

Choose your low-cholesterol, heart-healthy diet

To get the nutrients you need, you have to eat a variety of foods. One way to do this is to choose foods from the different food groups. After determining your dietary goals with your doctor, adjust the number and size of portions to reach and stay at your desired weight.

	Choose	Go Easy	Avoid
Meat, poultry, fish, and shellfish (up to 6 ounces/day)	Lean cuts of meat with fat trimmed, chicken and turkey without skin, fish, shellfish		"Prime"-grade fatty cuts of meat, goose, duck, liver, kidneys, sausage, bacon, regular luncheon meats, hot dogs
Dairy products (2 servings/day; 3 for pregnant or breastfeeding women)	Skim milk, 1% milk, low-fat buttermilk, low-fat evaporated or nonfat milk, low-fat yogurt, cottage cheese, cheeses labeled "no more than 2 to 6 grams of fat per ounce"	2% milk, yogurt, part-skim ricotta, part-skim or imitation hard cheeses (like part-skim mozzarella), "lite" cream cheese, "lite" sour cream	Whole milk, cream, half and half, imitation milk products, whipped cream, custard-style yogurt, whole-milk ricotta, hard cheeses (like Swiss, American, cheddar, muenster), cream cheese, sour cream
Eggs	Egg whites, cholesterol-free egg substitutes	Egg yolks (no more than 3/week)	
Fats and oils (up to 6 to 8 teaspoons/day)	Corn, olive, peanut, canola (rapeseed), safflower, sesame, and soybean oils, tub (not stick) margarine	Nuts, seeds, avocados, olives	Butter, lard, bacon fat, coconut and palm kernel oils
Breads, cereals, pasta, rice, dried peas, and beans (6 to 11 servings/day)	Most breads, bagels, English muffins, rice cakes, low-fat crackers (like matzo, bread sticks, rye krisps, saltines); hot and cold cereals; spaghetti, macaroni, noodles, and any grain rice; dried peas and beans	Store-bought pancakes, waffles, biscuits, muffins, and cornbread	Croissants, sweet rolls, danish, doughnuts, and crackers made with saturated oils; granola-type cereals made with saturated oil, egg noodles, pasta, and rice prepared with cream, butter, or cheese sauces
Fruits and vegetables (2 to 4 servings of fruit/day; 3 to 5 servings of vegetables/day)	Fresh, frozen, canned, or dried fruits		Vegetables prepared in butter, cream, or sauce
Snacks (avoid too many sweets)	Sherbet, sorbet, Italian ice, frozen yogurt, popsicles, angel food cake, fig bars, gingersnaps, low-fat jelly beans and hard candy, plain popcorn, pretzels, fruit juices, tea, coffee	Ice milk, fruit crisps and cobblers, homemade cakes, cookies, and pies prepared with unsaturated oils	Ice cream, frozen tofu, candy, chocolate, potato chips, buttered popcorn, milkshakes, frappes, floats, eggnog, store-bought pies, most store-bought frosted and pound cakes

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 **BOOTS PHARMACEUTICALS**

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CHOLESTEROL, FAT AND SATURATED FAT CONTENTS OF COMMON FOOD ITEMS

ABBREVIATIONS AND SYMBOLS

dia. = diameter fl. = fluid g. = gram mg. = milligram tr. = trace T. = tablespoon tsp. = teaspoon * = inch * = accurate data unavailable

BREAD, CEREAL, CRACKERS

Bread	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Bagel	1	•	2.6	•
Bran muffin, 2" dia.	1	•	3.9	1.2
Bread, white, sliced	1	•	0.9	0.2
Bun, hot dog or hamburger	1	•	2.2	0.5
English muffin	1	•	1.2	•
French toast, sliced	1	•	6.7	•
Hard roll, 3 1/4" dia.	1	•	1.6	0.4

Cereal	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Corn flakes	1 oz.	0	0.1	0
Corn grits	1 cup	0	0.5	0
Cream of wheat	1 cup	0	0.5	0
Grapenuts	1 oz.	0	0.1	0
Oatmeal	1 oz.	0	2.4	0.4
Puffed wheat	1 oz.	0	0.4	0
Shredded wheat, large biscuit	1	0	0.3	0
40% bran flakes	1 oz.	0	0.5	0

Crackers	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Cheese	6	•	4.0	1.6
Graham	2	•	1.3	0.3
Saltine	4	•	1.4	0.3

