk, and roll in corn flakes. Bake until cooked.
- Don't add any fat when browning ground beef or turkey; the meat will supply enough fat for browning. Completely drain the fat after cooking.
- Roast meats on a rack so fat drips off.
- Skim the fat from gravies and soups after chilling them.
- Use low-fat cheeses to make your favorite cheese casseroles or pizzas.

# Fact Sheet

## WHAT'S IN FAT?

There are three types of fatty acids in the fat in foods:

- saturated
- monounsaturated
- polyunsaturated

Fats and oils are a mix of these three types. When a fat or oil is called polyunsaturated, most of the fatty acids in that fat are polyunsaturated. But there are still some monounsaturated and saturated fatty acids in it as well. (See graph, right.) Look at olive oil, for example. It is made of:

- 14% saturated fatty acids
- 9% polyunsaturated fatty acids
- 77% monounsaturated fatty acids

Olive oil is called a monounsaturated fat, but it still has some of the other types of fatty acids.

Sometimes the physical state of a fat can help you determine the main type of fatty acid contained in it. Fats that are mainly monounsaturated and polyunsaturated are generally liquid at room temperature. Most vegetable oils are liquids of mostly “unsaturated” fatty acids.

Most fats with a large proportion of saturated fatty acids are hard at room temperature. The fat in meats, shortening, butter, and some margarine contains a larger amount of saturated fatty acids. But look at lard. It is solid yet contains:

- 41% saturated fat
- 12% polyunsaturated fat
- 47% monounsaturated fat



## Type of fat Fatty acid content

Type of fat	Fatty acid content		
Canola oil	6%	31%	62%
Corn oil	13%	62%	25%
Olive oil	14%	9%	77%
Soybean oil	15%	61%	24%
Margarine	18%	29%	48%
Veg. shortening	25%	25%	43%
Lard	41%	12%	47%
Palm oil	51%	10%	39%
Butter	54%	4%	30%
Coconut oil	77%	2%	6%

Note: Some oils may not add up to 100% because some minor fats are not shown.

### Key

- Saturated fat
- Polyunsaturated fat
- Monounsaturated fat

Lard is called a saturated fat, but it really is an unsaturated fat because of its high content of monounsaturated fat. Almost 60 percent of its fatty acids are unsaturated.

Three liquid oils are foolers, too. Coconut, palm, and palm kernel oil are all liquids and contain a lot of saturated fatty acids.

Manufacturers can change the type of fatty acid in fats, too. In a process called hydrogenation, hydrogen is added to fatty acids. This makes them more saturated. Hydrogenation can create “trans-fatty acids,” which act more like a saturated fat. You can expect this to be so when you see “partially hydrogenated oil” on an ingredient list. Many crackers, cookies, and cakes are made with partially hydrogenated oils.

What should a health-conscious person do? First, reduce your intake of all fat. But of the three types of fatty acids, saturated are more likely to cause health problems. When choosing fats and oils, select those with low amounts of saturated fatty acids, 20 percent or less. Choose a margarine that lists a liquid vegetable oil as the first ingredient. Since trans-fatty acids act like saturated fat, try to reduce the number of foods you eat that may contain these. Choose foods with hydrogenated vegetable oils in the ingredient list less often.

# Fact Sheet

## SOURCES OF FAT

Fat is found in meat, milk products, vegetable oils, nuts, and seeds. Fruits and vegetables do not contain fats, except for avocados and olives. Cereal grains such as rice do not contain fat either. It is easy to identify butter, margarine, and vegetable oil as sources of fat. But it is not so easy to identify the fat hidden in fast foods, casseroles, dairy products, and luncheon meats.

The nutrition label on a food product will help you identify the amount of fat in foods. Use this list as a guide to help you identify sources of fat in your diet.

Food	Amount	Total fat in grams (g)
<b>MEATS (trimmed, cooked)</b>		
<b>Beef</b>		
well marbled	3 ounces (oz)	26
lean cuts	3 oz	9
salami	2 slices	7
bologna	1 slice	8
hot dog	one	13
pot pie	1/3 of a 9-inch pie	30
liver (pan fried)	3 oz	7
<b>Pork</b>		
chop (without bone)	2.5 oz lean meat	8
ham	2.5 oz lean meat	8
sausage	1 link (1 oz)	4
<b>Lamb</b>		
leg	2.6 oz lean meat	6
<b>Chicken</b>		
breast and skin (fried)	3.5 oz	9
skinless breast (baked)	3 oz	3
drumstick and skin (fried)	1.7 oz	7
pot pie	1/3 of a 9-inch pie	31
<b>Turkey (skinless)</b>		
light meat (baked)	2 slices (1/4 in. thick)	3
dark meat	4 slices (1/4 in. thick)	6
<b>Seafood</b>		
haddock (baked)	3 oz	1
pink salmon (canned)	3 oz	5
flounder fillet (baked)	3 oz	1
shrimp meat (canned)	3 oz	1

