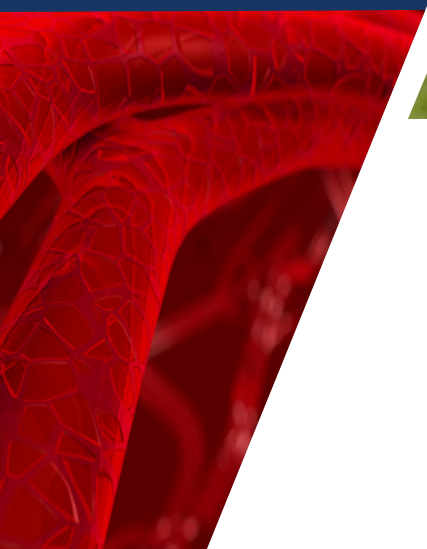
Your Guide to Lowering Your Cholesterol with TLC

Therapeutic Lifestyle Changes



National Heart, Lung, and Blood Institute

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Introduction

High blood cholesterol affects millions of people and raises the risk of heart disease, the leading cause of death in the United States and worldwide. Anyone — even young people and those with no family history of cholesterol problems — can have cholesterol numbers in the unhealthy range.

To understand how cholesterol affects your body, think of a machine filled with tubes. Fluid moves through the tubes to keep the machine running smoothly. If those tubes get clogged, the machine can't function properly.

Your body works the same way. In the body, tubes called arteries deliver oxygen and nutrients to every organ and tissue of your body. Taking steps to prevent clogs in your arteries can help you lower the risk of harming your body. By keeping your cholesterol level in a healthy range, you help ensure that your arteries don't get clogged by plaque and can work properly.

Fortunately, you can take the following steps to help achieve healthy cholesterol levels and protect your health:

- Choose heart-healthy foods.
- Get regular physical activity.
- Aim for a healthy weight.
- Manage stress.
- Quit all forms of tobacco and nicotine, including smoking and vaping.
- Get enough good-quality sleep.
- Keep your blood pressure, cholesterol, and blood sugar in healthy ranges.

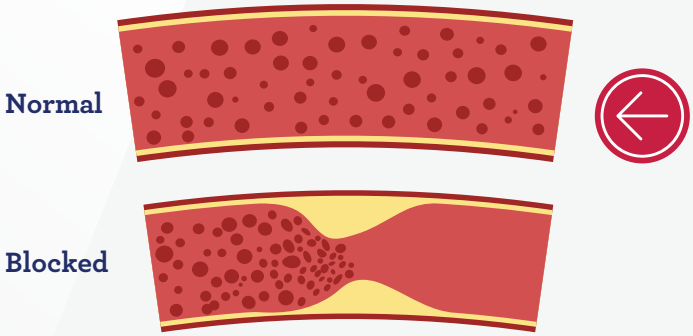
This booklet will show you how to follow the Therapeutic Lifestyle Changes (TLC) Program by using diet, physical activity, and weight management to help control your cholesterol levels (***www.nhlbi.nih.gov/health/blood-cholesterol***) and improve heart health.

What Is the Therapeutic Lifestyle Changes (TLC) Program?

The TLC Program is a three-part plan created by the National Heart, Lung, and Blood Institute (NHLBI) to help you improve your cholesterol numbers. The step-by-step program, first published in 2002, has helped many people achieve healthy cholesterol levels and reduce their risks for heart disease and other serious conditions. TLC is well known for its diet plan, which has inspired many people to adopt a heart-healthy eating regimen.

To design the program, NHLBI scientists consulted with other federal agencies and used scientific evidence and clinical guidelines researched and developed by dozens of experts.

You'll start on the TLC path by adopting a heart-healthy diet and increasing your physical activity while controlling other risk factors for heart disease, such as smoking and high blood pressure. As the program continues, you and your healthcare provider will set goals for your cholesterol and blood pressure levels and then monitor your progress.



Normal versus blocked artery.
The image on the top is an enlarged drawing of a normal coronary artery with typical blood flow. On the bottom is an enlarged drawing of an artery narrowed by plaque buildup on the walls of the vessel.

High cholesterol levels can harm your heart health. This fact sheet will help you learn why cholesterol levels matter, what healthy levels are, and what to do if you have high cholesterol (***www.nhlbi.nih.gov/resources/cholesterol-your-heart-what-you-need-know-fact-sheet***).

What Is Coronary Heart Disease?

Coronary heart disease is usually caused by a buildup of cholesterol, a waxy substance, inside the coronary arteries. This buildup develops into plaque and leads to a condition known as atherosclerosis or *hardening of the arteries*. Hardening of the arteries can worsen in people who have uncontrolled high blood pressure.

Cholesterol buildup can affect almost any part of the body, but it is particularly dangerous when it affects the large arteries of the heart. This type of heart disease is called coronary heart disease. About 18.2 million American adults have this condition, making it the most common type of heart disease in the United States.

Unfortunately, there are often no early warning signs. Many people don't experience symptoms until:

- They have chest pain, also called angina
- Blood flow to the heart is blocked, causing a heart attack (***www.nhlbi.nih.gov/health/heart-attack***)
- The heart suddenly stops working — an event known as cardiac arrest

Some complications of coronary heart disease can lead to disability or even death.

Coronary heart disease is scary, but you have the power to lower your risk and enjoy better heart health — the TLC way! A healthy lifestyle is critical to preventing coronary heart disease and its complications, including heart failure and heart rhythm problems. Heart-healthy living can even help prevent high blood pressure, high cholesterol levels, and diabetes.

Everyone Can Take Steps to Protect Their Heart Health

Following the TLC Program helps you reduce your risk for coronary heart disease by managing your cholesterol levels through a healthy diet, physical activity, and weight management. Depending on your cholesterol level, your healthcare provider may recommend that medicines be prescribed to help you achieve healthy cholesterol levels.

Cardiovascular disease, heart disease, and coronary heart disease may sound similar, but they are not one and the same. NHLBI's Know the Difference fact sheet (***www.nhlbi.nih.gov/resources/know-differences-cardiovascular-disease-heart-disease-coronary-heart-disease***) will help you understand how these conditions differ.

Learn more about heart conditions and heart-healthy living by reading NHLBI's health topics on cholesterol (***www.nhlbi.nih.gov/health/blood-cholesterol***), coronary heart disease (***www.nhlbi.nih.gov/health/coronary-heart-disease***), and heart-healthy living (***www.nhlbi.nih.gov/health/heart-healthy-living***). In the back of this booklet, you'll find a list of additional helpful resources and a glossary of terms related to heart health.

Heart Disease Risks and the Role of Cholesterol

More About Cholesterol

Your body needs cholesterol to make hormones, bile acids, vitamin D, and other vital substances. Though our bodies make all the cholesterol we need, some foods — mainly red meat and dairy products — contain cholesterol as well. Learn more about cholesterol on NHLBI's website (***www.nhlbi.nih.gov/health/blood-cholesterol)***.

Cholesterol circulates in the bloodstream in particles called lipoproteins, which have fat (lipid) inside and protein outside. Two main kinds of lipoproteins carry cholesterol in the blood.

- **Low-density lipoprotein, or LDL**, is sometimes called "**bad cholesterol**," because it carries cholesterol to tissues, including the arteries. Most of the cholesterol in the blood is the LDL form. The higher the level of LDL cholesterol in the blood, the greater your risk for heart disease.
- **High-density lipoprotein, or HDL**, is sometimes called "**good cholesterol**," because it takes cholesterol from tissues to the liver, which removes it from the body. But HDL isn't necessarily good for everyone. A low level of HDL cholesterol may predict a higher risk of heart disease for White adults but not for Black adults. Also, studies show that HDL cholesterol does not work well in some people, so they don't get as much protection from heart disease.

It helps to understand a couple of other facts related to cholesterol:

- **Total cholesterol** is the total amount of cholesterol in your blood. It includes both LDL and HDL cholesterol.
- **Triglycerides** ***(www.nhlbi.nih.gov/health/high-blood-triglycerides)*** are another type of fat found in the blood. These fats are produced in the liver and become elevated when certain foods are consumed, such as fried foods, red meat, and full-fat dairy products. High levels of triglycerides are linked to a greater risk for cardiovascular disease.
- Most people can prevent or delay atherosclerosis and heart disease by following the tips in this booklet, as well as other steps for heart-healthy living, such as Life's Essential 8™ (***www.heart.org/en/healthy-living/healthy-lifestyle/lifes-essential-8***). A heart-healthy lifestyle can help people lower their levels of LDL, total cholesterol, and triglycerides while boosting their levels of HDL.

Heart Disease Risk Factors

Health risks are important to understand. A health risk is the chance that something will harm or otherwise affect your health. Risk doesn't mean that something bad is going to happen for sure. It's just a possibility. Different characteristics, called *risk factors*, affect your level of risk (see Box 1).