CAKE, COOKIES, PIE, OTHER BAKED GOODS

Cake, with frosting	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Angel (wedge)	1"	•	2.5	1.3
Cheesecake	1"	170	19.2	•
Devils (wedge)	1"	41	17.5	1.3
Sponge (wedge)	1"	7	6.2	2.5
White, 2-layer (wedge)	1/2"	3	10.9	3.5
Yellow, 2-layer (wedge)	1/2"	36	9.3	3.2

Cookies	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Chocolate chip, 2 1/2" dia.	1	•	3.0	0.9
Fig bar	1	•	0.8	0.3
Gingersnap, 2" dia.	1	•	0.6	0.2
Sandwich, 1 1/4" dia.	1	•	0.6	0.2

Pies	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Apple, 2-crust (wedge)	2"	•	23.0	6.0
Cherry, 2-crust (wedge)	2"	•	23.0	6.0
Custard (wedge)	2"	•	22.0	8.0
Pecan (wedge)	2"	•	41.0	6.0
Pumpkin (wedge)	2"	•	22.0	8.0

Other Baked Goods	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Cupcake, with icing, 2 1/2" dia.	1	•	3.5	1.0
Doughnut, cake type	1	•	10.8	2.7
Pastry, Danish, 4" dia.	1	•	15.3	4.5

CANNED SOUP (PREPARED WITH WATER)

	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Bean with bacon	1 cup	3	5.9	1.5
Chicken noodle	1 cup	7	2.5	0.7
Cream of mushroom	1 cup	2	9.0	2.4
Minestrone	1 cup	2	2.5	0.5
Split pea with ham	1 cup	8	4.4	1.8
Tomato	1 cup	0	1.9	0.4

CHEESE

	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
American	1 oz.	27	8.9	5.6
Blue, Cheddar, Colby, Swiss	1 oz.	30	9.4	6.0
Cheese spread, process	1 oz.	16	6.0	3.8
Cottage cheese, 1% lowfat	4 oz.	5	1.2	0.7
Cream cheese	1 oz.	31	9.9	6.2
Mozzarella, part skim	1 oz.	16	4.5	2.9

DAIRY PRODUCTS

Milk	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Skim or non-fat	1 cup	4	0.4	0.3
1% fat	1 cup	10	2.6	1.6
2% fat	1 cup	18	4.7	2.9
Whole	1 cup	33	8.2	5.1
Buttermilk	1 cup	9	2.2	1.3

Eggs	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Whole, raw	1	274	5.6	1.7
Yolk, raw	1	272	5.6	1.7
White, raw	1	2	tr.	0
Fried in butter	1	246	6.4	2.4
Scrambled, butter and milk	1	248	7.1	2.8
Egg substitute, liquid	1/2 cup	1	2.0	0.4

Cream, Non-Dairy Creamers and Toppings	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Creamer, non-dairy, powder	1 tsp.	0	0.7	0.7
Half and half cream	1 T.	6	1.7	1.1
Sour cream	1 T.	5	2.5	1.6
Whipped cream, aerosol	1 T.	2	0.7	0.4
Dessert topping, frozen	1 T.	0	1.0	0.9
Whipping cream, fluid	1 T.	21	5.6	3.5

FAST FOODS

	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Cheeseburger	4 oz.	105	31.4	•
Fish sandwich, with cheese	4 oz.	90	26.7	•
French fries	3 oz.	14	14.2	•
Hamburger	4 oz.	71	21.1	7.0
Hot dog	1	37	13.7	5.0
Taco	1	21	15.0	4.0

FISH, SHELLFISH, MEAT, POULTRY

Fish -- Cooked	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Cod, Atlantic; Scrod	4 oz.	64	0.8	0.4
Flounder, Sole	4 oz.	76	1.6	0.4
Haddock	4 oz.	84	1.2	0.4
Mackerel, canned, drained	4 oz.	88	7.2	2.0
Salmon, Sockeye, canned	4 oz.	48	8.4	2.0
Sardines, in tomato sauce	4 oz.	68	13.6	3.6
Tuna, canned in water	4 oz.	48	2.8	0.8

Shellfish -- Cooked	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Crab, Alaskan King	4 oz.	60	1.6	tr.
Lobster	4 oz.	80	0.8	tr.
Shrimp	4 oz.	220	1.2	0.4
Shrimp, breaded/fried	4 oz.	227	15.9	2.6
Scallop, breaded/fried	4 oz.	84	15.1	3.5

