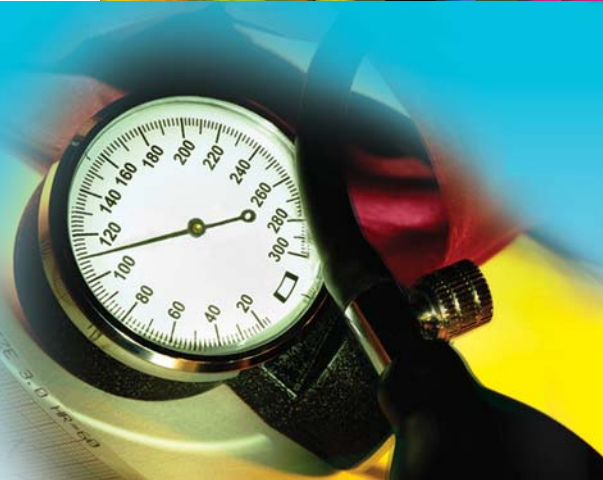


IN BRIEF:



# Your Guide To Lowering Your Blood Pressure With DASH



What you eat affects your chances of developing high blood pressure (hypertension). Research shows that high blood pressure can be prevented—and lowered—by following the Dietary Approaches to Stop Hypertension (DASH) eating plan, which includes eating less salt and sodium.

High blood pressure, which is blood pressure higher than 140/90 mmHg,\* affects more than 65 million—or 1 out of every 3—American adults. Another 59 million Americans have prehypertension, which is blood pressure between 120/80 and 140/89 mmHg. This increases their chances of developing high blood pressure and its complications.

High blood pressure is dangerous because it makes your heart work too hard, hardens the walls of your arteries, and can cause the brain to hemorrhage or the kidneys to function poorly or not at all. If not controlled, high blood pressure can lead to heart and kidney disease, stroke, and blindness.

*\* Blood pressure is usually measured in milligrams of mercury, or mmHg.*

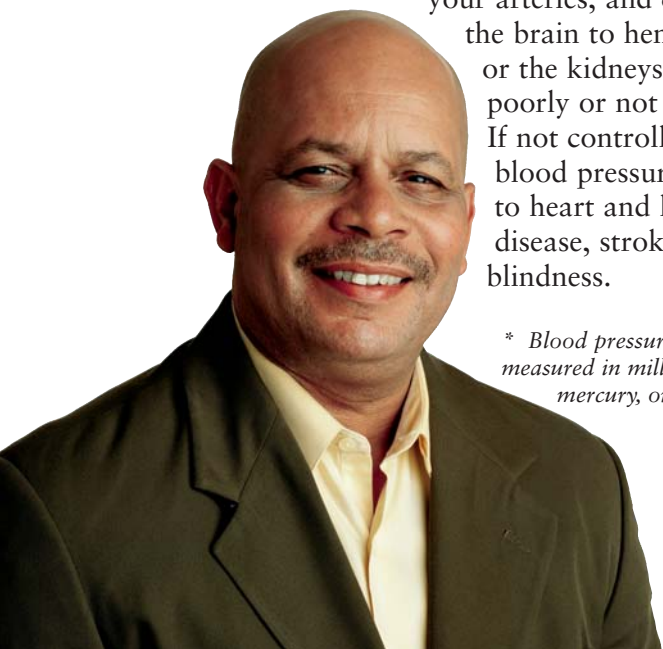
But high blood pressure can be prevented—and lowered—if you take these steps:

- Follow a healthy eating plan, such as DASH, that includes foods lower in salt and sodium.
- Maintain a healthy weight.
- Be moderately physically active for at least 30 minutes on most days of the week.
- If you drink alcoholic beverages, do so in moderation.

If you already have high blood pressure and your doctor has prescribed medicine, take your medicine, as directed, and also follow these steps.

## The DASH Eating Plan

The DASH eating plan is rich in fruits, vegetables, fat-free or low-fat milk and milk products, whole grains, fish, poultry, beans, seeds, and nuts. It also contains less salt and sodium; sweets, added sugars, and sugar-containing beverages; fats; and red meats than the typical American diet. This heart healthy way of eating is also lower in saturated fat, *trans* fat, and cholesterol and rich in nutrients that are associated with lowering blood pressure—mainly potassium, magnesium, and calcium, protein, and fiber.



U.S. Department of Health and Human Services  
National Institutes of Health  
National Heart, Lung, and Blood Institute

## How Do I Make the DASH?

The DASH eating plan requires no special foods and has no hard-to-follow recipes. It simply calls for a certain number of daily servings from various food groups.