The main risk factors for unhealthy cholesterol levels are:

Unhealthy Lifestyle Habits

- **Poor eating habits:** Eating a lot of foods high in saturated fat and cholesterol can raise your cholesterol levels. *Saturated fat raises your LDL cholesterol level more than anything else in your diet.* The most common sources of saturated fats and cholesterol are meats and dairy products.
- **Drinking alcohol:** Drinking too much alcohol (more than two drinks a day for men or one drink a day for women) can raise your total cholesterol level. Binge drinking (when a woman has four or more drinks or a man has five or more drinks within about 2 hours) is also a key risk factor for unhealthy cholesterol. Drinking less is better for health than drinking more.
- **Physical inactivity and sedentary behavior:** Physical inactivity — such as spending a lot of time sitting while watching TV or using a computer — is linked to lower levels of HDL cholesterol. Regular physical activity can boost HDL, reduce triglycerides, and help you lose weight or maintain a healthy weight, which also helps lower your LDL.
- **Smoking:** Smoking raises LDL cholesterol and lowers HDL cholesterol, particularly in women.
- **Not getting enough good-quality sleep:** Most adults need 7 to 9 hours of sleep a night. Signs of poor sleep quality include not feeling rested even after getting enough sleep, repeatedly waking up, and having symptoms such as snoring. Sleep deficiency is linked to many health problems, including heart disease, kidney disease, high blood pressure, diabetes, stroke, obesity, and depression.

Family History and Personal Characteristics

- **Genes:** Family members usually have similar cholesterol levels. This suggests that genes affect cholesterol levels, especially if a person has a common inherited cholesterol disorder called familial hypercholesterolemia. Regardless of their genes, everyone can take action to improve their cholesterol levels using TLC. Medicines can also help people who have familial hypercholesterolemia.
- **Race or ethnicity:** Overall, non-Hispanic White people are more likely than other groups to have high levels of total cholesterol. Asian Americans — including those of Indian, Filipino, Japanese, and Vietnamese descent — are more likely to have high levels of LDL cholesterol than other groups, and Hispanic Americans are more likely to have lower levels of HDL cholesterol. Although African Americans tend to have higher levels of HDL cholesterol, they are also more likely to have other risk factors — such as high blood pressure, obesity, or diabetes — that may outweigh any health benefits of higher HDL levels.
- **Sex:** Between ages 20 and 39, men are more likely than women to have high cholesterol. A woman's risk goes up after menopause. Menopause lowers levels of female hormones that may protect against high cholesterol. After menopause, women's levels of total and LDL cholesterol usually go up.

Other Risk Factors

- **High blood pressure** ***(www.nhlbi.nih.gov/health/high-blood-pressure)***: Over time, high blood pressure can damage artery walls, allowing plaque to build up.
- **High blood sugar:** High blood sugar, a sign of diabetes, can damage the inner layers of the arteries and cause plaque buildup.
- **Overweight and obesity** (***www.nhlbi.nih.gov/health/overweight-and-obesity***)**:** Obesity is a disease that tends to increase your LDL level. It also typically raises triglycerides (see Box 2) and lowers HDL. If you are overweight or have obesity, losing weight may help lower your LDL and triglycerides and boost your HDL.
- **Metabolic syndrome** (***www.nhlbi.nih.gov/health/metabolic-syndrome***): High levels of cholesterol and triglycerides in your blood increase your risk. Excess weight tends to increase your levels of LDL cholesterol and triglycerides and lower your HDL level. (See Box 2 to learn more.)
- **Inflammatory diseases:** Conditions such as rheumatoid arthritis or psoriasis cause high levels of inflammation, which can irritate your blood vessels and cause plaque buildup.
- **Older age:** For most people, total cholesterol levels begin to rise around age 20. Plaque buildup starts in childhood and gets worse with age. In men, the risk increases after age 45. In women, the risk increases after age 55.

Box 1: Understanding Risks to Improve Your Heart Health

Several risk factors affect the chance that you will develop heart disease. These include your age, sex, family health history, cholesterol levels, and lifestyle. The more risk factors you have — such as smoking, high blood pressure, or diabetes — the greater the chance you'll develop heart disease. But regular exercise and a healthy diet can help lower your risk.

You can discuss your risks with your healthcare provider, who can help you understand the steps you can take to prevent disease.

This booklet can be a starting point for those discussions — a resource to help you and your family understand heart disease risk factors and make informed decisions to reduce the risk.

- **Women's health conditions:** Your heart disease risk might be raised if you have certain health problems, such as polycystic ovary syndrome. Also, having gestational diabetes or preeclampsia while pregnant can raise your risk. Learn more about women and heart disease (***www.nhlbi.nih.gov/health/coronary-heart-disease/women***).
- **Stress:** Stress may raise levels of certain hormones, such as cortisol, which can cause your body to make more cholesterol.
- **Mental health disorders:** Anxiety, depression, and other disorders can increase the risk of heart disease.
- **Sleep disorders:** Not getting enough good sleep because of sleep apnea, for example, can raise your risk for metabolic syndrome and overweight and obesity.

Medicines

Some medicines may increase the risk of high cholesterol, including these:

- **Arrhythmia medicines,** such as amiodarone
- **Antiviral medicines** used to treat HIV infection
- **Beta blockers** for relieving angina chest pain or treating high blood pressure
- **Chemotherapy medicines** used to treat cancer
- **Diuretics** such as thiazide to treat high blood pressure
- **Immunosuppressive medicines,** such as cyclosporine, to treat inflammatory diseases or to prevent rejection after organ transplant
- **Retinoids** to treat acne
- **Steroids,** such as prednisone, to treat inflammatory diseases, including lupus and psoriasis

Monitor Your Cholesterol and Triglyceride Levels

More than 85 million people over age 20 in the United States have high total cholesterol levels but don't have symptoms. That's why it's important to have your cholesterol levels checked regularly. Here's a general guide to when to get tested:

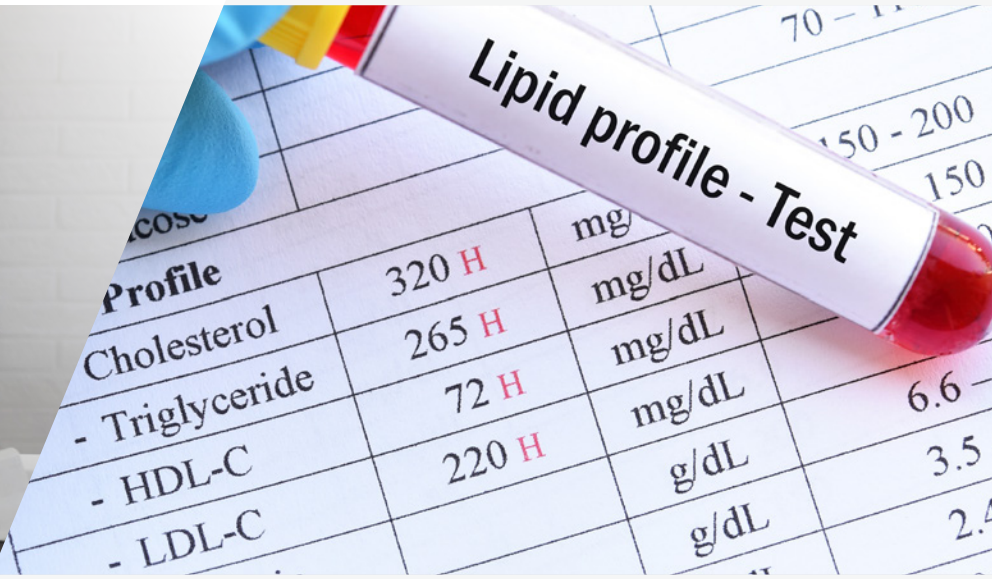
- **Age 19 and younger:** Screening, which begins at ages 9 to 11, should be repeated every 5 years. If you have a family history of high cholesterol, heart attack, or stroke, your child's healthcare provider may suggest testing as early as age 2.
- **Ages 20 to 65:** Younger adults should be screened every 5 years. Men ages 45 to 65 and women ages 55 to 65 should be screened every 1 to 2 years.
- **Older than age 65:** Older adults should be screened every year.

If you have a personal or family history of heart disease or unhealthy cholesterol levels, you'll likely need testing more often. People taking medicines to lower their cholesterol levels (called statins) can benefit from regular testing to ensure that the dose and type of statin are working. If you are taking a statin, talk with your provider about how often is best for you.

Understanding Blood Triglyceride Results

Triglyceride Level in Your Blood	Meaning of Your Result
Less than 150 mg/dL for adults Less than 90 mg/dL for children ages 9–11	**Desirable target level.** Lower levels of triglycerides help keep your heart and other organs and tissues healthy.
150–499 mg/dL	**Moderately raised triglycerides level.** You have an increased risk of coronary heart disease. Your provider will recommend healthy lifestyle changes and may also prescribe medicine.
500 mg/dL or higher	**Severely raised triglycerides level.** Your provider will prescribe medicines and recommend healthy lifestyle changes. High levels of triglycerides can clog tiny blood vessels in the pancreas and lead to pancreatitis (***www.niddk.nih.gov/health-information/digestive-diseases/pancreatitis***).