Food	Amount	Total fat in grams (g)
oysters	1 cup	4
tuna in oil	3 oz	7
tuna in water	3 oz	1
<b>DAIRY AND EGGS</b>		
<b>Milk</b>		
whole	1 cup	8
2%	1 cup	5
1%	1 cup	3
<b>Cream</b>		
light	1 Tbsp	5
whipped, real	1 Tbsp	6
nondairy whipped	1 Tbsp	1
<b>Cheeses</b>		
blue	1 oz	8
cheddar	1 oz	9
Swiss	1 oz	8
American, processed	1 oz	9
cottage (1/2% fat)	1 cup	1
cottage (2%)	1 cup	4
<b>Yogurt</b>		
whole	8 oz	7
low-fat	8 oz	4
<b>Ice cream</b>		
chocolate (regular, 11% fat)	1 cup	15
chocolate (rich, 16% fat)	1 cup	24
vanilla (regular, 11% fat)	1 cup	14
vanilla (rich, 16% fat)	1 cup	24
<b>Eggs</b>		
white	from 1 large	0
yolk	from 1 large	5
<b>CEREALS AND GRAINS</b>		
<b>Breads</b>		
biscuits (canned dough)	1 average (avg.)	2
pancakes from mix	1 avg.	2
white, enriched	1 slice	1
whole wheat	1 slice	1
<b>Grains</b>		
white rice, enriched, cooked	1 cup	trace

OVER

## EAT FIVE—LESSON 2

Food	Amount	Total fat in grams (g)
oatmeal, cooked	1 cup	2
<b>Pasta</b>		
macaroni, enriched, cooked	1 cup	1
spaghetti, enriched, cooked	1 cup	1
<b>Crackers</b>		
saltines	4 crackers	1
graham	2 squares	1
Ritz cracker	3 crackers	3
<b>FATS AND OILS</b>		
butter	1 Tbsp	11
margarine	1 Tbsp	11
lard	1 Tbsp	13
corn oil	1 Tbsp	14
soybean oil	1 Tbsp	14
<b>NUTS AND NUT BUTTERS</b>		
cashews, dry roasted	1 oz	13
walnuts, English	1 oz	18
peanut butter	1 Tbsp	8
<b>COMBINATION FOODS</b>		
macaroni & cheese (canned)	1 cup	10
pizza, cheese	1/8 of 15-inch pie	9
potato salad (with egg)	1/2 cup	10
tuna salad (no egg)	1 cup	19
spaghetti, meatballs, tomato sauce	1 cup	12
peanut butter & jelly sandwich	1 avg.	10
ham & cheese sandwich	1 avg.	16
pound cake	1 slice	9
baked custard	1 cup	15
<b>FAST FOODS</b>		
<b>Kentucky Fried Chicken</b>		
Extra Crispy	1 drumstick	14
Original Recipe	1 drumstick	9
Buttermilk Biscuit	1	12
<b>McDonald's</b>		
Big Mac	1 burger	26
Quarter Pounder	1 burger	20
Quarter Pounder with cheese	1 burger	28

Food	Amount	Total fat in grams (g)
Shake (chocolate)	1 reg.	2
Chicken Fajita	1 fajita	8
Filet-O-Fish	1 sandwich	18
French fries	1 medium order	17
<b>Burger King</b>		
Whopper	1 burger	41
Ocean Catch Fish Fillet	1 sandwich	27
milkshake (chocolate)	1 medium	12
<b>Wendy's</b>		
Baked Potato (broccoli & cheese)	1	16
Big Classic	1 burger	33
chicken nuggets	1 small (6)	20
chili (regular)	1 serving	7
<b>Taco Bell</b>		
taco	1 taco	11
burrito (Supreme)	1 each	19
taco salad	1 salad	55
nachos	1 order	18
<b>Arby's</b>		
roast beef	1 sandwich	18
Light Roast Turkey Deluxe	1 sandwich	6
<b>Hardee's</b>		
Big Roast Beef	1 sandwich	11
Big Deluxe	1 sandwich	30
milkshake (chocolate)	1 shake	8
<b>MISCELLANEOUS</b>		
Coffee-Mate	1 teaspoon	1
avocado, raw, peeled	1/2 of one	15

Sources: J. A. T. Pennington, *Food Values of Portions Commonly Used*, 15th edition, Harper & Row, New York, 1989; "Nutritive Value of Foods," USDA Home & Garden Bulletin No. 72, 1991; and individual restaurant fact sheets.