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FISH, SHELLFISH, MEAT, POULTRY (CONT.)				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Meat — Beef				
Lean, cooked	3 oz.	75	8.7	3.3
Round steak, lean, broiled	3 oz.	69	6.9	2.4
Rib eye, lean, broiled	3 oz.	69	9.9	4.2
Chuck roast/steak, braised	3 oz.	84	8.7	3.3
Ground, lean, broiled	3 oz.	87	15.0	6.0
Ground, regular, broiled	3 oz.	87	16.5	6.6
Liver, braised	3 oz.	330	4.2	1.5
Shortribs, lean, braised	3 oz.	78	15.3	6.6
Meat — Veal				
Loin chops, braised	3 oz.	138	7.2	2.1
Rib roast, cooked	3 oz.	108	5.4	1.8
Meat — Lamb				
Leg, shank, roasted	3 oz.	75	5.7	1.5
Loin chops, broiled	3 oz.	81	8.1	3.0
Rack, rib, roasted	3 oz.	75	11.4	3.6
Meat — Pork				
Bacon, fried	3 oz.	72	42.0	15.0
Center loin, broiled	3 oz.	84	9.0	3.0
Boston blade, roasted	3 oz.	84	14.4	4.8
Ham, canned, roasted	3 oz.	51	12.9	4.2
Spareribs, braised	3 oz.	102	25.8	9.9
Lunch Meat, Sausage				
Bologna, beef/pork	1 oz.	16	8.0	3.0
Braunschweiger, pork	1 oz.	44	9.1	3.1
Chicken spread, canned	2 T.	.	3.3	.
Frankfurter, beef/pork	1 oz.	14	8.3	3.1
Salad spread, ham	2 T.	12	4.7	1.5
Salami, pork	1 oz.	22	9.8	3.5
Sausage, Italian	3 oz.	66	21.9	7.8
Sausage, pork	3 oz.	72	26.4	9.3
Sausage, Polish	3 oz.	60	24.3	8.7
Chicken — Stewed				
Light meat, no skin	3 oz.	66	3.3	0.9
Dark meat, no skin	3 oz.	75	7.5	2.1
Thigh, no skin	3 oz.	65	7.2	2.0
Batter fried, add	3 oz.	15	7.0	1.8
Giblets (gizzard, heart, liver)	1 oz.	101	1.5	0.5
Turkey — Roasted				
Light meat, no skin	3 oz.	72	0.9	0.3
Light meat and skin	3 oz.	66	7.2	2.1
Dark meat, no skin	3 oz.	96	3.6	1.2
Dark meat and skin	3 oz.	75	9.9	3.0
Giblets (gizzard, heart, liver)	1 oz.	119	1.4	0.4
Mixed Dishes				
Chicken and noodles	1 cup	.	18.5	5.9
Chili con carne, w/beans	1 cup	.	15.6	7.5
Chop suey, beef & pork	1 cup	.	17.0	8.5
Macaroni and cheese	1 cup	.	9.6	4.2
Pizza, cheese (wedge)	1	56	8.6	4.2
Spaghetti, w/meatballs	1 cup	.	10.8	2.2
Stew, beef and vegetable	1 cup	72	10.5	4.4
FATS				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Oil				
Canola	1 tsp.	0	4.5	0.3
Corn	1 tsp.	0	4.5	0.6
Olive	1 tsp.	0	4.5	0.6
Peanut	1 tsp.	0	4.5	0.8
Safflower	1 tsp.	0	4.5	0.4
Soybean/Cottonseed	1 tsp.	0	4.5	0.8
Sunflower	1 tsp.	0	4.5	0.5
Margarine				
Corn oil, stick	1 tsp.	0	3.8	0.6
Corn oil, tub	1 tsp.	0	3.8	0.7
Safflower oil, tub	1 tsp.	0	3.8	0.4
Soybean, tub	1 tsp.	0	3.8	0.6

