

Athero Basics

A Deeper Look at Atherosclerosis, Your Risk Factors, and Questions for Your Doctor

Did you know that high levels of LDL-C (also known as “bad” cholesterol) can contribute to plaque buildup in your arteries?

It’s a progressive disease called atherosclerosis, or athero for short. It can start in early adulthood and get worse over time. LDL (bad) cholesterol along with other health factors, such as a family history of early heart disease, diabetes, high blood pressure, smoking, and being overweight, can all play a role in the formation of plaque. Take a few minutes to read through this guide. You’ll find out about how athero progresses and whether it’s something you should be concerned about and find a list of questions you can ask your doctor.

A Deeper Look at Atherosclerosis

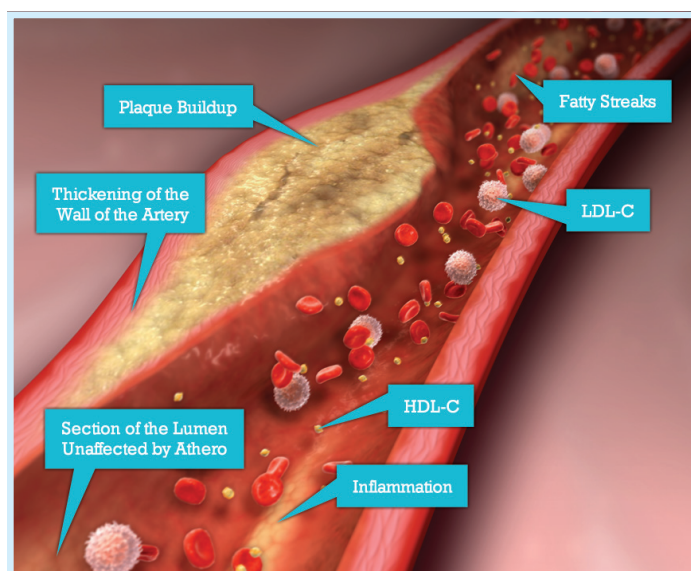
Atherosclerosis is the progressive buildup of plaque in the arteries. Take a look at the illustration to the right to get a better understanding of athero. Then, if you have concerns about athero or have questions about treatment options, talk to your doctor.

Section of the Lumen Unaffected by Atherosclerosis:

Atherosclerosis: The lumen is the hollow space inside the artery. Blood flows through the lumen as it travels through the body.

HDL-C: “HDL-C” stands for high-density lipoprotein cholesterol. It’s also called “good” cholesterol, in part because it helps return cholesterol to the liver, where it can be removed from the body. This helps keep some cholesterol from building up in the arteries.

Fatty Streaks: Often considered the first sign of atherosclerosis, fatty streaks are mostly made up of



cholesterol inside the wall of the artery. By early adulthood, many people have fatty streaks in their arteries.

Inflammation: After LDL-C enters the wall of the artery, it undergoes changes. These changes spark the secretion of substances and the recruitment of cells in the wall of the artery. Inflammation occurs when the substances, cells, and LDL-C interact in the wall of the artery. Foam cells are formed when cells called macrophages consume the LDL-C. This process contributes to the formation of fatty streaks and plaque buildup.

Thickening of the Wall of the Artery: The wall of the artery actually becomes thicker during the progression of atherosclerosis. This thickening is due to plaque buildup within the artery wall over time.

Continued on next page

Plaque Buildup: Also called atherosclerosis, fatty streaks may build into plaque over time, and plaque may continue to build within the wall of the arteries.

LDL-C: “LDL-C” stands for low-density lipoprotein cholesterol. It’s also called “bad” cholesterol, in part because it is one of the major building blocks of atherosclerosis. When high levels of LDL-C exist in the bloodstream, cholesterol may infiltrate and build up in the wall of the artery.

Should You Be Concerned?

While LDL cholesterol is a major factor, here are a few other health factors that may also contribute to the progression of atherosclerosis.

- A family history of early heart disease
- Diabetes
- High blood pressure
- Cigarette smoking
- Overweight/obesity

If you have high cholesterol and any of the factors listed above, be sure to talk to your doctor about steps you can take to manage your cholesterol.

Key Questions for Your Doctor

Having an ongoing dialogue with your doctor is a good way to understand how high cholesterol and other health factors can contribute to the progression of atherosclerosis. If you have questions, don’t be afraid to ask. Here are a few questions you might want to ask your doctor.

- What are some of the potential dangers of atherosclerosis?
- How can my high cholesterol contribute to the progression of atherosclerosis?
- Do my health factors increase my risk for atherosclerosis?

- Can you tell me more about bruits (pronounced brew-ees), the ankle/brachial index, and how they are used to indicate atherosclerosis?

Living a Healthy Lifestyle Can Help

Making the right diet choices now can help you steer your cholesterol in the right direction tomorrow. And exercise is also an important part of any plan to lower cholesterol. If your cholesterol is too high, your doctor or nutritionist may recommend the Therapeutic Lifestyle Changes (TLC) diet, developed by the National Institutes of Health. The TLC diet is a low-saturated fat, low-cholesterol eating plan that recommends

- Less than 7% of calories come from saturated fat
- Dietary cholesterol be limited to less than 200 mg per day
- You consume only enough calories to maintain a desirable weight and to avoid weight gain

As for getting in shape, it doesn’t mean training for a marathon. Try to get at least 30 minutes of moderate-intensity activity, most days, if not all days of the week. First, talk to your doctor before beginning any exercise program. Then try walking around the block, playing with the kids or grandkids, or dancing to your favorite music. It may do more than just help you manage your cholesterol levels — it may also boost your self-esteem.

While exercise and diet should be a part of every cholesterol management plan, sometimes they’re just not enough. That’s when it may be time to make an appointment with your doctor to find out if a cholesterol-lowering medication might be right for you.

Cholesterol Basics

Understanding Cholesterol and What You Can Do To Manage It

Knowing terms like “LDL-C,” “HDL-C,” and “triglycerides” can help you manage your cholesterol.

You may have talked with your doctor about managing your cholesterol, specifically lowering your LDL-C (bad cholesterol). One reason to understand LDL-C in particular is that it can play a role in a disease called atherosclerosis (athero for short), the progressive buildup of plaque in the arteries.