## Vegetable Tips

### BROCCOLI AND POTATOES

#### Broccoli

Choose broccoli heads that are entirely green with completely closed flower buds. It's OK if there is a purplish color on the head. Avoid buying heads that have yellow flowers. These heads are past their prime. Use broccoli within one to two days of purchase. Store it in the crisper or in an airtight container in the refrigerator.

A head of broccoli may contain bugs if it is picked right out of your garden. To remove the bugs, soak the head in cold, salted water for no more than 15 minutes.

Don't waste the stem of the broccoli. Peel it with a vegetable peeler or knife. Then chop the stem and cook it with the florets.

The best way to cook fresh or frozen broccoli is to steam it. Steaming vegetables preserves nutrients. If you don't own a steamer, place broccoli pieces one layer deep in a pan. Then, pour boiling water over them, cover with a damp towel and boil gently. The towel will help steam the stalks evenly.

Avoid overcooking to retain the color and crispness. Do not add baking soda to the cooking water. This will destroy the vitamin C in the broccoli.

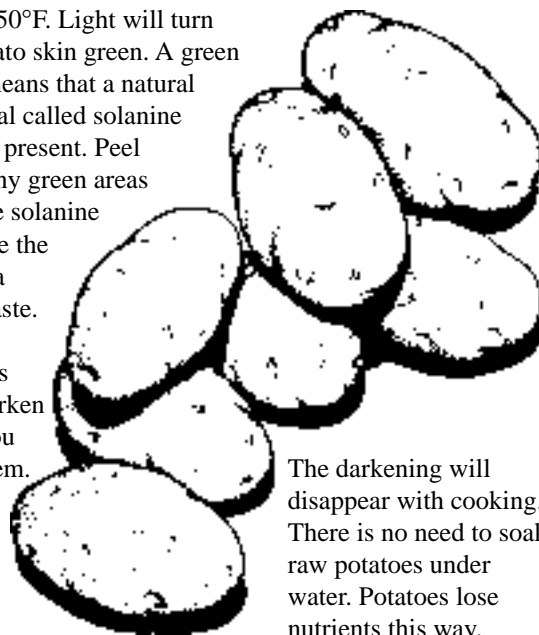


#### Potatoes

Choose potatoes that are smooth and firm. Do not wash potatoes before storing; washing speeds decay. Do not store potatoes in the refrigerator or at temperatures lower than 41°F. If you do, the potato starch will turn to sugar. This will make the potatoes too sweet. Potatoes often turn dark during cooking when they have been stored at too low a temperature. These dark potatoes are still safe to eat. Darkening does not affect the flavor or nutrients.

Store potatoes in a cool, dry, dark area at a temperature of 45°-50°F. Light will turn the potato skin green. A green color means that a natural chemical called solanine may be present. Peel away any green areas because solanine can give the potato a bitter taste.

Raw potatoes may darken after you peel them.



The darkening will disappear with cooking. There is no need to soak raw potatoes under water. Potatoes lose nutrients this way.

Instead of soaking them, slice and cook them immediately.

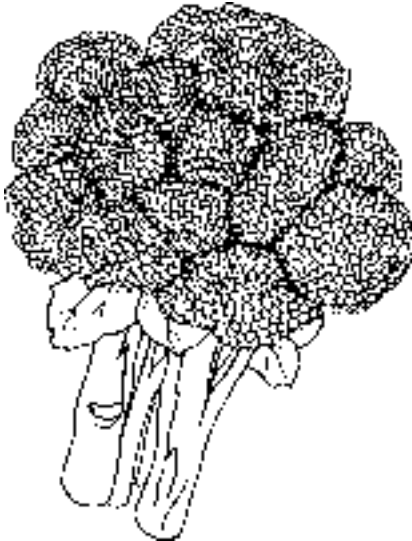
Bake or boil potatoes in their skins. This preserves nutrients, especially the fiber content. Scalloped potatoes can be made with unpeeled potatoes. If you want to remove the skins after boiling, slice each skin sharply in one spot and it will slide off easily.