The number of servings depends on the number of calories you're allowed each day. Your calorie level depends on your age and, especially, how active you are. Think of this as an energy balance system—if you want to maintain your current weight, you should take in only as many calories as you burn by being physically active. If you need to lose weight, eat fewer calories than you burn or increase your activity level to burn more calories than you eat.

What is your physical activity level? Are you mostly:

- Sedentary? You do only light physical activity that is part of your typical day-to-day routine.
- Moderately active? You do physical activity equal to walking about 1.5–3 miles a day at 3–4 miles per hour, plus light physical activity.
- Active? You do physical activity equal to walking more than 3 miles per day at 3–4 miles per hour, plus light physical activity.

Use the chart below to estimate your daily calorie needs.

## Your Daily Calorie Needs

Gender	Age (years)	Calories Needed for Each Activity Level		
		Sedentary	Moderately Active	Active
Female	19–30	2,000	2,000–2,200	2,400
	31–50	1,800	2,000	2,200
	51+	1,600	1,800	2,000–2,200
Male	19–30	2,400	2,600–2,800	3,000
	31–50	2,200	2,400–2,600	2,800–3,000
	51+	2,000	2,200–2,400	2,400–2,800

Now that you know how many calories you're allowed each day, find the closest calorie level to yours in the chart on page 3 called "Following the DASH Eating Plan." This shows roughly the number of servings from each food group that you can eat each day.

Next, compare DASH with your current eating pattern. Fill in the "What's on Your Plate and How Much Are You Moving?" chart on page 4 for 1–2 days to compare what you usually eat with the DASH plan—and note how active you are. This should help you decide what changes you need to make in your food choices—and in the sizes of the portions you eat.

"A Day With the DASH Eating Plan" on page 6 shows a sample menu based on about 2,000 calories a day. Increase or decrease the serving sizes for your own calorie level. This chart also shows the two levels of sodium, 2,300 and 1,500 milligrams, that DASH allows each day. Because fruits and vegetables are naturally lower in sodium than many other foods, DASH makes it easier to eat less sodium. Try it at the 2,300-milligram level (about 1 teaspoon of table salt). Then, talk to your doctor about gradually lowering it to 1,500 milligrams a day. Keep in mind: The less salt you eat, the more you may be able to lower your blood pressure.

Choose and prepare foods with less salt, and don't bring the salt shaker to the table. Be creative—try herbs, spices, lemon, lime, vinegar, wine, and salt-free seasoning blends in cooking and at the table. And, because most of the salt, or sodium, that we eat comes from processed foods, be sure to read food labels to check the amount of sodium in different food products. Aim for foods that contain 5 percent or less of the Daily Value of sodium. Foods with 20 percent or more Daily Value of sodium are considered high. These include baked goods, certain cereals, soy sauce, some antacids—the range is wide.

## DASH Tips for Gradual Change

Make these changes over a couple of days or weeks to give yourself a chance to adjust and make them part of your daily routine:

- Add a serving of vegetables at lunch one day and dinner the next, and add fruit at one meal or as a snack.
- Increase your use of fat-free and low-fat milk products to three servings a day.
- Limit lean meats to 6 ounces a day—3 ounces a meal, which is about the size of a deck of cards. If you usually eat large portions of meats, cut them back over a couple of days—by half or a third at each meal.
- Include two or more vegetarian-style, or meatless, meals each week.

# Following the DASH Eating Plan

Use this chart to help you plan your menus—or take it with you when you go to the store.