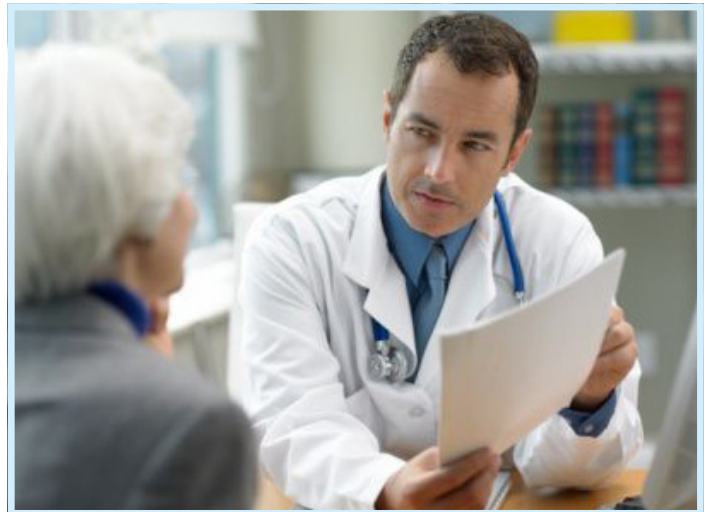
So please take a few minutes to read through the information here. While terms like LDL-C, HDL-C, and triglycerides can sometimes be confusing, it's important to understand them, and to understand how your lifestyle choices can have a major impact on your overall health.

Not All Cholesterol Is Bad

Cholesterol is a lipid that travels through the bloodstream packaged inside a protein called a lipoprotein. There are two lipoproteins your doctor or health care professional may discuss with you — low-density lipoprotein (LDL) and high-density lipoprotein (HDL). There's also another substance doctors evaluate, called triglycerides.

Most of the cholesterol in our blood is made within our bodies, by the liver. It's also found in foods high in saturated fat. It's a vital part of the structure and functioning of our cells. However, too much cholesterol in your blood may lead to atherosclerosis.

Let's take a look at how LDL-C, HDL-C, and triglycerides function in your body.



LDL (bad) cholesterol is a lipoprotein that carries cholesterol throughout the bloodstream as LDL cholesterol, or LDL-C. If you have too much LDL-C circulating in your bloodstream, it can contribute to the buildup of plaque in your arteries. That's why it's so important to talk to your doctor. As a rule, you want to keep your LDL-C low.

HDL (good) cholesterol is considered “good” because it helps return cholesterol to the liver, where it can be eliminated from the body. As a rule, you want your HDL cholesterol high.

Triglycerides are another fat produced by the liver and also found in food. Like high cholesterol, they can be dangerous to your health. As a rule, you want to keep your triglycerides low.

By the Numbers

When you get a cholesterol test, your doctor will give you a series of numbers that measure the amount of different types of cholesterol in your blood. Blood cholesterol levels are measured in milligrams per deciliter of blood (mg/dL). Depending on whether or not you fasted before your test, your results may only include two numbers.

- Total cholesterol
- HDL-C

If you are fasting, your results may include:

- Total cholesterol
- LDL-C
- HDL-C
- Triglycerides

Your total cholesterol is based on your LDL cholesterol (LDL-C), HDL cholesterol (HDL-C), and triglyceride counts. Generally, a lower number for total cholesterol is better.

The tables on the right were developed by the National Cholesterol Education Program (NCEP) to set guidelines for total cholesterol, LDL-C, HDL-C, and triglycerides. These guidelines put cholesterol numbers in different heart disease risk categories, ranging from normal to very high.

While the test will give you an idea of where your numbers fall, the same numbers can mean different things for different people.

And remember, cholesterol isn't just about numbers — it's about being aware of what they mean to your overall health and to the progression of atherosclerosis.

Don't be afraid to ask what your cholesterol number means, based on your complete health history.

TOTAL CHOLESTEROL LEVEL

Less than 200 mg/dL	Desirable
200-239 mg/dL	Borderline high
240 mg/dL or higher	High

LDL "BAD" CHOLESTEROL

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 or higher	Very high

TRIGLYCERIDES (TG)

Less than 150 mg/dL	Normal
150-199 mg/dL	Borderline high
200-499 mg/dL	High
500 mg/dL or higher	Very high

HDL "GOOD" CHOLESTEROL

60 mg/dL or higher	Desirable
Less than 40 mg/dL	Low

The NCEP Interim Report guidelines suggest that some people may benefit from getting their LDL-C even lower, to below 70 mg/dL. And some people for whom a goal of less than 130 mg/dL was previously recommended may benefit from getting their LDL-C to less than 100 mg/dL. Depending on your health profile, lower cholesterol goals may be right for you. Your doctor will evaluate your numbers and decide on an appropriate LDL cholesterol goal.

Other Cholesterol-related Terms

Conversations with your doctor about cholesterol often contain new terms you may not be familiar with. Here are a few key words that are important for you to know, along with their definitions.

Monounsaturated Fat: An unsaturated fat found primarily in plant-based foods such as olive and canola oils. Monounsaturated fats are liquid at room temperature. Eating more monounsaturated fats (instead of saturated fats such as butter and lard) can help lower cholesterol.

Polyunsaturated Fat: An unsaturated fat found primarily in plant-based foods such as corn, sunflower, safflower, and soybean oils. Polyunsaturated fats are liquid or soft at room temperature. Eating more polyunsaturated fats (instead of saturated fats such as butter and lard) can lower cholesterol.

Knowing the bad from the good

An easy way to remember which is the bad cholesterol and which is the good is to think of the first letter of each:

LDL is bad, and you will want to keep it **Low**

HDL is good, and you will want to keep it **High**

Saturated Fat: Saturated fats are usually found in animal products, including fatty meat and dairy products, and are usually solid at room temperature. However, they are also found in some vegetable oils, including coconut and palm oils.

Trans Fats: A number of ingredients do not contain the word “fat” in their names, but they are high in fat content, particularly saturated fat. Examples include glycerol, hydrogenated fats and oils, coconut and coconut oil, palm oil, and palm kernel oil.

Frequently Asked Questions

Q: Where does cholesterol come from?

A: Cholesterol is produced by the liver. It’s also found in foods high in saturated fat, like fatty meats, egg yolks, shellfish, and whole-milk dairy products.

Q: What makes cholesterol good or bad for your health?

A: Cholesterol travels through the bloodstream packaged inside a protein called a lipoprotein. There are two kinds of lipoproteins your doctor might discuss with you — LDL (bad) cholesterol (LDL-C) and HDL (good) cholesterol (HDL-C). LDL cholesterol is considered “bad” because too much of it in your bloodstream can contribute to the progression of atherosclerosis, the buildup of plaque in your arteries. HDL cholesterol is considered “good” because it helps return cholesterol to the liver, where it can be eliminated.

Q: How does LDL cholesterol contribute to health problems?

A: If you have too much LDL cholesterol circulating in your bloodstream, it can begin to build up in your arteries, a disease process called atherosclerosis. For many people, this buildup starts in early adulthood and gets worse over time.