By the end of 2018, unhealthy cholesterol levels had become more common among U.S. women than among men. Because women are more likely to experience side effects of cholesterol-lowering medicines called statins, they may delay starting statins or stop taking them. This trend is worrisome, because healthcare providers are less likely to prescribe statins for women in the first place, for reasons that are not clear. Talk with your provider about switching medicines or changing how much you take if you have side effects. By working with your healthcare team, you can set up a treatment plan that works for you.



The recommended test for measuring levels of fats in your blood is called a lipid (lipoprotein) panel or profile. For the test, a small sample of blood will be taken from your finger or arm. Your provider may ask you to fast (no food or calorie-containing drinks) for 8 to 12 hours before the test.

The lipid panel measures the levels of LDL, HDL, total cholesterol (which includes all types of cholesterol), and triglycerides. The different forms of cholesterol and triglycerides are measured in milligrams per deciliter of blood, or mg/dL.

Raised triglyceride levels may be caused by overweight or obesity, physical inactivity, cigarette smoking, drinking too much alcohol, or having a diet very high in carbohydrates (60% of calories or higher). A triglyceride level of 150 mg/dL or higher also is part of the metabolic syndrome (see Box 2).

To reduce blood triglyceride levels, try to maintain a healthy weight, engage in regular physical activity, don't smoke, limit alcohol intake, and limit sugars and sugar-sweetened beverages. In some cases, you may also need to take medication.

Knowing your level of risk is important for making decisions about whether you need medicine to treat high cholesterol. It's also key to understanding what healthy lifestyle changes you may need to make to lower your risk of heart disease.

What's Your Risk for Heart Disease?

The **Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimator Plus** app can help guide discussions with your healthcare provider as you consider ways to lower your risk of heart disease and its complications, including heart attack and stroke.

Considering nine factors that affect your heart disease risk, the ASCVD Risk Estimator Plus generates one of four risk scores: low, borderline, intermediate, or high. The Risk Estimator Plus uses your total cholesterol level as well as your LDL and HDL levels.

The main goal of treating cholesterol is to lower the LDL level to reduce the risk of coronary heart disease. People with higher risk scores are often prescribed cholesterol-lowering medicines called statins.

Keep in mind that your cholesterol numbers and your risk score are only part of the story. You should talk to your provider to learn what the numbers mean for you. Also, the ASCVD Risk Estimator Plus isn't the only type of risk calculator — and that's a good thing, because no single risk calculator is right for everyone. Studies show that some calculators overestimate risk for certain groups, while others may underestimate risk.

Box 2: What Is Metabolic Syndrome?

Metabolic syndrome is a group of conditions that together raise your risk of coronary heart disease, diabetes, stroke, and other serious health problems. Metabolic syndrome is also called insulin resistance syndrome. Metabolic syndrome is common in the United States; about 1 in 3 adults have it. The good news is that it is largely preventable. You may have metabolic syndrome if you have three or more of the following conditions:

- **A large waistline:** This is also called abdominal obesity or described as "having an apple shape." Extra fat in the stomach area is a bigger risk factor for heart disease than extra fat in other parts of the body.
- **High blood pressure:** If your blood pressure rises and stays high for a long time, it can damage your heart and blood vessels. High blood pressure can also cause plaque to build up in your arteries. Plaque can cause heart and blood vessel diseases, such as heart attack or stroke.
- **High blood sugar levels:** This can damage your blood vessels and raise your risk of getting blood clots. Blood clots can cause heart and blood vessel diseases.
- **High blood triglycerides:** High levels of triglycerides can raise your levels of LDL cholesterol and increase your risk of heart disease.
- **Low HDL cholesterol, sometimes called "good" cholesterol:** HDL cholesterol can help remove cholesterol from your blood vessels.

Here's how to calculate your own 10-year heart disease risk with the ASCVD Risk Estimator Plus:

Step 1

Click the link below to calculate your heart disease risk. For people between ages 20 and 79, the estimator generates a score, which is the chance of having a heart attack or stroke in the next 10 years. Use the risk score to find your category of risk and your goal LDL level. A risk score of 20% means that, on average, 20 out of 100 people in that risk category will have a heart attack or stroke within 10 years. The risk estimator also gives a lifetime risk for people who are between ages 20 and 59.

https://tools.acc.org/ASCVD-Risk-Estimator-Plus/#!/calculate/estimate/

To use the risk calculator, you'll first need to gather some information, including your cholesterol levels (total cholesterol, LDL, and HDL) and your blood pressure numbers. You'll also add information about your age, whether you smoke, your assigned sex at birth, your race, and whether you have diabetes or are taking medicines to manage high blood pressure or cholesterol. It may be easier to use the risk calculator with your healthcare provider during an office visit, because all the information from your medical records will be available.

Step 2

What is your risk score? After you've entered all your information, the ASCVD Risk Estimator Plus will give you a "risk score" as a percentage. The score represents the chance that a person with risk factors like yours will have a heart attack or stroke in the next 10 years. Ten-year risk scores for ASCVD are categorized this way:

- **Low risk (less than 5%):** Fewer than 5 out of 100 people in this risk group are likely to have a heart attack or stroke in the next 10 years.
- **Borderline risk (5% to 7.4%):** Between 5 and 7 people out of 100 in this risk group are likely to have a heart attack or stroke in the next 10 years.
- **Intermediate risk (7.5% to 19.9%):** Between 8 and 19 people out of 100 in this risk group are likely to have a heart attack or stroke in the next 10 years.
- **High risk (20% or higher):** At least 20 people out of 100 in this risk group are likely to have a heart attack or stroke in the next 10 years.

Step 3

What are your other risk factors for heart disease? The ASCVD Risk Estimator Plus accounts for 10 major risk factors, but there are others to consider. For example, being overweight or having obesity, eating an unhealthy diet, not getting enough physical activity, or having an inflammatory disease such as lupus or rheumatoid arthritis can raise your risk. If you have other important risk factors and a borderline or intermediate ASCVD risk, you and your provider should discuss other heart-healthy lifestyle changes and medicines that can lower your risk. Additional testing may also help with these discussions.

Setting Your Cholesterol Goals

Here's a guide to help you set your lipid goals:

Lipid measure	If you have risk factors for heart disease, you should:
Total cholesterol	Aim for less than 200 mg/dL total cholesterol.
LDL cholesterol	Aim for an LDL level below 130 mg/dL if you have a low ASCVD risk score. Aim for an LDL level below 100 mg/dL if you have a moderate or high ASCVD risk score. Aim for an LDL level below 70 mg/dL if your healthcare provider says you have a very high ASCVD risk score. Aim for an LDL level below 55 mg/dL if your provider says you have an extremely high ASCVD risk score.
HDL "good" cholesterol	Aim for an HDL level of 60 mg/dL or more.
Triglycerides	Aim for a triglycerides level below 150 mg/dL.

Optimizing Your Heart Health with TLC

How TLC Works

The TLC Program focuses on lowering LDL cholesterol. Treatment for high LDL cholesterol centers on the TLC Program but can also include medicines, if needed, based on your risk level.

The program helps control other risk factors for heart disease — such as high blood pressure, overweight or obesity, and diabetes — as well as the tendency of the blood to form clots that can lead to heart attacks or stroke.

The TLC Program has three main parts: diet, physical activity, and weight management. For each, here's what your focus will be:

Diet

- Reduce saturated fat and cholesterol.
- Increase plant stanols and sterols, which are substances found in whole grains, nuts, legumes, and oils, such as olive oil and avocado oil.
- Increase soluble fiber from fruits, beans, and oats.

Physical activity

- Increase physical activity to boost heart health, which includes raising HDL levels (although the effect is not equal for people of all races or ethnicities).

Weight management

- Achieve and maintain a healthy weight.

The TLC Program uses a step-by-step approach to make it easier for you to adopt heart-healthy lifestyle changes. For instance, during the first 3 months of treatment, your main aim will be to lower your LDL cholesterol through diet and physical activity. You will take in only enough calories to achieve or maintain a healthy weight.

How much can you lower your LDL cholesterol by following the TLC Program? The more you engage with the program, the more you can lower your LDL. Researchers have estimated the benefits that people can achieve (Box 3).

Let's look at an example of how the TLC Program can work. Let's say your LDL cholesterol is 200 mg/dL. If you made all the changes suggested in the chart above, it's possible your LDL cholesterol could go as low as 160 mg/dL (a 20% reduction in LDL) or even 140 mg/dL (a 30% reduction). That means you would get your LDL to a healthier level just by following the steps in the program.

Box 3: Potential LDL Lowering Using the TLC Program

	Change	LDL Reduction
Saturated fat	Decrease to less than 7% of calories*	8%–10%
Dietary cholesterol	Decrease to less than 200 mg/day	3%–5%
Weight	Lose 10 pounds if overweight	5%–8%
Soluble fiber	Add 5–10 grams/day	3%–5%
Plant sterols/ stanols	Add 2 grams/day	5%–15%
Total		20%–30%*

Based on an average 2,000-calorie diet for women and an average 2,500-calorie diet for men. A 7% reduction means that, on average, a woman would eat 16 grams less of saturated fat per day (140 fewer calories) than before, and a man would eat 19 grams less of saturated fat per day (175 fewer calories) than before. Visit* ***www.dietaryguidelines.gov* *to find your specific daily calorie needs.*

The TLC Path to Success

As you continue with the program, check your own progress, and consult with your healthcare team. Your healthcare team may include doctors, nurses, a dietitian, or other health professionals. To achieve your cholesterol goal, you may need to add other treatment options.