Food Group	Servings Per Day			Serving Sizes	Examples and Notes	Significance of Each Food Group to the DASH Eating Plan
	1,600 Calories	2,000 Calories	2,600 Calories			
Grains*	6	6–8	10–11	1 slice bread 1 oz dry cereal† 1/2 cup cooked rice, pasta, or cereal	Whole wheat bread and rolls, whole wheat pasta, English muffin, pita bread, bagel, cereals, grits, oatmeal, brown rice, unsalted pretzels and popcorn	Major sources of energy and fiber
Vegetables	3–4	4–5	5–6	1 cup raw leafy vegetable 1/2 cup cut-up raw or cooked vegetable 1/2 cup vegetable juice	Broccoli, carrots, collards, green beans, green peas, kale, lima beans, potatoes, spinach, squash, sweet potatoes, tomatoes	Rich sources of potassium, magnesium, and fiber
Fruits	4	4–5	5–6	1 medium fruit 1/4 cup dried fruit 1/2 cup fresh, frozen, or canned fruit 1/2 cup fruit juice	Apples, apricots, bananas, dates, grapes, oranges, grapefruit, grapefruit juice, mangoes, melons, peaches, pineapples, raisins, strawberries, tangerines	Important sources of potassium, magnesium, and fiber
Fat-free or low-fat milk and milk products	2–3	2–3	3	1 cup milk or yogurt 1 1/2 oz cheese	Fat-free (skim) or low-fat (1%) milk or buttermilk; fat-free, low-fat, or reduced-fat cheese; fat-free or low-fat regular or frozen yogurt	Major sources of calcium and protein
Lean meats, poultry, and fish	3–6	6 or less	6	1 oz cooked meats, poultry, or fish 1 egg‡	Select only lean; trim away visible fats; broil, roast, or poach; remove skin from poultry	Rich sources of protein and magnesium
Nuts, seeds, and legumes	3 per week	4–5 per week	1	1/3 cup or 1 1/2 oz nuts 2 Tbsp peanut butter 2 Tbsp or 1/2 oz seeds 1/2 cup cooked legumes (dry beans and peas)	Almonds, hazelnuts, mixed nuts, peanuts, walnuts, sunflower seeds, peanut butter, kidney beans, lentils, split peas	Rich sources of energy, magnesium, protein, and fiber
Fats and oils <sup>f</sup>	2	2–3	3	1 tsp soft margarine 1 tsp vegetable oil 1 Tbsp mayonnaise 2 Tbsp salad dressing	Soft margarine, vegetable oil (such as canola, corn, olive, or safflower), low-fat mayonnaise, light salad dressing	The DASH study had 27 percent of calories as fat, including fat in or added to foods
Sweets and added sugars	0	5 or less per week	≤ 2	1 Tbsp sugar 1 Tbsp jelly or jam 1/2 cup sorbet, gelatin 1 cup lemonade	Fruit-flavored gelatin, fruit punch, hard candy, jelly, maple syrup, sorbet and ices, sugar	Sweets should be low in fat

\* Whole grains are recommended for most grain servings as a good source of fiber and nutrients.

† Serving sizes vary between 1/2 cup and 1 1/4 cups, depending on cereal type. Check the product's Nutrition Facts label.

‡ Since eggs are high in cholesterol, limit egg yolk intake to no more than four per week; two egg whites have the same protein content as 1 oz of meat.

<sup>f</sup> Fat content changes serving amount for fats and oils. For example, 1 Tbsp of regular salad dressing equals one serving; 1 Tbsp of a low-fat dressing equals one-half serving; 1 Tbsp of a fat-free dressing equals zero servings.

Abbreviations: oz = ounce; Tbsp = tablespoon; tsp = teaspoon.

# What's on Your Plate and How Much Are You Moving?

Use this form to track your food and physical activity habits before you start on the DASH eating plan or to see how you're doing after a few weeks. To record more than 1 day, just copy the form. Total each day's food groups and compare what you ate with the DASH eating plan at your calorie level.

Date:			Number of Servings by DASH Food Group							
Food	Amount (serving size)	Sodium (mg)	Grains	Vegetables	Fruits	Milk products	Meats, fish, and poultry	Nuts, seeds, and legumes	Fats and oils	Sweets and added sugars
<b>Example:</b> whole wheat bread, with soft (tub) margarine	2 slices 2 tsp	299 52	2						2	
<b>Breakfast</b>										
<b>Lunch</b>										
<b>Dinner</b>										
<b>Snacks</b>										
<b>Day's Totals</b>										
2,000 calorie level example: Compare yours with the DASH eating plan at your calorie level.		2,300 or 1,500 mg per day	6–8 per day	4–5 per day	4–5 per day	2–3 per day	6 or less per day	4–5 per week	2–3 per day	5 or less per week
Enter your calorie level and servings per day:										
<b>Physical Activity Log</b> Aim for at least 30 min of moderate-intensity physical activity on most days of the week. When your heart is beating noticeably faster, the activity is probably moderately intense.			30 min 5 min	Moderate walking Cleaning						
Record your minutes per day for each activity:		Time:	Type of activity:							

- Increase servings of vegetables, brown rice, whole wheat pasta, and cooked dry beans. Try casseroles and stir-fry dishes, which have less meat and more vegetables, grains, and dry beans.
- For snacks and desserts, use fruits or other foods low in saturated fat, *trans* fat, cholesterol, sodium, sugar, and calories—for example, unsalted rice cakes; unsalted nuts or seeds, raisins; graham crackers; fat-free, low-fat, or frozen yogurt; popcorn with no salt or butter added; or raw vegetables.
- Use fresh, frozen, or low-sodium canned vegetables and fruits.