[Continued on next page](#)

Q: How does my medical history relate to managing my cholesterol?

A: Ask your doctor to be sure. If your doctor has told you cholesterol management is especially important for you, it could mean that you have one or more additional health factors that make it even more likely that high cholesterol can contribute to the buildup of plaque in your arteries.

These health factors include things like high blood pressure, personal or family history of early heart disease, obesity, and cigarette smoking. And some diseases, such as diabetes, call for close cholesterol management. Be sure to talk to your doctor for more information about your personal medical history.

Q: How do I find out what my cholesterol numbers mean?

A: The National Cholesterol Education Program (NCEP) publishes general cholesterol guidelines, but based on your individual situation, your doctor may recommend something more specific. Take a look at the general NCEP guidelines for cholesterol shown in this guide, and then talk to your doctor about your specific goals.

Q: How can I lower my cholesterol?

A: Living a healthy lifestyle, such as eating a diet that is low in saturated fats and cholesterol and getting at least 30 minutes of exercise most days, may help lower cholesterol. It also may be able to help you manage other health factors associated with the progression of atherosclerosis. When diet and exercise alone aren't enough, your doctor may add a cholesterol-lowering medicine.

The Low-down on Managing Cholesterol

Making the Choice to Lower Cholesterol by Starting a Healthy Lifestyle

Making diet changes and becoming more active are two factors that can help lower your LDL-C (bad cholesterol). Cholesterol medications may also help.

Managing high cholesterol is important for all adults, especially since a high level of LDL-C (bad cholesterol) is one of the factors that can play a role in a progressive disease called atherosclerosis.

Atherosclerosis, or athero for short, is the buildup of plaque in the arteries. And while you can't change some of the factors that may affect your cholesterol level or contribute to the progression of athero (like genetic makeup or family history), there are things you can do to help control other factors.

Changing your diet, losing weight, and increasing your level of physical activity are all very important ways you can reduce your LDL-C and increase your HDL-C (good cholesterol). But if diet and exercise aren't enough — the case for many people with high cholesterol — your doctor may prescribe a cholesterol-lowering medication.

Below we've put together a list of things you can do to improve your diet and your daily activity level. These changes can help get you back on the road to healthier cholesterol levels, which could help slow the progression of atherosclerosis.

Better Food Choices

Changing the way you've eaten all your life may not be easy, but it's not impossible. You don't have to give up all of your favorite foods, but you may need to reduce your total fat intake, especially saturated fats. Here are a few ways you can make better choices.



- Limit food high in cholesterol, like eggs, whole-milk dairy products, meat, shellfish, and poultry with skin
- Substitute whole grains, fruits, and vegetables for fats
- Read food labels carefully, and always check serving sizes
- Remember that the “% Daily Value” column on food labels is based on a 2,000-calorie diet; adjust daily recommendations if you eat more or fewer calories
- Control portion sizes

Becoming More Active

In addition to eating the right foods, exercising regularly and becoming more active is an important way to help lower your cholesterol. Exercising 30 minutes most days of the week, if not every day of the week, is recommended for most people. It's normal to feel a bit sore and stiff after you first start exercising, but it's not normal to feel pain.

[Continued on next page](#)

Stop exercising if you're really hurting, and see your doctor. Remember to consult your doctor before starting any exercise plan, and then keep these important tips in mind.

- Drink water before, during, and after exercise (even water workouts) to replace the water you lose by sweating
- Wear lightweight, loose-fitting clothes so you can move easily
- Wear supportive athletic shoes for weight-bearing activities
- Remember to have fun! Choose exercises you enjoy so you don't get bored
- Start out slowly and work up to a higher level; don't push yourself too hard at first
- It's OK to take a break when you need one
- Bring a friend — an exercise buddy can help keep you motivated
- Give yourself a small reward every time you reach a goal

Everyday Activities

You may think the only way to add exercise to your daily routine is to go to a gym or run in the park for an hour. The truth is that many regular activities are also good for you. Here are some simple ways to add more activity to your daily schedule.

- Raking the lawn and bagging leaves or grass
- Hanging laundry on a clothesline
- Sweeping
- Ballroom, line, or other dancing
- Walking or hiking
- Recreational swimming
- Yoga

When Diet and Exercise Aren't Enough

Because of uncontrollable factors like genetic makeup and getting older, diet and exercise may not be enough for some people to lower their cholesterol and slow the progression of atherosclerosis. If this is the case for you, your doctor may decide that you need medication. But it's important to remember that medication can't do the job all by itself. You'll still need to eat a healthy diet and exercise regularly to achieve your cholesterol goals.

Additional Resources

If you are looking for more information about cholesterol and atherosclerosis and how they may affect your health, you might find these resources helpful.

American Heart Association

www.americanheart.org

Mayo Clinic

www.mayoclinic.com

National Cholesterol Education Program

www.nhlbi.nih.gov/chd

US AGAINST ATHERO

www.athero.com

Eat Right, Eat Smart

A Guide to Eating Healthy and Making Good Decisions

With a little planning, you can follow a diet that allows you to enjoy many of your favorite foods while lowering your cholesterol.

Managing high cholesterol is one way to help slow the progression of a disease called atherosclerosis (athero for short), the progressive buildup of plaque in the arteries. And one of the first steps in a cholesterol management plan is making diet changes. While many people find that changing a lifetime of eating habits isn't easy — especially when there's little time to prepare healthy meals and junk food is everywhere — there are simple things you can do.

Snack Facts

One area you might want to think about modifying is snacking. Many snacks are high in saturated fat and trans fatty acids, which can increase your cholesterol. But eating a cholesterol-friendly diet doesn't mean



you have to give up snacking entirely. See the chart below for snacking ideas and low-cholesterol ingredients.