## *Children and Teenagers in the Kitchen*

### **GETTING ACQUAINTED WITH BROCCOLI AND POTATOES**

Involving young children in meal preparation teaches them skills they can use later in life. It helps them learn to prepare meals on their own and encourages them to try new foods. It also teaches them responsibility.

Having young children assist with meal preparation exposes them to a variety of foods. Children usually show more interest in food they have helped prepare. And they will most likely keep helping with meal preparation if you continue to encourage them.



Children can help with the recipes in this lesson in the following ways.

#### **Very young children can:**

- Help wash broccoli.
- Learn how broccoli and potatoes grow. (Broccoli is a flower and grows above ground. The potato is a root vegetable and grows underground.)
- Compare the taste of raw and cooked broccoli and potatoes.

#### **Young children can:**

- Scrub potatoes.
- Mix ingredients to make the lemon dressing for the broccoli.
- Arrange the potato slices in a baking dish for the scalloped potatoes.

#### **Older children can:**

- Learn how to safely use a knife and cutting board.
- Wash and chop vegetables.
- Warm up leftovers in the microwave.

#### **Teenagers can:**

- Prepare the Broccoli with Lemon Dressing so that it is marinated by dinnertime.
- Prepare the New Scalloped Potatoes.



**ANTIPASTO**

Makes 32 servings.

One serving contains 41 calories, 1 g fat, 1 mg cholesterol, 187 mg sodium, 2 g dietary fiber, 726 IU vitamin A, 35 mg vitamin C, and 1 IU vitamin E.

**Group 1**

1/2 lb carrots      1 medium zucchini  
1 small cauliflower   1 bunch broccoli  
1 green pepper

**Group 2**

6 oz artichokes, drained and quartered\*   1/2 lb mushrooms, sliced lengthwise  
1 lb tomatoes (cherry)      6.5 oz hot chili peppers, drained  
1 can tuna, water pack (optional)      6 oz black olives, pitted and drained\*

\*Source of fat

OVER

**NEW SCALLOPED POTATOES**

Makes 12 servings.

One serving contains 176 calories, 0 g fat, 2 mg cholesterol, 150 mg sodium, 3 g dietary fiber, 278 IU vitamin A, 17 mg vitamin C, and 0 vitamin E.

12 medium potatoes      1 cup skim milk  
1/4 cup onion, finely chopped      13 oz (1 can) evaporated skim milk  
3 Tbsp flour      1/4 tsp dry mustard  
1/2 tsp salt or less      1/4 tsp paprika  
1/4 tsp pepper

Preheat oven to 350°F. Wash potatoes and remove eyes. Cut potatoes into thin slices. Do not peel. Arrange in four layers in an oiled 2-quart casserole. Sprinkle each of the first three layers with 1 tablespoon onion, 1 tablespoon flour, 1/8 teaspoon salt, and a dash of pepper. Sprinkle top layer with remaining onion, salt, and pepper. Heat milk just to scalding (bubbles around edge) and pour over potatoes. Cover and bake 30 minutes. Uncover and bake 60-70

OVER

**Time-saving Tip** *Antipasto continued*

- Antipasto may be made several days ahead, covered, and kept chilled.

**Microwave Cooking Tip**

- Combine dressing ingredients in a microwave-safe dish, microwave at high for 2-3 minutes or until boiling.

Adapted from *The Best from the Family Heart Kitchens* by S.L. Conner and W.E. Conner, The Oregon Health Science University, Portland, OR, 1983.

\*Source of fat

OVER

**LEMONY CHICKEN KABOBS**

Makes 4 servings.

One serving contains 250 calories, 11 g fat, 66 mg cholesterol, 337 mg sodium, 2 g dietary fiber, 196 IU vitamin A, 18 mg vitamin C, and 2 IU vitamin E.

3 medium lemons      2 Tbsp orange juice  
2 Tbsp vegetable oil\*      1 Tbsp sugar  
1 Tbsp vinegar      1/2 tsp salt or less  
1/4 tsp cayenne pepper      1 clove garlic, chopped or mashed  
4 halved medium chicken breasts\*      3 small zucchinis (about 3/4 lb)  
1/2 lb mushrooms

Preheat oven to 350°F. About 3 hours before serving or earlier: Prepare marinade by grating 1 Tbsp of peel from lemons. Squeeze juice from lemons to make 1/3 cup. Mix lemon peel, lemon juice, oil, sugar, vinegar, salt, cayenne, and garlic in small bowl and set aside.

\*Source of fat

OVER

Cut out recipes (use lines as a guide)



minutes more, until potatoes are tender. Let stand 5-10 minutes before serving.