## DASH Hints

- Be aware that DASH has more servings of fruits, vegetables, and whole grain foods than you may be used to eating. These foods are high in fiber and may cause some bloating and diarrhea. To avoid these problems, gradually increase the amount of fruit, vegetables, and whole grain foods that you eat over several weeks.
- If you have trouble digesting milk products, try taking lactase-enzyme pills (available at drug stores and groceries) with milk products. Or buy lactose-free milk, which includes the lactase enzyme.
- If you don't like or are allergic to nuts, use seeds or legumes (cooked dried beans or peas).
- If you take medicines to control your high blood pressure, keep taking them. But tell your doctor that you are now eating the DASH way.

## Other Lifestyle Changes

Making other lifestyle changes while following the DASH eating plan is the best way to prevent and control high blood pressure.

**Lose Weight, If Necessary, While Following DASH**  
DASH is rich in lower calorie foods, such as fruits and vegetables, so it can easily be changed to support weight loss. You can reduce calories even more by replacing higher calorie foods, such as sweets, with more fruits and vegetables. The best way to take off pounds is to do it slowly, over time, by getting more physical activity and eating fewer calories. To develop a weight-loss or weight-maintenance program that's tailored for you, talk to your doctor or registered dietitian.

## Be Physically Active While Following the DASH Eating Plan

Combining DASH with a regular physical activity program, such as walking or swimming, will help you shed pounds and stay trim for the long term. Start with a simple 15-minute walk during your favorite time of day and gradually increase the amount of time you are active. You can do an activity for 30 minutes at one time, or choose shorter periods of at least 10 minutes each. The important thing is to total about 30 minutes of moderate activity on most days. To avoid weight gain or sustain weight loss, try for 60 minutes of moderate-to-vigorous activity each day.

## Make the DASH for Life

DASH can help you prevent and control high blood pressure. It can also help you lose weight, if you need to. It meets your nutritional needs and has other health benefits for your heart. So get started today and make the DASH for a healthy life.

## To Learn More

Contact the National Heart, Lung, and Blood Institute (NHLBI) for information on heart disease and heart health.

NHLBI Health Information Center  
P.O. Box 30105  
Bethesda, MD 20824-0105  
Phone: 301-592-8573  
TTY: 240-629-3255  
Fax: 301-592-8563

Also check out these heart health resources:

NHLBI Web site: [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

“Dietary Guidelines for Americans 2005” and “A Healthier You”: [www.healthierus.gov/dietaryguidelines/](http://www.healthierus.gov/dietaryguidelines/)

“Your Guide to Lowering Blood Pressure With DASH”: <http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/index.htm>

“Your Guide to Lowering High Blood Pressure”: [www.nhlbi.nih.gov/hbp/index.html](http://www.nhlbi.nih.gov/hbp/index.html)

“Aim for a Healthy Weight”: [www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/index.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm)

# A Day With the DASH Eating Plan

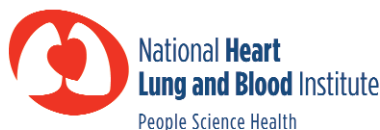
2,300 mg Sodium (Na) Menu	Substitution To Reduce Sodium to 1,500 mg
<b>Breakfast</b> 1/2 cup instant oatmeal 1 mini whole wheat bagel: 1 Tbsp peanut butter 1 medium banana 1 cup low-fat milk	1/2 cup regular oatmeal with 1 tsp cinnamon
<b>Lunch</b> chicken breast sandwich: 2 slices (3 oz) chicken breast, skinless 2 slices whole wheat bread 1 slice (3/4 oz) natural cheddar cheese, reduced-fat 1 large leaf romaine lettuce 2 slices tomato 1 Tbsp mayonnaise, low-fat 1 cup cantaloupe chunks 1 cup apple juice	1 slice (3/4 oz) natural Swiss cheese, low-sodium
<b>Dinner</b> 1 cup cooked spaghetti: 3/4 cup low-salt vegetarian spaghetti sauce 3 Tbsp Parmesan cheese Spinach salad: 1 cup fresh spinach leaves 1/4 cup fresh carrots, grated 1/4 cup fresh mushrooms, sliced 1 Tbsp vinegar and oil dressing 1/2 cup corn, cooked from frozen 1/2 cup canned pears, juice pack	
<b>Snacks</b> 1/3 cup almonds, unsalted 1/4 cup dried apricots 1 cup fruit yogurt, fat-free, no sugar added	

Nutrients Per Day	2,300 mg	1,500 mg
Calories	2,027	2,078
Total fat	64 g	68 g
Calories from fat	28%	30%
Saturated fat	13 g	16 g
Calories from saturated fat	6%	7%
Cholesterol	114 mg	129 mg
Sodium	2,035 mg	1,560 mg
Calcium	1,370 mg	1,334 mg
Magnesium	535 mg	542 mg
Potassium	4,715 mg	4,721 mg
Fiber	34 g	34 g

Abbreviations: mg = milligram; Tbsp = tablespoon;  
 tsp = teaspoon; oz = ounce; g = gram.