Box 4 shows what the TLC path to success looks like for many people.

Box 4: A typical TLC path to success

Healthcare Provider Visit **#1**

Start making lifestyle changes.

Start a conversation with your provider about your health goals, including lowering your LDL level. Box 9 has some tips on working in partnership with your provider.

Cut back on foods that are high in saturated fat and cholesterol.

Increase physical activity by a moderate amount.

If you are overweight or have obesity, reduce calories and increase fiber-rich foods to help lower your calorie intake.

Allow 6 weeks

Healthcare Provider Visit **#2**

Check cholesterol levels.

If needed, make additional changes to your diet.

Keep reducing foods high in saturated fat and cholesterol.

Add plant stanols and sterols to your diet.

Increase soluble fiber.

Allow 6 weeks

Healthcare Provider Visit **#3**

Adjust treatment as needed.

Check cholesterol levels.

Keep working on weight management and physical activity.

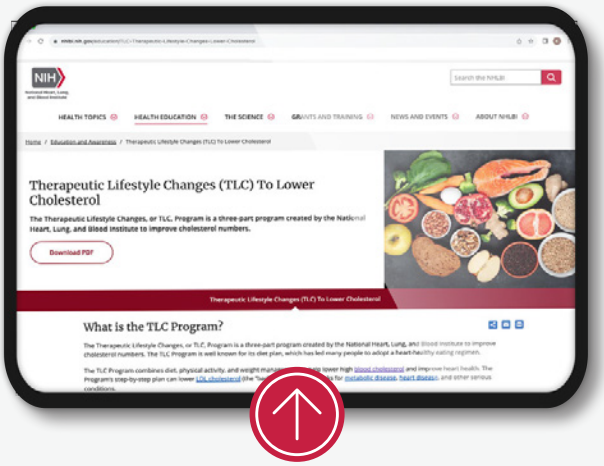
Start medicines for LDL lowering, if needed.

Step **#4**

Keep checking progress

Stick with the TLC Program.

Every 4 to 6 months



Learn more about statins and other cholesterol medicines on the NHLBI website (***www.nhlbi.nih.gov/health/blood-cholesterol/treatment***).

Medicines as Part of Your Cholesterol Treatment Plan

Many people can achieve healthy cholesterol levels and lower their risk of heart disease just by following the TLC Program. Some people can also benefit from medicines to lower LDL cholesterol. Your doctor may prescribe one of various types of medicines that work in different ways.

Statins are the main type of medicine used for lowering LDL cholesterol. They can cut LDL levels by more than half (20% to 55%). Statins also lower triglycerides and raise HDL by moderate amounts.

When you talk with your healthcare provider about whether you can benefit from medicines, consider these discussion points:

- **If your 10-year risk score is 10% or above** and you have one or more risk factors for heart disease — diabetes, unhealthy cholesterol levels, high blood pressure, or tobacco use — your healthcare provider is likely to recommend a cholesterol medicine in addition to TLC.
- **If your 10-year risk score is 7.5% or above** and you have one or more risk factors for heart disease, it's time to talk with your healthcare provider about starting a cholesterol medicine or trying other TLC steps to reduce your risk.

Even if you start taking medicines, stick with your TLC lifestyle changes. They are essential to lowering your risk of heart disease and serious complications.

If you're taking a statin, here are some tips to help you stay safe and get the most benefit from the treatment:

- **Take your statin as prescribed.** Tell your healthcare provider if you have any concerns about your medicine, if you would like to stop taking it, or if you want to explore changing to a different treatment. You should never stop taking a statin on your own because that could increase your risk for a serious complication.
- **Be sure to let your provider know about other medicines you're taking.** This list should include over-the-counter medicines and nutritional supplements.
- **Ask your provider about any medicines, nutritional supplements, or foods you should avoid.** Some things you eat can interact with statins to cause serious side effects or make the medicine less effective. For example, grapefruit (fresh or as juice) affects how your liver breaks down some statins.
- **Tell your provider about side effects.** Some people report muscle problems while taking statins. If you start having muscle pain, your provider may order a blood test to look for muscle damage, although that is rare. The pain may go away if you switch to a different statin.
- **Talk to your provider if you are planning to become pregnant.** Your healthcare provider can tell you about treatment options that may be safe while pregnant. Also, you should not take statins if you are breastfeeding.

Working in Partnership with Your Physician Assistant

Healthcare providers can help you track and manage your cholesterol levels. The better you and your provider communicate, the better you'll understand and carry out your treatment. Your provider may be a doctor, a physician assistant, or a nurse practitioner in a medical office or clinic. Other health professionals, such as a dietitian or a physical activity specialist, may also join your treatment team.

It's important to remember the most important member of the team: **you!** Here are a few tips on how to make your partnership succeed:

- **Prepare for your appointments.** Make a list of questions, symptoms, and concerns.
- **Speak up.** If you don't understand something, ask questions. Even if you think you know the answer, ask and be sure you do. Ask for explanations in simple language.
- **Write it down.** Be sure you write down any treatment instructions. If you have trouble hearing, take a friend with you to the visit.
- **Keep records.** Record your test results at each visit. Learn how to access your electronic health records.
- **Review your treatment.** Use your visit as a chance to go over your treatment plan. Check your goals. Be sure everyone agrees on the next steps.
- **Be open.** If your doctor or another health professional asks you questions, give full and honest answers.
- **Share if you're having trouble following the TLC Program.** Changes can probably be made so that the program is easier for you to follow.
- **Report symptoms or side effects.** If you think something is causing a side effect, briefly say what the symptom is, when it started, how often it occurs, and whether it's been getting worse.
- **Stick with your medicine routine.** Take your medicines as prescribed and try not to miss doses. If you're having trouble with the schedule or think you're having side effects, tell your healthcare provider so together you can update your treatment plan.

Research proves that healthy lifestyle changes — and, if necessary, cholesterol medicines — can cut people's risk for heart disease. Some studies have looked at foods and dietary supplements for possible effects on cholesterol levels. The website of the National Center on Complementary and Integrative Health (***www.nccih.nih.gov/health/cholesterol-management-at-a-glance***) has more information.

Putting TLC Into Action: Eating the Heart-Healthy Way

This section gets into more details about healthy eating — one of the three main parts of the TLC Program.

What you eat greatly affects your cholesterol levels. A diet that emphasizes vegetables, fruits, legumes, nuts, whole grains, and fish can lower your risk of heart disease. The TLC diet aims to help you eat healthy foods, cooked in healthier ways. It's not a temporary diet but rather a new way of eating that is both good for your heart and delicious.

The TLC diet calls for you to have:

- Less than 7% of your daily calories from saturated fat
- Less than 200 mg a day of cholesterol
- 25% to 35% of daily calories from total fat (including saturated fat calories)
- Only enough calories to reach or maintain a healthy weight
- Less than 2,300 mg of sodium a day

In addition, TLC offers other options for lowering LDL that you can include in your diet:

- 2 grams per day of plant stanols or sterols
- 10 to 25 grams per day of soluble fiber

More information is provided about fiber and plant stanols and sterols in later sections of this booklet.

One of your best tools while working with the TLC diet is the Nutrition Facts label on food packages. The label gives the nutritional value and number of servings in an item. You can use it to compare foods and find ones lower in saturated fat, total fat, cholesterol, sodium (salt), and calories.

Box 4. Nutrition Label for Frozen Lasagna

1. Serving Information
2. Calories
3. Nutrients
4. Quick Guide to percent Daily Value (%DV)
   - 5% or less is **low**
   - 20% or more is **high**

Nutrition Facts

4 servings per container
Serving size **1 cup (227g)**

Amount per serving
Calories **280**

	% Daily Value*
Total Fat 9g	**12%**
Saturated Fat 4.5g	**23%**
Trans Fat 0g	
Cholesterol 35mg	**12%**
Sodium 850mg	**37%**
Total Carbohydrate 34g	**12%**
Dietary Fiber 4g	**14%**
Total Sugars 6g	
Includes 0g Added Sugars	**0%**
Protein 15g	
Vitamin D 0mcg	0%
Calcium 320mg	25%
Iron 1.6mg	8%
Potassium 510mg	10%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Here's how to read this label: Starting from the top, you can see that the serving size for the lasagna is 1 cup, or 227 grams. If you eat more than that, you're eating more than a single serving — and consuming more calories than the 280 calories listed on the label.