*Note:* The secret of these scalloped potatoes is long, slow cooking—well worth the time and effort.

### Sample Menu

Sliced Roast Beef, New Scalloped Potatoes, Green Beans, Rolls, Sugar Cookies, Beverage

### Microwave Cooking Tips

- Blend seasonings in flour. Gradually stir in milk, microwave at high 6-8 minutes, stirring every 3 minutes. (Milk may curdle if heated too long.)
- In an oiled 2-quart microwave-safe casserole, layer half the potatoes, onion, and sauce. Repeat layers and cover. Microwave at medium-high 17-19 minutes, stirring after 10 minutes. Remove from oven and let stand 5 minutes before serving. Dish may be broiled after microwaving to brown top.

Adapted from *The Best From The Family Heart Kitchens* by S. L. Conner and W. E. Conner, The Oregon Health Sciences University, Portland, OR, 1983.

### Dressing

1/2 cup chili sauce (tomato based)	1 tsp basil
1 Tbsp oil*	1/4 cup lemon juice
1/4 cup wine vinegar	2-3 cloves garlic, minced
1/2 tsp mustard	1 tsp oregano, ground or leaves

Chop or slice Group 1 vegetables into attractive bite-sized pieces. Boil briefly until crisp-tender (5 minutes for carrots, 2 minutes for others). Drain. In a saucepan, combine dressing ingredients and bring to a boiling point. Pour over boiled and drained vegetables in a large bowl. Toss gently, cool to room temperature, drain well, and add Group 2. Toss thoroughly and gently. Chill. Add tuna if desired, just before serving. You may also use drained dressing as a salad dressing in other dishes. This recipe makes a very large amount.

### Sample Menu

Antipasto, Rolls or Crackers, Low-Fat Brownies, Beverage

\*Source of fat

**CONTINUED**

Remove bones and skin from chicken. Cut chicken into chunks. Cut zucchini into 1-inch slices. Trim tough stem ends from mushrooms. Add chicken, zucchini, and mushrooms to marinade; toss lightly to coat well. Cover and refrigerate at least 2 hours, stirring occasionally.

About 30 minutes before serving: On four 14-inch skewers, alternately thread chicken, zucchini, and mushrooms (reserving marinade). Broil 15 minutes or until chicken is fork-tender, brushing frequently with marinade and turning kabobs.

### Sample Menu

Lemony Chicken Kabobs, Steamed Carrots, Rice, Ice Milk, Beverage

### Time-saving Tip

- Cut up chicken, zucchini, and mushrooms and marinate overnight.

Adapted from *The Best from the Family Heart Kitchens* by S.L. Conner and W.E. Conner, The Oregon Health Science University, Portland, OR, 1983.

*Cut out recipes (use lines as a guide)*



**CHILLED BROCCOLI WITH LEMON DRESSING**

Makes 8 servings.

One serving contains 56 calories, 4 g fat, 0 mg cholesterol, 22 mg sodium, 2 g dietary fiber, 889 IU vitamin A, 73 mg vitamin C, and 2 IU vitamin E.

1 large bunch broccoli, separated into spears or chopped into bite-size pieces	1/2 tsp honey
1/4 cup lemon juice	1 clove garlic, finely minced
2 Tbsp vegetable oil*	1 Tbsp onion, finely chopped
1/4 tsp paprika	2 Tbsp water
	Salt and pepper to taste

Steam broccoli until just tender; drain well and refrigerate until ready to serve. Combine all remaining ingredients. Pour over chilled broccoli, mix well. Serve cool. If desired, garnish with a chopped hard-boiled egg.

\*Source of fat

**OVER**

**Sample Menu**

Meat Loaf, New Scalloped Potatoes, Chilled Broccoli with Lemon Dressing, Rolls, Butter or Margarine, Cantaloupe Bowls, Beverage

**Time-Saving Tip**

- Marinate 1 hour or less at room temperature and serve immediately.

**Microwave Cooking Tips**

- In a 13 x 9 x 2 inch microwave-safe dish, place 1/4 cup water. Arrange broccoli spears with stalks toward outside of dish and florets in center. If you are using bite-size pieces, distribute them uniformly in the dish. Cover with plastic wrap, but turn back one corner so that air can get in. Microwave on medium-high 10 minutes or until just tender. Rotate dish one-half turn after 5 minutes. Drain well. Chop into smaller pieces if desired. Chill.
- Combine rest of ingredients, pour over broccoli, and serve.

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