At-a-Glance	Use this chart as a quick reminder of what snacks and foods are acceptable in a cholesterol-lowering, athero-friendly diet
TYPE OF FOOD	FOODS ALLOWED
Milk and Cheese	<ul style="list-style-type: none">▪ Skim or 1% milk (liquid, dry, or evaporated)▪ Nonfat or low-fat yogurt▪ Low-fat cottage cheese (1% to 2%)▪ Low-fat cheese (labeled no more than 3 grams of fat per ounce)
Fish, Meat, and Poultry	<ul style="list-style-type: none">▪ Fish▪ Tuna packed in water▪ Poultry without skin, baked, broiled, boiled, or roasted▪ Lean, well-trimmed beef, lamb, pork, or veal
Eggs	<ul style="list-style-type: none">▪ 2 or fewer egg yolks/week▪ Whites (2 whites = 1 whole egg in recipes)▪ Cholesterol-free egg substitutes

Chart continued on next page

TYPE OF FOOD	FOODS ALLOWED
Breads and Cereals	<ul style="list-style-type: none"> ▪ Whole-grain breads ▪ Pasta ▪ Rice ▪ Homemade baked goods using vegetable oils sparingly and with no egg yolks or whole milk
Fats and Oils	<ul style="list-style-type: none"> ▪ Unsaturated vegetable oils such as <ul style="list-style-type: none"> - Rapeseed (canola) - Sesame - Soybean - Sunflower - Olive ▪ Margarines made from one of the above oils ▪ Mayonnaise or salad dressing made from one of the above oils
Seeds and Nuts	<ul style="list-style-type: none"> ▪ Tend to be high in fat, but the fat is usually unsaturated. Intake should be limited, mainly because of calories
Desserts	<ul style="list-style-type: none"> ▪ Fruits and fruit ices ▪ Sherbet ▪ Angel food cake ▪ Gelatin ▪ Low-fat yogurt, frozen low-fat yogurt ▪ Cakes, cookies, and muffins made with fat- and cholesterol-modifying recipes
Snacks	<ul style="list-style-type: none"> ▪ Graham crackers ▪ Rye crisp ▪ Melba toast ▪ Soda crackers ▪ Bagels ▪ English muffins ▪ Fruits and vegetables ▪ Ready-to-eat cereals ▪ Air-popped popcorn

How to Read a Food Label

Learning how to read food labels may be one of the most important cholesterol management steps you can take. Most — if not all — of the details of what the product contains can be found simply by turning to the back of a package and reading the information.

Food labels may seem confusing at first, but remember, they are all set up the same way. Read more below about seven important numbers from a typical food label and what they mean for you.

[Continued on next page](#)

Serving Size: All the information on the label is based on one serving. Even a small package may contain several servings.

Calories: Your daily intake of calories should be just enough to help maintain a desirable weight. On average, women should consume about 1,800 calories daily, while men should consume about 2,500 calories daily.

Total Fat: Try to keep your daily intake of total fat to about 30% of your calories. That’s an average of 3 grams of fat for every 100 calories.

Saturated Fat: Commonly found in animal products, including fatty meat and dairy products, as well as in coconut and palm oils. Remember that less than 7% of your daily calories should come from saturated fat.

Trans Fat: Food labels also list the amount of trans fat. It’s commonly found in vegetable shortening, snack foods, and commercial baked goods like cookies and crackers.

Cholesterol: For a healthy diet, try to keep the amount of cholesterol in the foods you eat to under 200 milligrams per day.

Dietary (Soluble) Fiber: Try to eat 20 to 30 grams of dietary fiber per day. Some sources are peas, beans, and apples. To calculate how much soluble fiber you eat, multiply the number of servings of soluble fiber by the number of grams in each serving.

Back to Basics

If your cholesterol level is too high, your doctor or nutritionist may recommend the Therapeutic Lifestyle Changes (TLC) diet, developed by the National Institutes of Health. The TLC diet is a low-saturated-fat, low-cholesterol eating plan that recommends that

- Less than 7% of calories come from saturated fat
- Dietary cholesterol be limited to less than 200 mg per day
- You consume only enough calories to maintain a desirable weight and to avoid weight gain

If you follow these dietary guidelines and your cholesterol is not lowered enough, you can try increasing the amount of dietary (soluble) fiber in your diet. Certain food products, such as cholesterol-lowering margarines and other products, can be added to the TLC diet to boost its cholesterol-lowering power.

Continued on next page

Sizing Up Portions

Another frequent trouble spot for people who are concerned about cholesterol and atherosclerosis is portion size, even when eating low-fat foods. Judging serving sizes is a learned skill. To get an idea of what a serving size looks like, consider these everyday equivalents.

SERVING SIZE OF FOOD	EVERYDAY EQUIVALENT
<ul style="list-style-type: none"> ■ 3 ounces of chicken or beef ■ ½ cup of cooked pasta ■ 1½ ounces of hard cheese ■ 1 medium piece of fruit ■ 1 teaspoon of margarine ■ 2 tablespoons of peanut butter ■ 1 pancake 	<ul style="list-style-type: none"> ■ A deck of cards ■ 1/2 baseball ■ 4 stacked dice ■ A baseball ■ A die ■ Ping-pong ball ■ A compact disc

Remember, while diet should be a part of every cholesterol management plan, sometimes it's just not enough. That's when it may be time to make an appointment with your doctor to find out if a cholesterol-lowering medication might be right for you.

Suggested Reading and Resources

If you are looking for more information on how to manage your cholesterol through a healthy diet, the following resources may be helpful.

Eating Out: Your Pocket Guide to Healthy Dining
Mayo Clinic Nutritionists

This handy reference guide is small enough to fit in your pocket and will help you make good, healthy selections from the menu when dining at a restaurant. Available through Barnes & Noble.

Total Nutrition: The Only Guide You'll Ever Need
Victor Herbert and Genell J. Subak-Sharpe
St. Martin's Press, 1995

This book draws on the experience of more than 50 health professionals from the Mount Sinai School of Medicine. It examines the basics of good nutrition, breaks down nutritional needs according to age, and analyzes the role nutrition plays in fighting common diseases. Available through Barnes & Noble.

Fitting Fitness In

Finding Time for Fitness Around Your Busy Schedule

From low-cholesterol diets to new exercise routines, being diagnosed with high cholesterol brings challenging lifestyle changes and new health concerns.

Making diet and exercise changes is one way to help lower your LDL-C (bad cholesterol). Finding the time for those changes can be challenging. But making changes is important since high levels of LDL-C can contribute to atherosclerosis, the progressive buildup of plaque in your arteries.

You may find it difficult to find the time, especially since many of us spend more and more time at work. Early-morning meetings make it tough to grab a healthy breakfast, and working late makes home-cooked meals unlikely. And exercise? It's hard to find the time. What's a working person to do? Start by reading through this guide. You'll discover ways to be more active and eat healthier, without taking too much time away from your career.

Get the Motor Running

The best way to get started on a plan to become more active is to check with your physician before you start exercising. Then you can get your motor running with one of these simple ideas.

Lunch Walk: Go for a walk on your lunch break. Try to find different walking routes and vary them throughout the week to keep it interesting. It might even be possible to walk indoors on rainy days. Try incorporating stair climbing during the indoor walks for extra kick.



Don't Call! Walk to a colleague's office instead of phoning or sending an e-mail.

Commuter Rewards: Walk to and from work. If your commute is too long to walk, try parking farther away from the door or even a few blocks away and then walking the rest of the distance.