FATS (CONT.)				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Other				
Butter	1 tsp.	11	4.1	2.5
Peanut butter, smooth	1 tsp.	0	2.8	0.5
Shortening, hydrogenated	1 tsp.	0	4.3	1.1
SALAD DRESSING				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Blue Cheese	1 T.	.	8.0	1.5
French	1 T.	.	6.4	1.5
Italian	1 T.	0	7.1	1.0
Mayonnaise	1 T.	8	11.0	1.6
Thousand Island	1 T.	5	5.6	0.9
Vinegar and Oil	1 T.	0	8.0	1.5
SAUCES AND GRAVIES				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Sauces — Dehydrated				
Cheese, w/milk	¼ cup	13	4.3	2.3
Hollandaise, w/milk, butter	¼ cup	47	17.1	10.5
Sour cream, w/milk	¼ cup	23	7.6	4.0
Sweet and sour, w/water, vinegar	¼ cup	0	0	0
Sauces — Bottled				
Barbecue	¼ cup	0	1.1	0
Soy	¼ cup	0	0	0
Teriyaki	1 T.	0	0	0
Gravy — Dehydrated				
Au jus, w/water	¼ cup	0	0.2	0.1
Brown, w/water	¼ cup	11	0.1	0
Chicken, w/water	¼ cup	1	0.5	0.1
Mushroom, w/water	¼ cup	0	0.2	0.1
Turkey, w/water	¼ cup	1	0.5	0.1
Gravy — Canned				
Beef	¼ cup	2	1.4	0.7
Chicken	¼ cup	1	3.4	0.8
Turkey	¼ cup	1	1.3	0.4
VEGETABLES, FRUITS				
Vegetables and fruits contain no cholesterol; are very low in fat and saturated fat. Add ingredient values to prepared vegetables.				
CANDY, ICE CREAM, NUTS				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Candy				
Milk chocolate	1 oz.	.	9.2	5.1
Caramels	1 oz.	.	2.9	1.6
Chocolate coated peanuts	1	.	1.5	0.4
Fudge	1 oz.	.	3.5	1.2
Hard candy	1 oz.	0	0.3	0
Ice Cream				
Frozen yogurt	½ cup	9	2.3	1.5
Ice Cream, regular	½ cup	30	7.1	4.5
Ice milk, regular	½ cup	9	2.8	1.8
Sherbet	½ cup	7	1.9	1.2
Nuts				
Coconut, flaked	4 oz.	0	9.0	8.0
Mixed, dry roasted	4 oz.	0	14.6	2.0
Peanuts, oil roasted	4 oz.	0	14.0	1.9
Pistachio, dry roasted	4 oz.	0	15.0	1.9
PASTA, RICE (COOKED)				
	AMOUNT	CHOL.	FAT	SAT. FAT
		mg.	g.	g.
Noodles, chow mein	1 cup	5	10.6	2.0
Noodles, egg	1 cup	50	2.4	.
Rice, white, brown, wild	1 cup	0	0.2	0
Spaghetti	1 cup	.	0.6	0

Source: U.S. Department of Agriculture

Fill out this section with your doctor.

Name _____	Date _____	
	Current Level	Goal Level
LDL cholesterol	_____	_____
Total cholesterol	_____	_____
HDL cholesterol	_____	_____
Triglycerides	_____	_____

Your cholesterol should be checked every _____ months.

Your next appointment is _____.

CHOLESTEROL Q & A

■ Why Is Elevated Cholesterol Harmful?

Did you know that coronary heart disease causes more than 550,000 deaths in the United States yearly? This disease affects several million persons nationwide. The word "coronary" refers to the blood vessels that surround your heart in a "crown-like" fashion and carry oxygen and nutrients to the heart muscle. Disease occurs when these vessels become damaged. Coronary heart disease often goes undetected for a long period. A heart attack may be the first sign of the problem.

Several factors have been identified by the National Institutes of Health (NIH) as increasing the risk of coronary heart disease. Excess blood cholesterol is one; high blood pressure and smoking are two others. Evidence has shown that reducing these factors will reduce the risk of the disease.

The information provided here will help you understand why too much cholesterol is harmful, what it causes, and what you can do about it.

■ What Is Cholesterol?

Cholesterol is a complex, fat-like substance, most of which is produced naturally in the liver. While too much cholesterol can be harmful, a certain amount is necessary for many body functions. It is found in all cells; the body uses it to help make many important substances, including some hormones and vitamin D.

Cholesterol can become a risk to your health when there is more in your body than is needed. Much of the excess cholesterol gets deposited in various parts of your body, especially the walls of the arteries.

■ Why Does Elevated Cholesterol Occur?

Many factors, including obesity, certain genetic or inherited tendencies, and low activity levels, can contribute to elevated cholesterol. However, one of the most common and controllable factors is diet.

In the United States, we tend to eat large amounts of animal foods, oils, whole milk, and eggs, which may cause excess cholesterol and fats to accumulate. Fats, particularly saturated fats, add to the problem of elevated cholesterol. Saturated fats occur mainly in foods of animal origin, while unsaturated fats occur mainly in plant foods. Most fish and poultry are low in saturated fats.

■ What Are Unsaturated Fats?

Unsaturated fats come primarily from vegetables and tend to be liquid at room temperature, such as corn and safflower oils. There are two basic types — polyunsaturated and monounsaturated. Switching to unsaturated fats may help to reduce blood cholesterol.