Food labels help you choose foods that are lower in calories, sugar, and salt. Watching your calories and portion sizes can make it easier to reach or stay at a weight that's healthy for you. A low sodium diet is very important for people whose blood pressure is above 120/80. This fact sheet can help you learn how to read food labels (***www.nhlbi.nih.gov/resources/read-food-label-fact-sheet***).

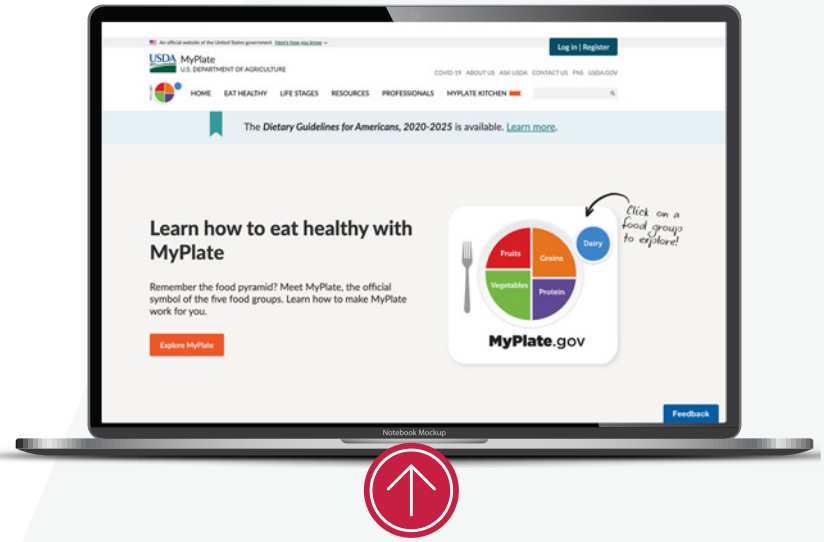
Look at the sample label for frozen lasagna (Box 4).

Nutrition labels are set up so that the actual amount of food or drink in a single serving is shown on the left. Based on a diet of 2,000 calories a day, this amount is then given as a percentage, which appears on the right side of the row containing that element. A single serving contains 9 grams of fat, including 4.5 grams of saturated fat and no *trans* fat. That amount of saturated fat is 23% of the daily recommended amount. If you consumed the entire package of frozen lasagna in one day, you would have consumed nearly all the daily recommended amount of saturated fat (92%). Looking at percentages may be an easier way to "count calories."

The amount and percentages of other elements — cholesterol, sodium, dietary fiber, sugar, protein, and other nutrients — can be read in the same way. Try to make total percentages, based on nutrients consumed, close to 100% of the daily amounts. For the TLC Program, this usually involves reducing saturated fats and increasing fiber (which reduces cholesterol).

When following the TLC Program, the key is to make sure that you are eating less of the foods that will raise cholesterol and more of what will reduce it, such as soluble fiber. To maintain or reduce weight, watching calories is key.

The following sections provide details about the TLC diet, along with tips on what foods to choose and how to prepare them, how to have healthy snacks, and how to eat when you dine out.



For more information and tips for healthy eating, visit the U.S. Department of Agriculture's website (***www.myplate.gov/***) or the Dietary Guidelines for Americans (***www.dietaryguidelines.gov***).

Total fat intake on the TLC Program can represent 25% to 35% of your daily calories. That allows some flexibility in creating a diet that works for you.

Fats

Saturated fat raises your cholesterol more than anything else in your diet. Americans consume an average of 11% of their total calories from saturated fat. Reducing the amount of saturated fat in your diet is an excellent way to lower LDL.

Saturated fat is usually solid at room and refrigerator temperatures. The greatest amounts are found in foods from animals — such as fatty cuts of meat, poultry with the skin, whole milk dairy products, and lard — as well as in some plant oils, including coconut and palm oils.

It's important to keep your saturated fat intake to less than 7% of your calories for the day. Box 5 shows how many grams of saturated fat you can have in a day depending on your caloric intake.

Not all fats raise cholesterol. That's why total fat is not itself a key target of the TLC program. Still, it's important to watch your total fat intake for a couple of reasons:

- Fat is calorie dense. If you need to lose weight, limiting your fat intake can help.
- With the exception of nuts, many foods high in total fat also are high in saturated fat. Eating foods low in total fat will help you eat less saturated fat.

When you do eat fat, make it unsaturated fat — either monounsaturated or polyunsaturated. Unsaturated fat is usually liquid at room and refrigerator temperatures. When used instead of saturated fat, monounsaturated and polyunsaturated fats help reduce cholesterol levels.

What is fat, anyway? It's an essential nutrient that helps the body function. For example, fat supplies energy and helps other nutrients — such as vitamins A, D, E, and K — to work. But there are different types of fat with different effects on cholesterol and heart disease risk. Humans need only small amounts of fat; too much of the saturated type raises cholesterol in the blood.

Box 5: Guide for Saturated Fat Intake

Calories a day	Saturated fat*
1,200	8 grams
1,500	10 grams
1,800	12 grams
2,000	13 grams
2,500	17 grams

**Amounts shown are equal to about 6% of total calories.*

- Monounsaturated fats include olive, canola, sunflower, and peanut oils, as well as avocados.
- Polyunsaturated fats include safflower, sunflower, corn, soybean, and cottonseed oils. Polyunsaturated fat is also present in many kinds of nuts. Some fatty fish, such as salmon, tuna, and mackerel, are also good sources of omega-3 fatty acids — a type of polyunsaturated fat that helps lower cholesterol and triglycerides.

Cholesterol in Food

The cholesterol in the food you eat, known as dietary cholesterol, raises the cholesterol level in your blood, though not as much as saturated fat. However, the two are often found in the same foods. Dietary cholesterol comes only from animal sources of foods, such as liver and other organ meats, shrimp, egg yolks (but not egg whites, which have no cholesterol), and whole milk dairy products, including butter, cream, and cheese. By eating fewer foods that are high in saturated fat, you'll also help lower your intake of cholesterol.

Keep your dietary cholesterol to less than 200 mg a day. The Nutrition Facts label on food products can help you choose items low in saturated fat and cholesterol. See Box 4 for an example of information included on food labels. Keep in mind that some meat, poultry, and fish products are not required to have Nutrition Facts labels.

For eating the TLC way, you'll want to focus on nutrient-dense foods and beverages. Those provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium (salt). Nutrient-dense foods include vegetables, fruits, whole grains, seafood, eggs, beans, peas, lentils, unsalted nuts and seeds, nonfat and low-fat dairy products, and lean meats and poultry — all prepared with little or no added sugar, saturated fat, or sodium.

DASH (Dietary Approaches to Stop Hypertension) is a flexible and balanced eating plan that helps create a heart-healthy eating style for life. DASH is a heart healthy approach that has been scientifically proven to lower blood pressure and have other health benefits. To learn more, go to ***www.nhlbi.nih.gov/DASH***.

Sodium (Salt)

High blood pressure is a major risk factor for heart disease. Studies have found that reducing the amount of sodium in your diet lowers blood pressure. A low sodium diet is especially important for people whose blood pressure is above 120/80 mmHg.

Be sure to read food labels. Some low-fat foods are high in sodium, but you can use the label to choose lower-sodium options.

Vegetables and fruits are naturally low in sodium, saturated fat, and calories. Canned vegetables, however, often contain added salt. Draining and rinsing canned vegetables can reduce the sodium. Look for low-sodium, reduced-sodium, or no-salt-added foods.

Your sodium intake should not exceed 2,300 mg (about 1 teaspoon of salt) a day. That includes all sodium consumed, whether it's added during cooking, used at the table, or already present in food products. Keep in mind that processed foods account for most of the salt and sodium that Americans consume.

You may be surprised to learn which other products have sodium. Soy sauce, monosodium glutamate (MSG), baking soda, frozen foods, and some antacids contain sodium — sometimes a lot of it. Box 6 is a guide to the top 10 sources of sodium in the American diet.

Box 6: Top 10 Sources of Sodium to Watch Out For

For the General Population	For Children Ages 6–18
Breads and rolls	Pizza
Pizza	Mexican dishes
Sandwiches	Sandwiches
Cold cuts and cured meats	Breads and rolls
Soups	Cold cuts and cured meats
Burritos and tacos	Soups
Savory snacks*	Savory snacks*
Chicken	Cheese
Cheese	Plain milk
Eggs and omelets	Poultry

**Chips, popcorn, pretzels, snack mixes, and crackers*
Source: CDC. (2023). Sodium Intake and Health. Accessed December 28, 2023, from ***www.cdc.gov/salt/index.htm.***

Box 7: Spice It Up!