U.S. Department of Health and Human Services  
 National Institutes of Health



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 December 2006

# Be more active... for heart health!



## Make activity a heart-healthy habit

If you have or are at risk for heart disease, you may need to be more active. Physical activity may help you keep from getting heart disease, delay its onset, or even improve your condition. But before starting an exercise program, talk to your doctor about what level of activity is right for you.

For many people, your goal should be 30 minutes of moderate-intensity exercise on most or all days. Getting into this heart-healthy habit may be easier than you think! You can:

- Walk a mile in 15 minutes
- Ride a bicycle
- Play tennis
- Take exercise classes
- Do housework or yard work

## Work up to your goal

After you and your doctor agree what level of exercise is right for you:

- Start with 10 minutes a day, 3 days a week.
- Slowly increase to at least 30 minutes every day.
- If you cannot get 30 minutes all at once, break your activity into smaller time periods.
- Set aside time to be active.
- Choose an activity you enjoy, and keep doing it.

## Think of ways to be more active

### If you often...

Read a magazine during your lunch break

Search for the closest parking space

Take the elevator

Sit at the kitchen table and talk with a friend

Watch TV from your chair or couch

### Try this instead...

Take a walk

Choose a parking space far away from the entrance

Take the stairs

Take a walk with your friend

Ride a stationary bike or walk in place

You may want to track your progress to see how well you are doing. This may help you stay with your program.

This information is not meant to replace your doctor's advice.  
Be sure to talk with your doctor about what activities are safe for you.  
Ask about healthy eating and other heart-healthy changes you can make.

# High Blood Cholesterol

## What you need to know



### Why Is Cholesterol Important?

Your blood cholesterol level has a lot to do with your chances of getting heart disease. High blood cholesterol is one of the major risk factors for heart disease. A risk factor is a condition that increases your chance of getting a disease. In fact, the higher your blood cholesterol level, the greater your risk for developing heart disease or having a heart attack. Heart disease is the number one killer of women and men in the United States. Each year, more than a million Americans have heart attacks, and about a half million people die from heart disease.

### How Does Cholesterol Cause Heart Disease?

When there is too much cholesterol (a fat-like substance) in your blood, it builds up in the walls of your arteries. Over time, this buildup causes “hardening of the arteries” so that arteries become narrowed and blood flow to the heart is slowed down or blocked. The blood carries oxygen to the heart, and if enough blood and oxygen cannot reach your heart, you may suffer chest pain. If the blood supply to a portion of the heart is completely cut off by a blockage, the result is a heart attack.

High blood cholesterol itself does not cause symptoms, so many people are unaware that their cholesterol level is too high. It is important to find out what your cholesterol numbers are because lowering cholesterol levels that are too high lessens the risk for developing heart disease and reduces the chance of a heart attack or dying of heart disease, even if you already have it. Cholesterol lowering is important for everyone—younger, middle age, and older adults; women and men; and people with or without heart disease.

#### INSIDE:

What Do Your Cholesterol Numbers Mean?

What Affects Cholesterol Levels?

What Is Your Risk of Developing Heart Disease or Having a Heart Attack?

Treating High Cholesterol

Lowering Cholesterol With Therapeutic Lifestyle Changes (TLC)



## What Do Your Cholesterol Numbers Mean?

Everyone age 20 and older should have their cholesterol measured at least once every 5 years. It is best to have a blood test called a “lipoprotein profile” to find out your cholesterol numbers. This blood test is done after a 9- to 12-hour fast and gives information about your:

- **Total cholesterol**
- **LDL (bad) cholesterol** – the main source of cholesterol buildup and blockage in the arteries
- **HDL (good) cholesterol** – helps keep cholesterol from building up in the arteries
- **Triglycerides** – another form of fat in your blood

If it is not possible to get a lipoprotein profile done, knowing your total cholesterol and HDL cholesterol can give you a general idea about your cholesterol levels. If your total cholesterol is 200 mg/dL\* or more or if your HDL is less than 40 mg/dL, you will need to have a lipoprotein profile done. See how your cholesterol numbers compare to the tables below.