CHOLESTEROL Q & A (Continued)

■ What Are Saturated Fats?

Saturated fats come mainly from animals and tend to be solid at room temperature. An example is the marbling seen in red meat. Certain vegetable oils, especially the "hydrogenated" oils, also contain saturated fats.

■ Why Do Saturated Fats Increase Blood Cholesterol?

The answer is not fully known. We do know that eating saturated fats causes cholesterol to build up in the blood.

■ What Are Lipoproteins?

Lipoproteins are substances that help to regulate blood cholesterol levels. They are a combination of lipids (fats) and proteins and are the "carriers" of cholesterol in the blood. High-density lipoproteins (HDL) and low-density lipoproteins (LDL) are the two main carriers. HDL is the "good" lipoprotein because it carries cholesterol away from blood vessels to the liver where it is eliminated. LDL is the "bad" lipoprotein because it tends to keep cholesterol in the blood vessels, forming fatty deposits.

■ How Do I Find Out Whether I Have a Cholesterol Problem?

The only way to find out is to have your cholesterol checked by a blood test. Generally, it is recommended that all adults have this test. Even if your cholesterol is not elevated, you should have it rechecked periodically as recommended by your doctor.

■ What Is the Normal Blood Cholesterol Level?

There is no one level or range of levels that can be called "normal." The National Cholesterol Education Program (NCEP) has proposed the following classifications:

Classification	Cholesterol	
	Total (mg/dL)	LDL (mg/dL)
Desirable	<200	<130
Borderline high	200-239	130-159
High	≥240	≥160

Further evaluation by your physician, especially of LDL cholesterol (the "bad" cholesterol), may be required to determine whether you need treatment.

■ What Can I Do If I Need Treatment?

The first step in reducing blood cholesterol to desirable levels is to follow a low-fat, low-cholesterol diet. In general, a low-fat diet requires that you eat less high-saturated fat and high-cholesterol foods such as meats, eggs, and dairy products and more fruits, grains, and vegetables. A low-fat diet can contain small portions of meat, such as turkey and chicken without the skin and well-trimmed lean beef. Fish, broiled or baked without butter, is an appropriate alternative to meat.

■ Can Cholesterol Be Reduced with Medicines?

While a low-fat diet can be very effective, it may not be sufficient for some people. Several types of cholesterol-lowering medicines are available. If medicine is used, it should always be used along with a low-fat, low-cholesterol diet. Your doctor will decide whether medicine is necessary and which medicine is best for your particular situation.

■ Some Dos...

- Do have your cholesterol levels checked periodically
- Do control your weight and limit foods that are high in cholesterol and saturated fats
- Do follow your doctor's instructions regarding diet and medicine

■ Some Don'ts...

- Don't smoke; it is another risk factor for coronary heart disease
- Don't ignore your blood pressure; have it checked periodically
- Don't hesitate to call your doctor if you have questions about your treatment

Health Maintenance: Controlling Cholesterol

Cholesterol is a naturally occurring fatty substance. It has both good and bad effects on the body. On the good side it builds natural hormones, and helps build and maintain nerve cells. However, when your body has too much cholesterol, blood vessel walls can thicken and reduce circulation causing heart attacks and strokes.

Most of the cholesterol in your blood is made by your liver from the fats, carbohydrates, and proteins you eat. Cholesterol also comes directly from foods (animal products only) that you eat.

Measuring Cholesterol

When you get your cholesterol checked, your doctor will give you a number for your total cholesterol level. Use the following chart to determine how high your cholesterol is.

Cholesterol Level (mg/dl)	
200 or below	good
200-239	borderline high
240 or above	high

When your cholesterol is measured and found to be high, the doctor may also check the amount of LDL (low-density lipoprotein) and HDL (high-density lipoprotein) in your blood. LDL and HDL carry cholesterol through your blood. LDLs carry a lot of cholesterol, leave behind fatty deposits on your artery walls and contribute to heart disease. HDLs do the opposite. They clean the artery walls and remove extra cholesterol from the body, thus, lowering the risk of heart disease. LDL is sometimes called "bad" cholesterol and HDL "good" cholesterol. It is desirable to have low levels of LDL and high levels of HDL.

LDL Cholesterol Level (mg/dl)	
130 or below	good
130 to 159	borderline high
160 or above	high

For HDL, a level of 35 mg/dl or below is too low. The average HDL level is about 45 to 65 mg/dl.

Controlling Your Cholesterol Level

Cholesterol levels can be controlled by eating right and exercising.