Less salt? Less fat? Don't worry. You can make your mealtimes tasty by using spices and herbs. Here are some guidelines on what goes best with what:

For Meat, Poultry, and Fish	
Beef	Bay leaf, marjoram, nutmeg, onion, pepper, sage, thyme
Lamb	Curry powder, garlic, rosemary, mint
Pork	Garlic, onion, sage, pepper, oregano
Veal	Bay leaf, curry powder, ginger, marjoram, oregano
Chicken	Ginger, marjoram, oregano, paprika, poultry seasoning, rosemary, sage, tarragon, thyme
Fish	Curry powder, dill, dry mustard, lemon juice, marjoram, paprika, pepper

For Vegetables	
Carrots	Cinnamon, cloves, marjoram, nutmeg, rosemary, sage
Corn	Cumin, curry powder, onion, paprika, parsley
Green beans	Dill, curry powder, lemon juice, marjoram, oregano, tarragon, thyme
Greens	Onion, pepper
Peas	Ginger, marjoram, onion, parsley, sage
Potatoes	Dill, garlic, onion, paprika, parsley, sage
Summer squash	Cloves, curry powder, marjoram, nutmeg, rosemary, sage
Winter squash	Cinnamon, ginger, nutmeg, onion
Tomatoes	Basil, bay leaf, dill, marjoram, onion, oregano, parsley, pepper

Try using spices and herbs to make foods tastier, instead of adding salt or fat. Box 7 offers tips on spicing up meals.

Carbohydrates

Carbohydrates are your body's main source of energy. They include fibers, starches, and sugars — everything from bagels and rice to pineapples and beans. Even yogurt has carbohydrates. Some diets take a "low-carb" approach to weight loss, but the key to weight management is controlling the calories you take in. As with other sources of calories (fats and proteins), carbohydrates cause weight gain if you consume more calories than you use up.

There are two main types of carbohydrates:

- **Simple carbohydrates** are sugars and include candy and other sweets. They tend to be high in calories and low in nutrients. Reducing simple sugars and sugar-sweetened beverages in your diet can help you cut down on calories and lose weight.
- **Complex carbohydrates** include starches and fiber, such as cereals, pastas, rice, vegetables, and fruits. Many are low in calories and high in fiber, especially whole grains, which are a key part of a healthy eating plan. These carbs have a more complex chemical structure than simple carbohydrates.

Fiber is a special form of complex carbohydrate that offers certain health benefits. Foods high in fiber can help reduce your risk of heart disease. They're also good for your digestive tract and for overall health. Eating foods rich in fiber can help you feel full on fewer calories, which makes them a good food choice if you need to lose weight.

There are two main types of fiber: **soluble** and **insoluble**. Both have health benefits, but only soluble fiber reduces the risk of heart disease. It does that by helping to lower LDL cholesterol. The main difference between the two types of fiber is how they move through the digestive tract:

People who are trying to lower their sugar intake — especially if they have diabetes — may prefer foods and drinks that contain low calorie sweeteners instead of sugar. Low calorie sweeteners are okay for most adults as a way to help lower calorie intake and control blood sugar levels. But experts recommend limiting children's intake of low-calorie sweeteners because little information is available about the health effects of using low-calorie sweeteners for many years. Water is the best option as a healthy beverage for everyone.

- **Soluble fiber** dissolves into a gel-like substance in the intestines. The substance helps to block cholesterol and fats from being absorbed through the wall of the intestines into the bloodstream. It's found in plant-based foods, such as oats, peas, beans, apples, citrus fruits, carrots, barley, and psyllium. Your body can't digest soluble fiber or absorb it into your bloodstream, but it's vital for good health.
- **Insoluble fiber** moves through the digestive tract largely undissolved. It helps the colon function properly. It's found in many whole-grain foods, fruits (with their skins), vegetables, and legumes (such as dry beans and peas).

Research shows that people who increased their soluble fiber intake by 5 to 10 grams each day — the TLC minimum recommendation — saw their LDL cholesterol drop by about 5%. Increasing it even more, by 10 to 25 grams a day, would be even better.

Four servings (two cups) of cooked beans contain about 25 grams of total fiber, providing plenty of healthy fiber. Most people eat several different high-fiber foods each day to meet their nutrition goals.

So how can you add soluble fiber to your diet? It's easy. Here are some quick tips:

- Choose hot or cold breakfast cereals, such as oatmeal and oat bran, that have 3 to 4 grams of fiber per serving.
- Add a banana, a peach, an apple, berries, or other fruit to your cereal.
- Eat the whole fruit instead of just drinking its juice. A single orange has about 6 times more fiber than a 4-ounce glass of orange juice.
- Add lentils, chickpeas, or beans to salads.

One note of caution: Increase the amount of fiber in your diet gradually. A sudden increase in fiber can cause abdominal cramps, gas, or bloating.

Box 8 lists some foods and the amounts of soluble fiber and total fiber they contain.

Box 8: Fiber Really Counts

Here are some soluble fiber and total fiber amounts (in grams) for various foods:

Whole-grain cereals —½ cup cooked (except where noted)	Soluble Fiber (grams)	Total Fiber (grams)
Barley	1	4
Oatmeal	1	2
Oat bran	1	3
Psyllium seeds, ground (1 tablespoon)	5	6

Fruit—1 medium (except where noted)	Soluble Fiber (grams)	Total Fiber (grams)
Apple	1	4
Banana	1	3
Blackberries (½ cup)	1	4
Citrus (orange, grapefruit)	2	2–3
Nectarine	1	2
Peach	1	2
Pear	2	4
Plum	1	1.5
Prunes (¼ cup)	1.5	3

Vegetables—½ cup cooked	Soluble Fiber (grams)	Total Fiber (grams)
Broccoli	1	1.5
Brussels sprouts	3	4.5
Carrots	1	2.5

Including seafood rich in omega-3 fats in your diet is healthful. But it's not yet clear whether omega-3 supplements are beneficial too. If you are considering taking omega-3 supplements, talk to your healthcare provider. It's especially important to consult your (or your child's) provider if:

- You are pregnant or breastfeeding
- You take medicine that affects blood clotting
- You are allergic to seafood
- You are considering giving a child an omega-3 supplement

Plant Stanols and Sterols

Plant stanols and sterols occur naturally, in small amounts, in many plants. Stanols and sterols – sometimes called phytosterols — come from oils made from soybeans and certain types of pine trees. Stanols and sterols are added to some foods and drinks you can buy in stores. Examples include orange juice with added sterols and spreads used in place of butter that contain added stanols.

As with soluble fiber, plant stanols and sterols help block the absorption of cholesterol from the digestive tract, which helps to lower LDL cholesterol and doesn't affect HDL cholesterol or triglycerides. A daily intake of about 2 grams of stanols or sterols can reduce LDL cholesterol by about 5% to 15%, often within weeks. One tablespoon of stanol buttery spread provides about 1 gram of stanols — about half the suggested amount for a day.

Stanols and sterols are also available as dietary supplements. The evidence for the effectiveness of supplements is weaker than it is for foods containing stanols or sterols. But in general, studies show that stanol or sterol supplements, when taken with meals, can reduce cholesterol levels.

Some foods and dietary supplements that contain stanols or sterols carry a health claim, approved by the U.S. Food and Drug Administration (FDA), that says they may reduce the risk of heart disease when consumed in appropriate amounts.

But remember: Foods with stanols or sterols are not calorie-free. If you use these products, you may need to offset the calories by cutting back elsewhere.

Omega-3 Fatty Acids

Omega-3 fats are found in some fatty fish and plant sources, such as walnuts, flaxseed, chia seeds, and canola and soybean oils. These special fats can lower LDL and triglyceride levels, help control blood pressure, and may lower the risk for heart rhythm problems. Studies suggest that omega-3 fats may also reduce the risk of heart attack and death for those who already have heart disease.

Based on what is now known, try to have about two fish meals every week. Fish high in omega-3 fats include fresh or canned salmon, tuna, sardines, and mackerel. Also add other sources of omega-3 fatty acids to your diet. Pregnant people and nursing mothers should avoid some types of fish and eat those lower in mercury. The FDA offers advice for children and pregnant or breastfeeding people about which fish are lower in mercury (***www.fda.gov/food/consumers/advice-about-eating-fish***).

More information on omega-3 fatty acids is available at ***ods.od.nih.gov/factsheets/Omega3FattyAcids-Consumer/***.

Alcohol

Drinking too much alcohol can have serious health consequences. Alcohol use is linked to high blood pressure, high triglycerides, and lower levels of HDL cholesterol. Drinking too much can damage the heart and liver and can cause some types of cancer.

- Alcohol also has calories. To achieve and maintain a healthy weight, be careful about how many alcoholic beverages you drink. Here are some examples of what one drink equals, along with the calorie content:
- 12 ounces of beer: 150 calories
- 5 ounces of wine: 100 calories
- 1.5 ounces of 80-proof spirits (hard liquor): 100 calories

Foods to Choose for TLC

The TLC diet encourages you to choose a variety of nutritious and delicious foods: fruits, vegetables, legumes (beans and lentils), nuts and seeds, whole grains, low-fat or nonfat dairy products, fish, poultry without the skin, and lean meats in moderate amounts. Box 9 offers a guide to food groups, identifies some foods that fit into the TLC diet, and suggests others that limit or reduce your risk of heart disease.

Box 9: Eating Well With TLC

Here's a breakdown of the TLC diet by food groups:

Breads/Cereals/Grains —
6 or more servings a day (adjust to calorie needs)

Some foods in this group are high in complex carbohydrates and fiber. Breads, grains, and cereals are usually low in saturated fat, cholesterol, and total fat. Other options include pasta, rice, potatoes, low-fat crackers, and low-fat cookies.