Office Squats: Stand in front of your office chair with your feet shoulder-width apart. Bend your knees as if you were sitting on the chair, keeping your weight on your heels. When your upper legs are parallel with the seat of the chair, slowly rise to your original standing position.

Calf Raises: While holding on to your desk or a file cabinet for balance, raise your heels off the floor and then lower them.

Eating on the Go

You don't have to stay home all the time to eat healthy. When you're eating in a restaurant, remember these tips to help you manage your cholesterol.

- Make special requests off the menu
- Eat a small portion and take the rest home
- Eat foods that are baked, broiled, or steamed instead of fried
- Ask for sauces and salad dressings on the side

And at social events, choose low-fat items from buffets and take smaller portions of higher-fat foods. Naturally, you should always consult with your doctor when starting any new diet.

Avoid Weapons of Mass Consumption

Store-baked goods or mass-produced foods are often made with saturated fats. It's best to limit your intake of these high-cholesterol foods. If you do buy store-baked goods, try to buy foods made with polyunsaturated or monounsaturated oils and egg whites, or try these tasty alternatives.

- Fruit ices
- Sherbet
- Gelatin
- Frozen low-fat yogurt
- Graham crackers
- Rye crisp, soda crackers, and Melba toast
- Bagels and fruit
- Whole-grain cereals
- Air-popped popcorn

First Steps for Fitness

Easy Exercise Tips to Help Lower Your Cholesterol

Exercise alone — or in combination with diet — is an essential part of any plan to lower cholesterol and slow the progression of atherosclerosis, the progressive buildup of plaque in the arteries.

One major cause of atherosclerosis is high levels of LDL (bad) cholesterol, which play a role in the formation of plaque buildup. For many of us, this plaque starts building up in our arteries in early adulthood and gets worse over time. Other factors can also contribute to the progression of atherosclerosis, including a family history of early heart disease, diabetes, high blood pressure, cigarette smoking, and being overweight or obese.

How much exercise you need will depend on your medical condition and your current fitness level. Talk to your doctor before starting any new exercise plan. Then try to exercise at least 30 minutes a day, most days of the week — if not all days. Ask your doctor about an exercise plan that's best for you, and then try to stick with it every day.

Here are some great tips on how you can start an exercise program, and, more importantly, how you can stick with it.

Staying Motivated

Remember to have fun! Choose exercises that you enjoy. Read, listen to music, or watch TV while riding a stationary bicycle. Find fun things to do, like taking a walk through the zoo or around the mall. Take dance lessons. Learn how to play tennis. Go hiking. Whatever the activity, the key is that it should be fun. Try some of these ideas to get started.



- Trick yourself into exercising — painlessly. Take the stairs. Park in the spot farthest from the door
- Mix it up. Try different exercises so that you don't get bored. Walk one day, bicycle the next. Consider activities like dancing and racquet sports, and even chores like raking leaves and cleaning the house, just to add variety
- Find a convenient time and place to exercise so that it becomes part of your daily routine
- Wear comfortable clothes
- Forget what you've heard about "no pain, no gain." It's normal to feel a bit sore and stiff after you first start exercising, but it's not normal to feel pain. Stop exercising if you're really hurting and see your doctor. Remember to start out slowly and work your way up to a higher level. Your body needs time to adjust, so don't push yourself too hard at first

[Continued on next page](#)

- Drink lots of water before, during, and after exercise. Some patients, such as heart failure patients, may be told to limit their fluid intake. Please check with your physician
- Remember that it's OK to take a break when you need one
- Bring a friend. An exercise buddy can help you stick with it
- Give yourself a small reward every time you reach a goal

How Physically Active Are You?

Many people believe that the only way to be physically active is to go to a gym or run in a park for an hour. The truth is that any movement is good for you. You can fit a considerable amount of physical activity into your daily routine by doing chores or things you enjoy. Take a look at the following moderate and vigorous activities that can help keep you fit.

Gardening and Yard Work	
MODERATE (3.5-7.0 CAL/MIN)	VIGOROUS (MORE THAN 7.0 CAL/MIN)
<ul style="list-style-type: none"> ■ Raking the lawn ■ Bagging grass or leaves ■ Light shoveling (less than 10 lb per minute) ■ Weeding garden beds ■ Planting trees ■ Hauling branches ■ Stacking wood 	<ul style="list-style-type: none"> ■ Heavy or rapid shoveling (10 lb or more per minute) ■ Digging ditches ■ Carrying large logs ■ Swinging an axe ■ Pushing a nonmotorized lawn mower
Housework	
MODERATE (3.5-7.0 CAL/MIN)	
<ul style="list-style-type: none"> ■ Scrubbing the floor or bathtub ■ Hanging laundry on a clothesline ■ Sweeping ■ Washing windows 	
Home Repair	
MODERATE (3.5-7.0 CAL/MIN)	VIGOROUS (MORE THAN 7.0 CAL/MIN)
<ul style="list-style-type: none"> ■ Cleaning gutters ■ Refinishing furniture ■ Sanding floors ■ Laying or removing carpet or tiles ■ Painting inside or outside ■ Wallpapering 	<ul style="list-style-type: none"> ■ Carrying heavy loads of 50 lb or more ■ Taking loads of 25 lb or more up a ladder or flight of stairs ■ Handsawing hardwood

Chart continued on next page

Dancing

MODERATE (3.5-7.0 CAL/MIN)

- Ballroom dancing
- Line dancing
- Square dancing
- Modern/disco dancing

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Any energetic dancing

Walking

MODERATE (3.5-7.0 CAL/MIN)

- Walking at 3 to 4.5 mph on a level surface
- Hiking

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Racewalking and aerobic walking at 5 mph or faster
- Mountain climbing

Biking

MODERATE (3.5-7.0 CAL/MIN)

- Biking 5 to 9 mph on level terrain

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Biking more than 9 mph
- Biking on uphill terrain

Warm Weather Sports

MODERATE (3.5-7.0 CAL/MIN)

- Softball
- Basketball — shooting baskets
- Volleyball

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Football
- Soccer
- Beach volleyball

Winter Sports

MODERATE (3.5-7.0 CAL/MIN)

- Downhill skiing — light effort
- Snowmobiling
- Ice skating

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Cross-country skiing
- Downhill skiing — vigorous effort
- Tobogganing
- Playing ice hockey

Chart continued on next page

Calisthenics

MODERATE (3.5-7.0 CAL/MIN)

- Yoga

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Karate
- Judo
- Tae kwon do
- Jujitsu

Water Sports

MODERATE (3.5-7.0 CAL/MIN)

- Recreational swimming
- Aquatic aerobics
- Waterskiing
- Snorkeling
- Kayaking in a lake or in calm water
- Surfing

VIGOROUS (MORE THAN 7.0 CAL/MIN)

- Swimming — steady-paced laps
- Water polo
- Scuba diving
- Water basketball
- Kayaking in white-water rapids

Exercise Safety Tips

Whether you are exercising at the gym or doing daily chores as your activity, one thing remains the same: while it's normal to be sore after you exercise, you shouldn't feel pain. Follow these tips to make sure you stay on your feet and in good shape for the long term. And remember to talk with your doctor before starting a new exercise program. And remember too that healthy, fit bodies come in all sizes. Whatever your size or shape, start exercising now and keep moving for a healthier life.