Eating Right

Follow these guidelines to help control your cholesterol:

- Adjust the amount of calories you eat to maintain a lean body weight.
- Reduce the amount of fat you eat. Fats should contribute no more than 30 percent of your daily calories and only 10 percent of the fat you eat should be saturated fat.

There are 9 fat calories per gram. So, to calculate the maximum grams of fat you should eat each day use these formulas:

$$\# \text{ of calories (a day)} \times .30 = \# \text{ of calories from fat}$$

$$\# \text{ of calories from fat} / 9 = \# \text{ of fat grams (a day)}$$

Some kinds of fats are better than others. Polyunsaturated and monounsaturated fats are better than saturated fats. Monounsaturated fats are found in olive oil, canola oil, and avocados. Polyunsaturated fats are found in fish and some vegetable oils.

Saturated fat raises your blood cholesterol because it makes it hard for the body to clear the cholesterol away. Saturated fat is found in different amounts in almost all foods. Butter, some oils, meat, and poultry contain a lot of saturated fat.

To control the amount of fat and cholesterol you eat:

- Check food labels for fat and cholesterol content.
- Limit the amount of butter and margarine you eat.
- Take the skin off of poultry before you cook it.
- Drink skim milk.
- Use sunflower or olive oil rather than tropical oils such as palm or coconut.
- Choose lean cuts of meat.
- Use salad dressings and margarine made with monounsaturated fats.
- Eat fruits, vegetables, beans, and whole grains daily. Fiber helps lower cholesterol.
- Eat chicken, turkey, and fish instead of red meat.
- Use egg whites rather than whole eggs.
- Use low-fat yogurt or low-fat cottage cheese instead of sour cream.

- Eat more leafy vegetables and fresh fruits.
- Avoid desserts, including ice cream, cream-filled cakes, cheesecakes, etc. Choose fresh fruits instead.
- Add fiber to your diet.
- Look for low-fat or nonfat varieties of the foods you choose, or look for substitutes.
- Have your cholesterol levels and weight checked by your doctor.

For every 1% reduction in cholesterol level, the risk of heart disease is reduced 2%.

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Hypercholesterolemia

What is hypercholesterolemia?

Hypercholesterolemia is caused by abnormalities of cholesterol or triglyceride metabolism (hypertriglyceridemia). Hypercholesterolemia increases the risk of heart disease.

Cholesterol is a waxy substance found mostly in fatty foods that come from animals. It is also manufactured by the body. You need small amounts of cholesterol to make and maintain nerve cells and to manufacture natural hormones.

Triglyceride is a waxy substance that is important in fat metabolism and the manufacture of cholesterol.

The two categories of cholesterol are low-density lipoprotein (LDL), the so-called "bad" cholesterol, and high-density lipoprotein (HDL), the "good" cholesterol. Diet, exercise, smoking, and certain illnesses can affect the levels of both types of cholesterol.

How does it occur?

The most common cause of hypercholesterolemia is eating foods that are high in saturated fat and/or cholesterol. It can also be caused by:

- an inherited disorder in which cholesterol is not metabolized properly by the body
- an underlying disease that raises the cholesterol level (for example, diabetes mellitus, kidney disease, liver disease, or hypothyroidism).

Cholesterol causes deposits to form inside blood vessels. These deposits, called plaque, are made of fats deposited from the bloodstream. If the deposits get large enough, blood vessels may become clogged, causing atherosclerosis, which results in decreased blood flow. Blood clots may form later that totally stop blood flow. Atherosclerosis causes more deaths from heart disease than any other single condition.

What are the symptoms?

When hypercholesterolemia is severe enough or occurs over time, it can cause diseases in many organs of the body. The symptoms will then be those related to the specific disease (for example, chest pain with a heart attack or vertigo)

caused by hypercholesterolemia. Hypercholesterolemia usually has no specific symptoms.

Hypertriglyceridemia can produce chronic pancreatitis and abdominal pain if not properly treated.

How is it diagnosed?

To check your cholesterol level, the doctor will take a sample of your blood. Lab tests may include total cholesterol level, including low-density lipoprotein (LDL), and high-density lipoprotein (HDL), and triglyceride levels.

The doctor may ask you for a detailed diet history, give you a physical exam, and ask about diseases and health problems in your family.

How is it treated?

Initial treatment for hypercholesterolemia is a diet designed to:

- reduce your intake of total fat, saturated fat, and cholesterol
- moderately increase your intake of monounsaturated and polyunsaturated fats
- help you lose weight, if necessary
- increase your intake of soluble fiber (oat bran, rice bran).