Choose foods made from whole grains rather than refined grains. Some foods in this group, especially bakery products, may contain high amounts of added sugars, salt, and fat. Those should be limited.

Vegetables/Dry Beans/Peas —
3 to 5 servings a day

These are important sources of vitamins, fiber, and other nutrients. Beans, lentils, and peas are rich in fiber and good sources of plant protein.

Fresh, frozen, or canned foods in this group — without added fat, sauce, or salt — are all great choices. Frozen vegetables are often less expensive than fresh ones but are just as nutritious.

Fruits — 2 to 4 servings a day

These are important sources of vitamins, fiber, and other nutrients.

Low-Fat Dairy Products — 2 to 3 servings a day, nonfat or low-fat (e.g., 1% milk)

Low- or nonfat dairy products provide at least as much calcium and protein as whole milk options, but with little or no saturated fat.

Choose from nonfat or low-fat milk, buttermilk, yogurt, sour cream, or cream cheese or low-fat cheese (with no more than 3 grams of fat per ounce).

For people with lactose intolerance, plant-based milks (with added vitamins and calcium), reduced-lactose milk, and fermented dairy products (such as yogurt) may be options.

Protein Sources

The TLC diet includes a variety of protein-rich foods in nutrient-dense forms: meats, poultry, and eggs; seafood; and nuts, seeds, and soy products. Beans, peas, and lentils are a part of the protein foods group as well as the vegetable group. Protein is also found in dairy products.

Most of the meats and poultry you eat should be fresh, frozen, or canned and in lean forms (e.g., chicken breast or ground turkey). Limit processed meats such as hot dogs, sausages, bacon, ham, and deli meats.

Skinless poultry and fish are lower in saturated fat than red meat. Be sure to trim any fat from meat and remove any skin from poultry before cooking.

Lean cuts of beef include sirloin tip, round steak, and rump roast; extra-lean hamburger; and cold cuts made with lean meat or soy protein. Lean cuts of pork are center-cut ham, loin chops, and pork tenderloin. Limit organ meats, such as brain, liver, and kidneys, because they are high in cholesterol.

Choose oily fish such as salmon, trout, and herring, which are high in omega-3 fatty acids. Bake, broil, grill, or boil fish. Shellfish — such as shrimp, crab, and lobster — is low in saturated fat and a healthy alternative to many cuts of meat and poultry. Just make sure you don't add salt or saturated fat and avoid frying your food.

Nuts are high in calories and fat, but the fat is mostly in its healthier, unsaturated form. Unsalted nuts, nut butters, seeds, and seed butters are included on the TLC diet. Just be sure the amount you eat fits your desired calorie intake.

Fats/Oils — Amount depends on daily calorie level

Use unsaturated vegetable oils high in unsaturated fat (such as avocado, canola, corn, olive, safflower, and soybean oils), soft or liquid margarines (the first ingredient on the food label should be unsaturated liquid vegetable oil, rather than hydrogenated or partially hydrogenated oil) and vegetable oil spreads, and salad dressings.

Choose products that are labeled as low in saturated fat, which equals 1 gram of saturated fat per serving.

Fresh, frozen, canned, dried fruits — without added sugar — should be among the foods you eat every day. Fresh fruits offer great taste and variety, and they need little or no preparation. Frozen fruit is often less expensive than fresh but just as nutritious. Dried fruits make a handy snack; try mixing raisins with nuts. But if you're watching your calories, you may need to limit your intake of dried fruits and nuts. A serving of dried fruits is only ¼ cup.

Eating the TLC way doesn't mean depriving yourself of snacks and treats. The TLC diet includes moderate amounts of sweets, snacks, and desserts that are low in saturated fat. Just be sure to keep track of the calories.

Snacks

- Fresh or frozen fruits
- Fresh vegetables
- Pretzels
- Popcorn (air-popped or cooked in small amounts of vegetable oil, without added butter or salt)
- Low-fat or fat-free crackers (such as animal crackers, fig and other fruit bars, ginger snaps, and molasses cookies)
- Graham crackers
- Bread sticks
- Whole-grain bagels
- Whole-grain English muffins
- Boxed cereals made with whole grains, such as oats, wheat, and rice
- Nuts and seeds (unsalted)

Desserts and Sweets

- Fresh, frozen, or dried fruits
- Low-fat or nonfat fruit yogurt (including frozen)
- Low-fat ice cream
- Fruit ices
- Sherbet
- Angel food cake
- Gelatin desserts
- Baked goods — such as cookies, cakes, and pies with pie crusts — made with unsaturated oil or soft margarine, egg whites or egg substitutes, and nonfat milk
- Candies with little or no fat, such as hard candy, gumdrops, jellybeans, and candy corn

Cooking with TLC

How you prepare food matters. Here are some cooking tips to help prepare delicious meals that are both healthy and low in saturated fat.

Cooking methods

- Use low-fat methods such as baking, broiling, microwaving, roasting, and stir-frying, to prepare food. Grilling seafood, chicken, or vegetables is also a great option. Avoid adding sauces that are high in fat or salt.
- Chill soups and stews for several hours and remove the fat that rises to the top.
- Limit salt.

Milk/cream/sour cream

- Cook with low-fat (1% or 2%) or nonfat milk or evaporated milk instead of whole milk or cream.
- Instead of sour cream made with whole milk, substitute nonfat or low-fat sour cream or yogurt.

Spices/flavorings

- Use a variety of herbs and spices in place of salt or to reduce the amount of salt you use (see Box 7).
- Use low-sodium broth or bouillon instead of regular broth or bouillon.
- Use a small amount of skinless smoked turkey breast rather than bacon or fatback to flavor beans and cooked greens. You'll still get the smoky taste but without the high saturated fat content.
- Use skinless chicken thighs, instead of neck bones, to boost flavor.

Oils/butter

- Use cooking oil spray to lower fat and calories.
- Use a small amount of vegetable oils (e.g., olive, canola, avocado) instead of lard, butter, or other saturated fats that tend to be hard at room temperature.
- In general, diet margarines are not well suited for baking. Instead, use regular soft margarine made with vegetable oil to cut saturated fat.
- Choose margarine that lists liquid vegetable oil as the first ingredient on the food label and is low in saturated fat.

Sample Menu #1 *(1,795 calories)*

Breakfast
Oatmeal (1 cup)
Fat-free milk (1 cup)
Raisins (¼ cup)
Honeydew melon (1 cup)
Orange juice, calcium-fortified (1 cup)
Coffee (1 cup) with nonfat milk or dairy alternative (2 tablespoons)

Lunch
Roast beef sandwich
- Whole wheat bun (1 medium-sized)
- Roast beef, lean (2 ounces)
- Swiss cheese, low-fat (1-ounce slice)
- Romaine lettuce (2 leaves)
- Tomato (2 medium slices)
- Mustard (2 teaspoons)

Pasta salad (½ cup)
- Pasta noodles (¼ cup)
- Mixed vegetables (¼ cup)
- Olive oil (1 teaspoon)
- Apple (1 medium)
- Iced tea, unsweetened (1 cup)

Dinner
Orange roughy fish (2 ounces) cooked with olive or canola oil (2 teaspoons)
Parmesan cheese (1 tablespoon)
Rice (1 cup), topped with soft margarine (1 teaspoon)
Broccoli (½ cup) with soft margarine (1 teaspoon)
Strawberries (1 cup) topped with low-fat frozen yogurt (½ cup)
Water (1 cup)

Snack
Popcorn (2 cups), air popped or cooked with canola oil (1 tablespoon)
Peaches, canned in water (1 cup)
Water (1 cup)

Sample daily menus, based on a variety of cuisines, are listed on the following pages. If you need more or fewer calories per day, use the nutritional information at the end of each menu to adjust quantities. That way you'll get the right number of calories to safely lose weight the TLC way.