Stop exercising right away if you

- Feel pain or pressure in the left-chest or mid-chest area — or in the neck, jaw, left shoulder, or left arm
- Feel dizzy or sick
- Break out in a cold sweat
- Experience muscle cramps
- Notice pain in your joints, feet, ankles, or legs — you could hurt yourself if you ignore the pain

Slow down if you run out of breath

- Breathlessness is a sign that you may be overexerting yourself

Drink water

- Drink water before, during, and after exercise (even water workouts) to replace the water you lose by sweating
- Water helps every cell and organ in your body function properly — it cushions your joints, improves your bowel patterns, and keeps your body cool

Don't exercise right after you eat

- Wait about 2 hours to perform strenuous activity after a big meal (but a 5- to 10-minute walk is OK)
- If you eat small meals, you can exercise more often

[Continued on next page](#)

Wear the right clothes

- Wear lightweight, loose-fitting tops so you can move easily
- Women should wear a good support bra
- Wear supportive athletic shoes for weight-bearing activities
- Wear clothes made of fabrics that absorb sweat and remove it from your skin
- In cold weather, wear a knit hat to keep you warm when you exercise outdoors
- Wear a hat with a brim to help keep you cool when you exercise outdoors
- Wear sunscreen to cover all areas of exposed skin when you exercise outdoors

Fitness-related Reading and Other Resources

If you are looking for more information about how exercise can help you manage your cholesterol, the following resources may be helpful.

Walking . . . A Step in the Right Direction

NIH Publication No. 07-4155, 2007

This pamphlet explains how to start a walking program, presents a sample program, and shows stretches for warming up and cooling down. The pamphlet is available by contacting the NIH by phone at 301-496-4000 or through its Web site at www.nih.gov.

Great Shape: The First Fitness Guide for Large Women. Pat Lyons and Debby Burgard, iUniverse Incorporated, 2000

This book urges women to be physically active for fun, fitness, and positive body image instead of for weight loss. The authors describe a healthy lifestyle program that includes walking, swimming, dancing, martial arts, bicycling, and more. Available from www.bodypositive.com.

Don't Weight: Eat Healthy and Get Moving NOW

Kelly Bliss, Buy Books on the Web.com, 2001

This book provides motivation and information for self-care and self-acceptance. It also teaches problem-solving techniques. There is information that will help you plan and achieve a fitness program that can be sustained for a lifetime. Available by phone at 877-KellyBliss or on the Web at www.kellybliss.com.

Water Exercise

Martha D. White, Human Kinetics Publishers, 1995

This book presents water exercises for fitness and muscle tone as well as exercises for injuries, post-surgical rehabilitation, and other special needs. Available from Human Kinetics, P.O. Box 5076, Champaign, IL 61825, by phone at 800-747-4457, or on the Web at www.humankinetics.com.

Easy Does It Yoga

American Yoga Association, Simon & Schuster Adult Publishing Group, 2000

This book presents a program of exercises, breathing, meditation, philosophy, and nutrition for older adults and those with physical limitations. Simple chair exercises and more challenging standing and floor exercises are described. Available from the American Yoga Association, P.O. Box 19986, Sarasota, FL 34276 or on the Web at www.americanyogaassociation.org.

Blood Pressure Basics

How High Blood Pressure Can Be a Big Problem for Your Arteries

Even as a single risk factor, high blood pressure is a serious condition that can put you at risk for other diseases, such as heart attack, stroke, or kidney failure.

When combined with other risk factors like high cholesterol or smoking, the impact of high blood pressure on your arteries can be alarming. Blood pressure measures the force of blood against the walls of your arteries as your heart pumps blood to circulate it through your body. Of course, it's natural for blood pressure to have its ups and downs throughout the day. But if it stays up over time, it's called high blood pressure (HBP), or hypertension.

Increased blood pressure can speed up the progression of atherosclerosis, the buildup of plaque in arteries. As your arteries continue to harden and become less flexible, your heart struggles to get the blood it needs to function, which raises the risk of a heart attack or stroke.

What Causes High Blood Pressure?

For many people with high blood pressure, doctors can't pinpoint a single, specific cause. This condition is called primary, or essential, high blood pressure. In other cases, when a known medical problem or medication is identified as the cause, it is called secondary high blood pressure.

While it's not often easy to spot a cause, there are many known factors that can make your blood pressure go up. If you can control these factors, you can help manage your blood pressure.

Why Blood Pressure Checks Are So Important

There are usually no signs or symptoms of high blood pressure, making it even more important to have your blood pressure checked regularly. You can have high blood pressure for years without knowing it. There's only one way to find out if you have high blood pressure — getting your blood pressure checked.

Regular “pressure checks” let your doctor and you keep tabs on your important blood pressure numbers. An explanation of what your blood pressure numbers mean is on the next page.

Systolic blood pressure has proven to be a strong predictor of cardiovascular risk. Reducing a high systolic number can help prevent serious complications of high blood pressure. High diastolic blood pressure — the bottom number — is higher than 90 mm Hg (millimeters of mercury). And for each 10-point increase in diastolic blood pressure, your risk of death from heart disease and stroke doubles.

What Do My Blood Pressure Numbers Mean?

When your doctor measures your blood pressure, he or she will generally give you your results as a series of two numbers (for example, 120 over 80). The top (first) number is systolic pressure, which measures the pressure in your arteries when the heart beats and pumps blood. The bottom number is diastolic pressure, which measures the pressure when the heart relaxes between beats.

If your blood pressure is over 120/80 mm Hg (millimeters of mercury) and changes in your diet and exercise haven't helped reduce your blood pressure, you may need medication. High blood pressure is dangerous because it produces increased pressure on artery walls and can damage them, which can speed up the progression of athero. Controlling your blood pressure is especially important if you have other risk factors, such as diabetes or kidney disease.