The following changes will improve your diet:

- Reduce the number of calories you consume every day so that you achieve and maintain your ideal body weight.
- Reduce the number of calories from fat to 30% or less of your total daily intake.
- Less than 1/3 of the calories from fat should come from saturated fat, 10% from polyunsaturated fats and oils, and the remainder from monounsaturated sources.
- If you're counting calories, remember that one gram of fat equals approximately 9 calories.

Follow these guidelines for a healthy diet:

- Eat fruits, vegetables, legumes (peas, beans), and whole grains, which contain fiber.
- Remember that oat or wheat bran in combination with a low-fat diet can help to lower cholesterol level.
- Choose poultry and fish instead of red meats high in fat.
- Remove skin from chicken and turkey before eating.
- Use lean cuts of meat and trim off all visible fat.
- Limit your intake of nuts.
- Replace saturated fats in butter, margarine, and salad dressing (for example, use non-oil salad dressing).
- Cook with vegetable oils and margarines high in unsaturated and polyunsaturated fat.
- Replace dairy products high in butterfat and egg yolks with low-fat milk, cheese, spreads, and yogurt.
- Avoid desserts, including ice cream, cream-filled cakes, cheesecakes, etc. Choose fresh fruits instead.
- Reduce amount of fried foods, vending machine food, and fast food.
- Read labels on food packages.

Fats

Fats are divided into two categories, saturated fats and unsaturated fats. A saturated fat is usually solid at room temperature (for example, butter, margarine, and bacon fat). Unsaturated fats are often soft or liquid at room temperature (such as corn, sunflower, and safflower oils). Polyunsaturated fat helps the body manufacture fats properly.

Saturated fats are found in animal fat and milk products, coconut oil, palm oil, and cocoa butter. Saturated fats are not essential for growth and development. They raise your cholesterol level.

Polyunsaturated fats are found in vegetable oils such as safflower, sunflower, soybean, and corn oils, and in fish oils. These are not manufactured by the body and therefore must be eaten for growth and development.

Monounsaturated fats are present in all vegetable fats.

They are found in olives, olive oil, peanuts, peanut butter, avocados, seeds, and nuts. Monounsaturated fats do not significantly raise your blood cholesterol level.

Drug Therapy

If a diet low in cholesterol and saturated fats doesn't substantially reduce your cholesterol level, your doctor may prescribe drugs. These cholesterol-lowering drugs include cholestyramine (Questran), colestipol (Colestid), lovastatin (Mevacor), pravastatin (Pravachol), simvastatin (Zocor) and probucol (Lorelco), or gemfibrozil.

The doctor may prescribe nicotinic acid (Niacin) as an alternative to the drugs above. It has a variety of effects on cholesterol, but can cause unpleasant side effects such as flushing.

Newer drugs are effective in lowering cholesterol. However, some have side effects your doctor would need to discuss with you.

How can I take care of myself?

In addition to changing your diet, you can help yourself by:

- getting more exercise, especially aerobic exercise
- decreasing alcohol intake
- stopping smoking.

What can be done to help prevent hypercholesterolemia?

Doctors and researchers are formulating guidelines for pediatric evaluation of hypercholesterolemia.

A doctor will want to schedule a follow-up visit after a cholesterol screening in adults every five years after the initial evaluation if he or she has detected no abnormalities.

You can also do the following:

- Lose weight, if necessary.
- Reduce the amount of cholesterol you consume.
- Avoid smoking.
- Reduce the amount of alcohol you drink.
- Read labels when buying foods to check ingredients.

Eating right for a healthier heart

Eating fewer high-fat, high-cholesterol foods and watching calories are important steps to a healthier diet and a healthier heart.

Guidelines for a healthy diet

With your doctor, determine the number of calories you need each day to achieve or maintain a desirable weight.

Eat less high-fat food (especially those high in saturated fat).

Replace part of the saturated fat in your diet with unsaturated fat.

Less than 30% of your total daily

calories should come from fat (less than 10% of your calories should come from saturated fat; no more than 10% of your calories should come from polyunsaturated fat; 10% to 15% of your calories should come from monounsaturated fat).

Control your daily cholesterol intake—eat less than 300 mg a day.

Choose foods high in complex carbohydrates (starch and fiber).

If you drink alcohol, do so in moderation.

Saturated fat is fat from animal and whole milk dairy products, as well as from some oils (for example, red meat, butter, cream, cheese, and palm oil).