Total Cholesterol Level	Category
Less than 200 mg/dL	Desirable
200-239 mg/dL	Borderline high
240 mg/dL and above	High

LDL Cholesterol Level	LDL Cholesterol Category
Less than 100 mg/dL	Optimal
100-129 mg/dL	Near optimal/above optimal
130-159 mg/dL	Borderline high
160-189 mg/dL	High
190 mg/dL and above	Very high

\*Cholesterol levels are measured in milligrams (mg) of cholesterol per deciliter (dL) of blood.



HDL (good) cholesterol protects against heart disease, so for HDL, higher numbers are better. A level less than 40 mg/dL is low and is considered a major risk factor because it increases your risk for developing heart disease. HDL levels of 60 mg/dL or more help to lower your risk for heart disease.

Triglycerides can also raise heart disease risk. Levels that are borderline high (150-199 mg/dL) or high (200 mg/dL or more) may need treatment in some people.

## What Affects Cholesterol Levels?

A variety of things can affect cholesterol levels. These are things you can do something about:

- **Diet.** Saturated fat and cholesterol in the food you eat make your blood cholesterol level go up. Saturated fat is the main culprit, but cholesterol in foods also matters. Reducing the amount of saturated fat and cholesterol in your diet helps lower your blood cholesterol level.
- **Weight.** Being overweight is a risk factor for heart disease. It also tends to increase your cholesterol. Losing weight can help lower your LDL and total cholesterol levels, as well as raise your HDL and lower your triglyceride levels.
- **Physical Activity.** Not being physically active is a risk factor for heart disease. Regular physical activity can help lower LDL (bad) cholesterol and raise HDL (good) cholesterol levels. It also helps you lose weight. You should try to be physically active for 30 minutes on most, if not all, days.



Things you cannot do anything about also can affect cholesterol levels. These include:

- **Age and Gender.** As women and men get older, their cholesterol levels rise. Before the age of menopause, women have lower total cholesterol levels than men of the same age. After the age of menopause, women’s LDL levels tend to rise.
- **Heredity.** Your genes partly determine how much cholesterol your body makes. High blood cholesterol can run in families.

# What Is Your Risk of Developing Heart Disease or Having a Heart Attack?

In general, the higher your LDL level and the more risk factors you have (other than LDL), the greater your chances of developing heart disease or having a heart attack. Some people are at high risk for a heart attack because they already have heart disease. Other people are at high risk for developing heart disease because they have diabetes (which is a strong risk factor) or a combination of risk factors for heart disease. Follow these steps to find out your risk for developing heart disease.

1

Step 1

Check the table below to see how many of the listed risk factors you have; these are the risk factors that affect your LDL goal.



## Major Risk Factors That Affect Your LDL Goal

- Cigarette smoking
- High blood pressure (140/90 mmHg or higher or on blood pressure medication)
- Low HDL cholesterol (less than 40 mg/dL)\*
- Family history of early heart disease (heart disease in father or brother before age 55; heart disease in mother or sister before age 65)
- Age (men 45 years or older; women 55 years or older)

*\*If your HDL cholesterol is 60 mg/dL or higher, subtract 1 from your total count.*

Even though obesity and physical inactivity are not counted in this list, they are conditions that need to be corrected.

2

Step 2

How many major risk factors do you have? If you have 2 or more risk factors in the table above, use the risk scoring tables on the back page (which include your cholesterol levels) to find your risk score. Risk score refers to the chance of having a heart attack in the next 10 years, given as a percentage.



(Use the Framingham Point Scores on the back page.)

My 10-year risk score is \_\_\_\_\_%.

3

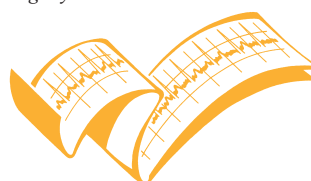
Step 3

Use your medical history, number of risk factors, and risk score to find your risk of developing heart disease or having a heart attack in the table below.

If You Have	You Are in Category
Heart disease, diabetes, or risk score more than 20%*	I. High Risk
2 or more risk factors and risk score 10-20%	II. Next Highest Risk
2 or more risk factors and risk score less than 10%	III. Moderate Risk
0 or 1 risk factor	IV. Low-to-Moderate Risk

*\*Means that more than 20 of 100 people in this category will have a heart attack within 10 years.*

My risk category is \_\_\_\_\_.