BLOOD PRESSURE LEVELS FOR ADULTS*

Category	Systolic	Diastolic
Normal	<120 mmHg	and <80 mmHg
Prehypertension	120–139 mmHg	or 80–89 mmHg
Hypertension	≥140 mmHg	≥90 mmHg

*These categories apply to adults 18 or older who are not taking medicine for high blood pressure, do not have a short-term serious illness, and do not have other conditions such as diabetes or kidney disease. In people with diabetes or chronic kidney disease, a reading of 130/80 mm Hg or higher is considered high blood pressure. According to the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, a blood pressure of 140/90 mm Hg or higher is considered high, but for those with diabetes or chronic kidney disease, a reading of 130/80 signifies high blood pressure.

The Keys to Treating High Blood Pressure

Some people can control high blood pressure with lifestyle changes, as noted below. These changes may even be able to help prevent high blood pressure from developing in the first place. Whether or not you need medicine is a decision only your doctor can make. However, here is a list of five steps that anyone can take to help control blood pressure.**

- 1. Maintain a healthy weight.** Losing weight can help lower your blood pressure. If you need to lose weight, talk with your doctor about ***eating a healthy diet*** and ***developing an exercise plan***.
- 2. Enjoy physical activity.** Get 30 minutes of physical activity most days of the week. Examples include brisk walking, bicycling, raking leaves, and gardening. *Just remember to talk with your doctor before starting any exercise program.*
- 3. Eat right.** Add more fruits and vegetables to your diet and focus on foods low in saturated fat, total fat, and cholesterol. Avoid foods that are high in salt, and try experimenting with other spices, garlic, and onions instead of salt.
- 4. Limit alcohol intake.** Too much alcohol raises blood pressure and adds calories. If you drink, limit yourself to one drink a day (for women) or two drinks a day (for men). A drink is 12 ounces of beer, 5 ounces of wine, or 1½ ounces of liquor.
- 5. Quit smoking.** Smoking can increase your blood pressure, which increases your risk for heart disease as well as a number of other serious health problems. If you smoke, quit smoking right away.

**Medicine for high blood pressure is not a substitute for these healthy-living guidelines. If your doctor prescribes medicine to help lower your blood pressure, it's important that you still follow the lifestyle changes recommended by your doctor.

Diabetes Basics

Staying on Top of Your Condition

The risk of atherosclerosis is greater in people with diabetes than those without the disease.

Diabetes can also more than double your risk for coronary artery disease (CAD), peripheral artery disease (PAD), and stroke.

When you have diabetes, your body is unable to properly convert sugar, starches, and other foods into energy. As a result, plaque builds in arteries more readily in people with diabetes than in people who don't have the disease. This makes it even more important for people with diabetes to also manage their high cholesterol.

Types of Diabetes

There are two general types of diabetes: type 1 and type 2.

In type 1 diabetes, the body's immune system stops the pancreas from producing the insulin the body needs to process glucose. Type 1 diabetes, which is usually diagnosed in children and young adults, is a serious condition, but in general, it can be managed with insulin therapy.

With type 2 diabetes, the body does not properly use the insulin it produces. This results in high glucose levels. Eventually, the body cannot produce enough insulin to keep up with its demand. As with type 1, when glucose builds up in the blood instead of going into cells, your body's cells will starve for energy.

What Causes Diabetes?

While the exact cause of diabetes remains unknown, factors such as genetics, obesity, and an inactive lifestyle can all play a role.

According to the American Diabetes Association (2009), whether you have type 1 or type 2 diabetes, the possible complications can be serious and can include

- Heart disease
- Eye damage and blindness
- Kidney damage
- Nerve damage

Did You Know?

In 2006, more than 23 million American adults were estimated to have diabetes. And about 57 million American adults have prediabetes, a condition in which blood glucose levels are higher than normal but not high enough to be called diabetes. Diabetes is more common in African Americans, Hispanics, Native Americans, and Asian Americans/Pacific Islanders, as well as older people. According to the National Cholesterol Education Program, people with type 2 diabetes are at the same risk for coronary events as people without diabetes who already have established heart disease.

Continued on next page

The chart below shows common complications of diabetes and how managing glucose levels can help lower risk.

POTENTIAL COMPLICATIONS	ESTIMATED REDUCTION OF THE RISK OF COMPLICATION
Impaired kidney function	30% to 70% (with better control of blood pressure and blood glucose levels)
Severe vision loss	50% to 60% (with proper screening and treatment with laser therapy)
Amputation	45% to 85% (with implementation of foot care programs that include regular examinations and patient education)
Heart disease and stroke	20% to 50% (with improved control of blood pressure and cholesterol and lipid levels)

Source: Centers for Disease Control and Prevention

How Is Diabetes Diagnosed?

There are a few different tests that doctors use to diagnose diabetes

- **Fasting plasma glucose test** — This convenient test measures your blood glucose after you have fasted for at least 8 hours. It is used to detect diabetes or prediabetes
- **Oral glucose tolerance test** — This test, which is used to diagnose diabetes or prediabetes, measures your blood glucose after fasting for at least 8 hours and 2 hours after you drink a glucose-containing beverage
- **Casual (random) plasma glucose test** — In this test, your blood glucose is checked no matter when you ate your last meal. This test, along with other symptoms, is used to diagnose diabetes but not prediabetes

Test results that come back positive for diabetes should be confirmed by repeating the fasting plasma glucose test or an oral glucose tolerance test on a different day.

TABLE 1. FASTING PLASMA GLUCOSE TEST

Plasma Glucose Result (mg/dL)	Diagnosis
99 and below	Normal
100 to 125	Prediabetes
126 and above	Diabetes*

*Confirmed by repeating the test on a different day.

TABLE 2. ORAL GLUCOSE TOLERANCE TEST

2-Hour Plasma Glucose Result (mg/dL)	Diagnosis
139 and below	Normal
140 to 200	Prediabetes
Above 200	Diabetes*

*Confirmed by repeating the test on a different day.

The Keys to Treating Diabetes

If you have been diagnosed with prediabetes or diabetes, there are a number of different ways to manage it. Your doctor is your best source for which plan is right for you, so be sure to schedule regular checkups to find out what steps you should take to get your diabetes under control.

As a general guide, here are a few things you can do every day to help lower your blood glucose:

- **Follow a low glycemic diet** — A diet low in sugars and starches and high in fiber can help lower glucose levels
- **Be physically active** — At least 30 minutes of exercise a day, most, if not all, days of the week, can help
- **Take your diabetes medicine** — There are a number of different treatment options available, but they won't work if you don't take them
- **Check your blood glucose regularly** — The only way to know if you are keeping your blood glucose in check is by checking your levels every day as directed by your doctor

Obesity Basics

Working With Your Genes and Metabolism

Did you know that obesity makes you more likely to have high blood pressure, high cholesterol, and diabetes than those at a normal weight?