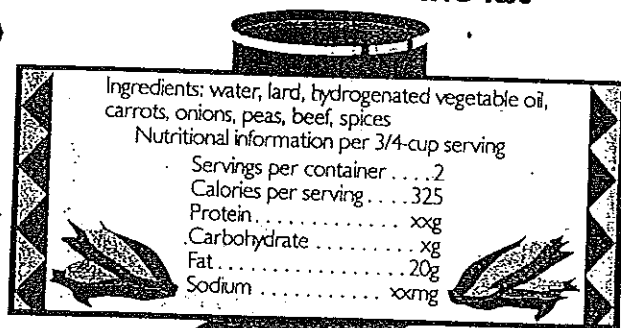
Unsaturated fat is a type of fat that is usually a liquid and is not as bad for you as saturated fat.

Monounsaturated fat and polyunsaturated fat are two kinds of unsaturated fat.

Monounsaturated fat is a slightly unsaturated fat found in foods from plants, including olive and canola (rapeseed) oils.

Polyunsaturated fat is a highly unsaturated fat found in foods from plants, including safflower, sunflower, corn, and soybean oils.

Read the labels to find the fat



Ingredients: water, lard, hydrogenated vegetable oil, carrots, onions, peas, beef, spices

Nutritional information per 3/4-cup serving

Servings per container	2
Calories per serving	325
Protein	xxg
Carbohydrate	xxg
Fat	20g
Sodium	xxmg

Ask yourself these questions to help choose products that are low in fat, especially products that are low in saturated fat.

1. Is fat a major ingredient?

On the label, all ingredients are listed by weight. The ingredient in the greatest amount is listed first. The ingredient in the least amount is listed last. To avoid too much fat and cholesterol, go easy on products that list any ingredient high in saturated fat or cholesterol first.

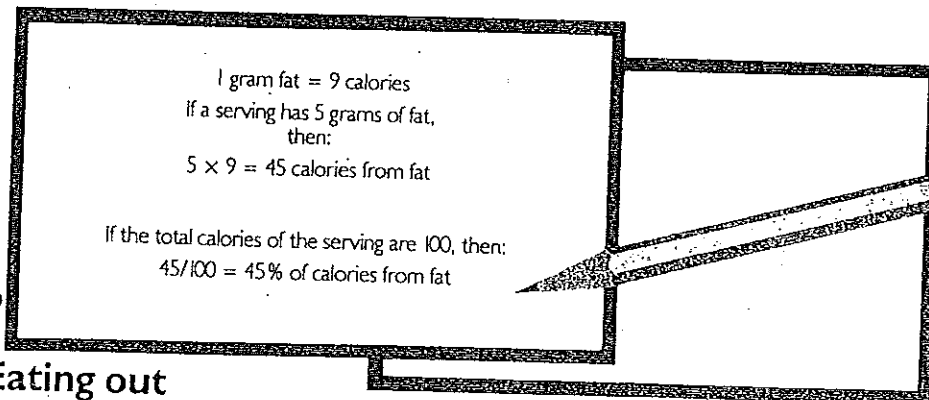
On this product, lard and hydrogenated fat are listed early in the ingredients; therefore, this is a high-fat product.

2. Is there more than one type of fat in the product?

When you see several high-fat ingredients on a label (such as lard, hydrogenated vegetable oil, and beef), the product probably has too much fat.

3. Is the serving size appropriate?

This label says there are two 3/4-cup servings in this can—a serving that may be less than what you would usually eat. When you are figuring out how much fat there is in something, make sure to use a serving size that is close to what you would really eat.



1 gram fat = 9 calories
If a serving has 5 grams of fat, then:
 $5 \times 9 = 45$ calories from fat

If the total calories of the serving are 100, then:
 $45/100 = 45\%$ of calories from fat

Eating out

Be just as careful when you dine out as you are when you make your own meals!

Salad

Bread

Chicken

Steak

Hamburger

Fish



Use light corn oil and vinegar dressings

Use margarine instead of butter if desired

Eat broiled or grilled chicken; remove its skin before eating

Ask the chef to trim off any excess fat before cooking

Avoid cheese or mayonnaise toppings—add tomato or lettuce instead

Select broiled or poached fillets

Pasta

Pizza

Baked potato

Vegetables

Dessert

Coffee, tea



Use marinara, clam, or tomato sauce without meat or sausage (avoid cream sauce)

Choose vegetable toppings instead of cheese or meat toppings

Avoid toppings such as butter or sour cream

Eat plenty of these, but without any heavy sauces

Sherbet and fresh fruit are excellent choices

Use skim milk or nondairy, nonfat creamer