## Treating High Cholesterol

The main goal of cholesterol-lowering treatment is to lower your LDL level enough to reduce your risk of developing heart disease or having a heart attack. The higher your risk, the lower your LDL goal will be. To find your LDL goal, see the box for your risk category below. There are two main ways to lower your cholesterol:



- **Therapeutic Lifestyle Changes (TLC)**—includes a cholesterol-lowering diet (called the TLC diet), physical activity, and weight management. TLC is for anyone whose LDL is above goal.
- **Drug Treatment**—if cholesterol-lowering drugs are needed, they are used together with TLC treatment to help lower your LDL.



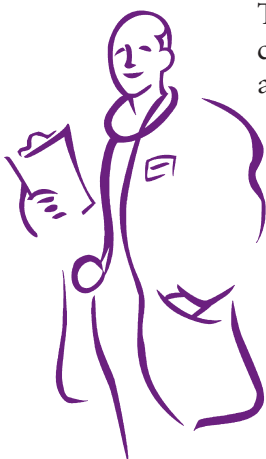
If you are in...

**Category I, High Risk**, your LDL goal is less than 100 mg/dL. You will need to begin the TLC diet to reduce your high risk even if your LDL is below 100 mg/dL. If your LDL is 100 mg/dL or above, you will need to start drug treatment at the same time as the TLC diet. If your LDL is below 100 mg/dL, you may also need to start drug treatment together with the TLC diet if your doctor finds your risk is very high, for example if you have had a recent heart attack or have both heart disease and diabetes.

**Category II, Next Highest Risk**, your LDL goal is less than 130 mg/dL. If your LDL is 130 mg/dL or above, you will need to begin treatment with the TLC diet. If your LDL is 130 mg/dL or more after 3 months on the TLC diet, you may need drug treatment along with the TLC diet. If your LDL is less than 130 mg/dL, you will need to follow the heart-healthy diet for all Americans, which allows a little more saturated fat and cholesterol than the TLC diet.

**Category III, Moderate Risk**, your LDL goal is less than 130 mg/dL. If your LDL is 130 mg/dL or above, you will need to begin the TLC diet. If your LDL is 160 mg/dL or more after you have tried the TLC diet for 3 months, you may need drug treatment along with the TLC diet. If your LDL is less than 130 mg/dL, you will need to follow the heart-healthy diet for all Americans.

**Category IV, Low-to-Moderate Risk**, your LDL goal is less than 160 mg/dL. If your LDL is 160 mg/dL or above, you will need to begin the TLC diet. If your LDL is still 160 mg/dL or more after 3 months on the TLC diet, you may need drug treatment along with the TLC diet to lower your LDL, especially if your LDL is 190 mg/dL or more. If your LDL is less than 160 mg/dL, you will need to follow the heart-healthy diet for all Americans.



To reduce your risk for heart disease or keep it low, it is very important to control any other risk factors you may have such as high blood pressure and smoking.

## Lowering Cholesterol With Therapeutic Lifestyle Changes (TLC)

TLC is a set of things you can do to help lower your LDL cholesterol. The main parts of TLC are:



■ **The TLC Diet.** This is a low-saturated-fat, low-cholesterol eating plan that calls for less than 7 percent of calories from saturated fat and less than 200 mg of dietary cholesterol per day. The TLC diet recommends only enough calories to maintain a desirable weight and avoid weight gain. If your LDL is not lowered enough by reducing saturated fat and cholesterol intakes, the amount of soluble fiber in your diet can be increased. Certain food products that contain plant stanols or plant sterols (for example, cholesterol-lowering margarines) can also be added to the TLC diet to boost its LDL-lowering power.

■ **Weight Management.** Losing weight if you are overweight can help lower LDL and is especially important for those with a cluster of risk factors that includes high triglyceride and/or low HDL levels and being overweight with a large waist measurement (more than 40 inches for men and more than 35 inches for women).

■ **Physical Activity.** Regular physical activity (30 minutes on most, if not all, days) is recommended for everyone. It can help raise HDL and lower LDL and is especially

important for those with high triglyceride and/or low HDL levels who are overweight with a large waist measurement.

## Drug Treatment

Even if you begin drug treatment to lower your cholesterol, you will need to continue your treatment with lifestyle changes. This will keep the dose of medicine as low as possible, and lower your risk in other ways as well.

There are several types of drugs available for cholesterol lowering including statins, bile acid sequestrants, nicotinic acid, fibric acids, and cholesterol absorption inhibitors.