These risk factors can speed up the progression of atherosclerosis, the buildup of plaque in arteries. Atherosclerosis can cause serious harm to your cardiovascular system and increase your risk for heart disease and stroke.

Of course, obesity can also increase your risk even if you don't have any other risk factors, because it actually changes the structure of your heart and makes your heart work even harder.

How Is Obesity Diagnosed?

Obesity is generally measured using the body mass index (BMI). The BMI formula is a helpful measure of body composition because it provides a good estimate of body fat based on your height and weight.

Measuring your waistline is also helpful. For women, a waistline 35 inches or higher is considered high-risk for abdominal obesity, potentially increasing the risk for coronary heart disease (CHD). For men, a waistline 40 inches or higher is considered high-risk.

What Causes Obesity?

Research is pointing to another cause of obesity—genetics. The rate at which your body converts food to energy can vary from person to person. Your metabolism can affect how your body processes the fat in your diet. While genes can sometimes determine if you will develop certain conditions that can lead to obesity disorders, in some cases genetics may merely increase the chance of becoming obese.

The Keys to Treating Obesity

If you are overweight or obese, talk to your doctor about the health risks associated with carrying extra weight. Your doctor can also help you figure out ways to lose weight safely. The first step may be to get more exercise and to change your diet to include more fiber, fruits, and vegetables, and avoid foods that are higher in saturated fats and cholesterol. It's the lifestyle choices you make every day that can have a big impact.

Sometimes, though, you might need some extra help in achieving your weight goal. Currently, there are a few types of drugs approved by the FDA for weight loss and weight maintenance. Some drugs work by blocking an enzyme that helps break down fat. This prevents the fat from being absorbed. Other medications can be used for short-term weight loss treatment (12 weeks or less). These drugs help curb hunger by increasing levels of hormones in the brain that can control your appetite.

According to the National Institutes of Health, the normal BMI range is 18.5 to 24.9. A BMI of 25 to 29.9 is labeled overweight, and a BMI of 30 or above is called obese.

Smoking & Athero

How Your Habit Can Increase Your Risks

Cigarette smoking is a risk factor for coronary heart disease (CHD) and other forms of cardiovascular disease.

When added to other risk factors, smoking cigarettes increases the risk for atherosclerosis even more. Smoking tobacco can damage the cells that line your arteries. It can also raise your blood pressure. Either way, if you smoke, you're increasing your risks for atherosclerosis. What's more, even secondhand smoke may affect the cells that line your arteries.

Why Quit?

More evidence shows that quitting smoking reduces the risk for cardiovascular events within a few months after quitting. If you are a smoker, try quitting immediately. It may be hard at first, so ask your doctor to suggest a smoking-cessation aid or program.

If you have tried to quit before and have been unsuccessful, try again. Many people need more than one attempt before reaching their goal.

Treatment Options

Cigarettes contain nicotine, which is very addictive, making smoking both physically and emotionally hard to stop. Some people find it helpful to join smoking-cessation programs or support groups. These programs can provide skills to help you quit, like understanding why you smoke and how you can resist the temptation to start smoking again.

Some people also add medicines to help reduce the symptoms of withdrawal. In fact, your chances of success may be doubled if you use nicotine replacement therapy. There are currently a few different

kinds of treatment aids and medications approved to help you kick the habit. Always remember to talk with your doctor about options that may be appropriate for your particular health situation.

Nicotine replacement therapy (NRT)

There are different kinds of NRTs available in the United States — patches, gum, nasal sprays, inhalers, and lozenges. A prescription is needed for nasal sprays and inhalers; the rest are available over the counter. Each one helps you quit by replacing the nicotine that was delivered by smoking.

Other options

There are other types of medicines designed to help reduce the symptoms associated with nicotine withdrawal. Both help alleviate withdrawal symptoms by affecting the place in your brain where the nicotine has its effect. As always, talk with your doctor about which treatment option is best for you.

The Keys to Kicking the Habit

Sometimes the key to becoming smoke-free is getting the help that you need. So give yourself the advantage of these hints, offered by the authoritative National Institutes of Health.

Step 1: Set a Quit Date

Choose a date and mark it on your calendar. Tell your family and friends that you've decided to quit.

Step 2: Select a Quitting Method

There is no single way to become smoke-free that is right for everyone. The trick is to find what works for you. Some people go "cold turkey" and stop smoking completely, all at once. Others call quitlines or get counseling.

Step 3: Consider Getting Extra Help

There are medicines that may help with the feelings of withdrawal that many people get when they quit smoking. Talk to your doctor about options that may be appropriate for your particular health situation.

Step 4: Plan for Your Quit Day

In the days before you quit, make sure you're ready.

- Stock up on oral substitutes, such as sugarless gum and carrot sticks
- Decide on what extra help you may need, and make the necessary arrangements. This may include nicotine replacement therapy (NRT) or a quit-smoking program
- Sign up for a quit-smoking support class, or get the help of a friend who has quit smoking

Step 5: Stop Smoking on Your Quit Day

These tips can help your quit day — and all the days after you quit — to be a success.

- Get rid of all cigarettes, lighters, matches, ashtrays, and any other smoking-related items

- Be active: take a walk, exercise, or spend time at a hobby
- Drink lots of water and juices
- Begin using a nicotine replacement, if desired and approved by your doctor
- Start attending a quit-smoking class
- Avoid alcohol, or reduce your drinking, to keep your resolve strong
- Avoid situations where the urge to smoke is strong

For more information on becoming smoke-free, try these valuable resources.

American Heart Association

www.americanheart.org
7272 Greenville Avenue
Dallas, TX 75231
Phone: 800-242-8721

American Cancer Society

www.cancer.org
National Center
1599 Clifton Road
Atlanta, GA 30329
Phone: 800-227-2345

Questions for Your Doctor About Athero

Get the Conversation Started About Your Risk Factors

Some people may not know what to ask when they talk to their doctor about athero. To get the most out of your appointment with your doctor, write down questions in advance. Here are some to get you started.

1. Do my risk factors contribute to the development of athero?
2. What can I do to lower my risk for the consequences of athero?
3. Can you tell me more about bruits, the ankle/brachial index, or other ways to diagnose athero?
4. What can I do if I am diagnosed with athero?
5. Can you recommend specific lifestyle changes that would be helpful?
6. How do my cholesterol levels affect the progression of athero?
7. What do I need to do to maintain or improve my cholesterol levels?
8. Are there any medications that can help slow the progression of athero?
9. How does smoking contribute to the progression of athero?