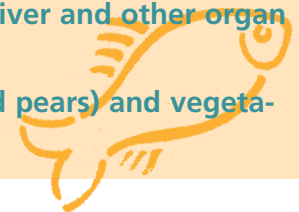
Your doctor can help decide which type of drug is best for you. The statin drugs are very effective in lowering LDL levels and are safe for most people. Bile acid sequestrants also lower LDL and can be used alone or in combination with statin drugs. Nicotinic acid lowers LDL and triglycerides and raises HDL. Fibric acids lower LDL somewhat but are used mainly to treat high triglyceride and low HDL levels. Cholesterol absorption inhibitors lower LDL and can be used alone or in combination with statin drugs.

Once your LDL goal has been reached, your doctor may prescribe treatment for high triglycerides and/or a low HDL level, if present. The treatment includes losing weight if needed, increasing physical activity, quitting smoking, and possibly taking a drug.



**Foods low in saturated fat include fat-free or 1 percent dairy products, lean meats, fish, skinless poultry, whole grain foods, and fruits and vegetables. Look for soft margarines (liquid or tub varieties) that are low in saturated fat and contain little or no *trans* fat (another type of dietary fat that can raise your cholesterol level). Limit foods high in cholesterol such as liver and other organ meats, egg yolks, and full-fat dairy products.**

**Good sources of soluble fiber include oats, certain fruits (such as oranges and pears) and vegetables (such as brussels sprouts and carrots), and dried peas and beans.**



## Resources

For more information about lowering cholesterol and lowering your risk for heart disease, write to the NHLBI Health Information Center, P.O. Box 30105, Bethesda, MD, 20824-0105 or call 301-592-8573, or visit the Web sites listed below:

“Live Healthier, Live Longer”—information on cholesterol lowering ([www.nhlbi.nih.gov/chd](http://www.nhlbi.nih.gov/chd))

“Aim for a Healthy Weight” ([www.nhlbi.nih.gov](http://www.nhlbi.nih.gov))

“Your Guide to Lowering High Blood Pressure” ([www.nhlbi.nih.gov/hbp](http://www.nhlbi.nih.gov/hbp))

[www.nutrition.gov](http://www.nutrition.gov)

[www.fitness.gov](http://www.fitness.gov)

[www.cdc.gov/tobacco](http://www.cdc.gov/tobacco)

“Healthfinder”—a free gateway to reliable consumer health and human services information developed by the U.S. DHHS ([www.healthfinder.gov](http://www.healthfinder.gov))

“MedlinePlus”—up-to-date, quality health care information from the National Library of Medicine at the National Institutes of Health ([www.medlineplus.gov](http://www.medlineplus.gov))

# Men

## Estimate of 10-Year Risk for Men

(Framingham Point Scores)

Age	Points
20-34	-9
35-39	-4
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	11
70-74	12
75-79	13

Total Cholesterol	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
<160	0	0	0	0	0
160-199	4	3	2	1	0
200-239	7	5	3	1	0
240-279	9	6	4	2	1
≥280	11	8	5	3	1

	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
Nonsmoker	0	0	0	0	0
Smoker	8	5	3	1	1

HDL (mg/dL)	Points
≥60	-1
50-59	0
40-49	1
<40	2

Systolic BP (mmHg)	If Untreated	If Treated
<120	0	0
120-129	0	1
130-139	1	2
140-159	1	2
≥160	2	3

Point Total	10-Year Risk %
<0	< 1
0	1
1	1
2	1
3	1
4	1
5	2
6	2
7	3
8	4
9	5
10	6
11	8
12	10
13	12
14	16
15	20
16	25
≥17	≥ 30

10-Year risk \_\_\_\_\_%

# Women

## Estimate of 10-Year Risk for Women

(Framingham Point Scores)

Age	Points
20-34	-7
35-39	-3
40-44	0
45-49	3
50-54	6
55-59	8
60-64	10
65-69	12
70-74	14
75-79	16

Total Cholesterol	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
<160	0	0	0	0	0
160-199	4	3	2	1	1
200-239	8	6	4	2	1
240-279	11	8	5	3	2
≥280	13	10	7	4	2

	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
Nonsmoker	0	0	0	0	0
Smoker	9	7	4	2	1

HDL (mg/dL)	Points
≥60	-1
50-59	0
40-49	1
<40	2

Systolic BP (mmHg)	If Untreated	If Treated
<120	0	0
120-129	1	3
130-139	2	4
140-159	3	5
≥160	4	6

Point Total	10-Year Risk %
< 9	< 1
9	1
10	1
11	1
12	1
13	2
14	2
15	3
16	4
17	5
18	6
19	8
20	11
21	14
22	17
23	22
24	27
≥25	≥ 30

10-Year risk \_\_\_\_\_%