Sample Menu #2 *(1,823 calories)*

Breakfast
Bran cereal (¾ cup)
Banana (1 medium)
Nonfat milk (1 cup)
Biscuit, low-sodium and made with canola oil (1 medium)
Jelly (1 tablespoon)
Soft margarine (1 teaspoon)
Honeydew melon (½ cup)
Coffee (1 cup) with fat-free milk (2 tablespoons)

Lunch
Chicken breast (2 ounces) cooked with canola oil (2 teaspoons)
Corn on the cob (1 medium) with soft margarine (1 teaspoon)
Collard greens (½ cup), cooked in low-sodium chicken broth (1 tablespoon)
Rice, cooked (½ cup)
Fruit cocktail, canned in water (1 cup)
Iced tea, unsweetened (1 cup)

Dinner
Catfish (3 ounces), coated with flour and baked with canola oil (½ tablespoon)
Sweet potato (1 medium), served with soft margarine (2 teaspoons)
Spinach (½ cup)
Vegetable broth, low-sodium (2 tablespoons)
Corn muffin (1 medium), made with fat-free milk and egg substitute
Soft margarine (1 teaspoon)
Watermelon (1 cup)
Iced tea, unsweetened (1 cup)

Snack
Graham crackers (4 large)
Peanut butter, reduced-fat, unsalted (1 tablespoon)
Nonfat milk (½ cup)

Sample Menu #3 *(1,821 calories)*

Breakfast

Bean tortilla
- Corn tortilla (1 medium)
- Pinto beans (¼ cup)
- Onion (2 tablespoons)
- Tomato,chopped (2 tablespoons)
- Jalapeno pepper (1 medium)
- Sauté with canola oil (1 teaspoon)
- Papaya (1 medium)

Orange juice, with added calcium (1 cup)
Coffee (1 cup) with fat-free milk
(2 tablespoons)

Lunch

Beef stir-fry
- Sirloin steak (2 ounces)
- Garlic, minced (1 teaspoon)
- Onion, chopped (¼ cup)
- Tomato, chopped (¼ cup)
- Potato, diced (¼ cup)
- Salsa (¼ cup)
- Olive oil (1½ teaspoons)

Mexican rice (½ cup)
- Rice, cooked (½ cup)
- Onion, chopped (2 tablespoons)
- Tomato, chopped (2 tablespoons)
- Jalapeño pepper (1 medium)
- Carrots, diced (2 tablespoons)
- Cilantro (1 tablespoon)
- Olive oil (2 teaspoons)

Mango fruit "smoothie" (1 cup)
- Nonfat milk (1 cup)
- 1 medium mango, diced (¼ cup)
- Banana, sliced (¼ cup)
- Water (¼ cup)

Dinner

Chicken fajita
- Corn tortilla (1 medium)
- Chicken breast, baked (2 ounces)
- Onion, chopped (2 tablespoons)
- Green pepper, chopped (2 tablespoons)
- Garlic, minced (1 teaspoon)
- Salsa (1½ tablespoons)
- Canola or olive oil (1 teaspoon)

Avocado salad
- Romaine lettuce (1 cup)
- Avocado, ½ small, sliced
- Tomato, sliced (¼ cup)
- Onion, chopped (2 tablespoons)
- Sour cream, low-fat (1½ tablespoons)

Rice pudding with raisins (½ cup)
Water (1 cup)

Snack

Plain yogurt, nonfat (1 cup)
Mixed with peaches,
canned in water (½ cup)
Water (1 cup)

Sample Menu #4 *(1,829 calories)*

Breakfast

Scrambled egg whites
(½ cup liquid egg substitute)
Cooked with nonfat cooking spray
English muffin (1 whole)
Soft margarine (2 teaspoons)
Jam (1 tablespoon)
Strawberries (1 cup)
Orange juice with calcium (1 cup)
Coffee (1 cup) with nonfat milk
(2 tablespoons)

Lunch

Tofu vegetable stir-fry
- Tofu (3 ounces)
- Mushrooms (½ cup)
- Onion (¼ cup)
- Carrots (½ cup)
- Swiss chard (½ cup)
- Garlic, minced (2 tablespoons)
- Peanut oil (1 tablespoon)
- Soy sauce, low-sodium (2½ teaspoons)

Rice, cooked (½ cup)
Orange (1 medium)
Green tea (1 cup)

Dinner

Beef stir-fry
- Beef tenderloin (3 ounces)
- Soybeans (edamame), cooked (¼ cup)
- Broccoli, cut in large pieces (½ cup)
- Peanut oil (1 tablespoon)
- Soy sauce, low-sodium (2 teaspoons)

Rice, cooked (½ cup)
Watermelon (1 cup)
Almond cookie (1 cookie)
Nonfat milk (1 cup)

Snack

Asian noodles, soft (udon) (½ cup)
Peanut oil (1 teaspoon)
Green tea (1 cup)

Meats and poultry

- Choose a lean cut of meat and remove any visible fat.
- Remove skin from chicken and other poultry before cooking.
- Try using turkey instead of beef in many recipes.

Sandwiches and salads

- In salads and sandwiches, use a low-fat dressing, yogurt, or mayonnaise instead of regular versions.
- To make a salad dressing, use equal parts water and vinegar and half as much oil. Olive oil with lemon juice or balsamic vinegar makes an excellent dressing. To lower calories, skip the oil.
- Garnish salads with fruits and vegetables.

Soups and stews

- Remove fat from homemade broths, soups, and stews by preparing them ahead of time and chilling them. Before reheating a dish, lift off the hardened fat from the surface. If you don't have time to chill the dish, float a few ice cubes on the surface of the warm liquid to harden the fat, then remove and discard the fat.
- Use cooking spray, water, or stock to sauté onion and other vegetables that are used to flavor stews, soups, and sauces.

Breads

- To make muffins, quick breads, or biscuits, use no more than 2 tablespoons of fat for each cup of flour.
- When making muffins or quick breads, use three ripe, very well-mashed bananas instead of ½ cup of butter or oil. Or substitute 1 cup of applesauce for 1 cup of butter, margarine, oil, or shortening; you'll get less saturated fat and fewer calories.

Desserts

- To make a pie crust, use only ½ cup of margarine, butter, or lard for every 2 cups of flour.
- For chocolate desserts, use 3 tablespoons of cocoa instead of 1 ounce of baking chocolate. If another fat is needed to replace the fat in chocolate, add no more than 1 tablespoon of vegetable oil.
- To make cakes and soft-drop cookies, use no more than 2 tablespoons of fat for each cup of flour.

You can print NHLBI's Tips for Eating Out so it's handy when you need it (***www.nhlbi.nih.gov/resources/tips-eating-out-fact-sheet***). It's a great source of ideas for heart-healthy eating when dining out.

Eating Out with TLC

You can eat out at a restaurant or a social event without falling off the TLC diet. When you're in a restaurant, feel free to make special requests. At a social event, choose carefully but enjoy fully. Plan ahead so you can eat smaller amounts of food and limit your salt and fat intake before dining out or going to a party.

Here are more tips:

At restaurants

- Choose entrees, potatoes, and vegetables prepared without sauces, cheese, or butter, or ask for sauces to be put on the side.
- Look for vegetarian or vegan options.
- Eat a small portion of meat, and fill up on vegetables.
- Seafood and chicken with the skin removed are good options, but be cautious about sauces, which may add fat and sodium.
- Avoid vegetable and salad toppings, such as crumbled bacon and cheese, or tell the waiter that you don't want these items in the dish.
- Ask for soft margarine instead of butter, and use it sparingly.
- Select foods that are fresh, steamed, broiled, baked, roasted, poached, lightly sautéed, or stir-fried.
- At Asian restaurants, look for items that are steamed, poached, roasted, or barbecued. Ask for steamed rice and low-sodium soy sauce.
- At Italian restaurants, look for red (tomato-based) sauces, primavera (no cream), piccata (lemon), sun-dried tomatoes, crushed tomatoes, and lightly sautéed or grilled options.
- At Mexican and other Latin-style restaurants, look for rotisserie chicken, grilled entrées, rice and black beans, salsa or pico de gallo, or soft corn tortillas. Remove chicken skin.
- If you order pizza, try a vegetable topping instead of meat or extra cheese, or ask for half the usual amount of cheese.
- At fast-food restaurants, order salads, grilled chicken sandwiches with no breading, regular-size hamburgers, or roast beef sandwiches. Ask for a children's meal, because children's menus often have smaller portions and may include fresh fruit and low-fat milk.

At social events

- Let the hosts know that you're on a heart-healthy diet, and ask about low-fat foods included on the menu.
- At potluck dinners, bring a low-fat dish. That way, there will be at least one food you can eat.
- If it's a buffet, look at all the offerings before you start filling your plate — then select mostly low-fat items. Take smaller servings of higher-fat foods. Focus on crudités (raw vegetables) but limit the amount of dip you take; many dips are based on fat-heavy sour cream or mayonnaise.
- At parties, sit away from the food table to avoid temptation.

Beverages

- Choose water, unsweetened iced tea, or low-fat or nonfat milk rather than a soft drink or a milkshake.
- If you really want to have a soft drink, order a small or sugar-free one, or try a calorie-free sparkling water.
- If you're drinking alcohol, remember that women should have no more than one drink per day and men should have no more than two per day. And don't overlook those calories!

Putting TLC into Action: Becoming More Physically Active

Increasing physical activity is another key part of the TLC Program — and it has many benefits.

Lack of physical activity increases your risk of heart disease, both on its own and because of its effects on other major risk factors. Reducing sedentary behavior and doing more physical activity on a regular basis can help you manage your weight, which in turn can also help lower your LDL. Getting more activity can also help raise HDL and lower triglycerides, improve the fitness of your heart and lungs, and lower blood pressure. It can reduce your risk for developing diabetes or help you manage the condition if you already have it.

Regular physical activity offers other important benefits.

- It can improve your mental health by boosting your mood and helping you blow off steam.
- Your weight becomes easier to control because you're burning more calories.
- You feel better and more confident.
- Your energy level increases.
- When you do it with friends and family, you get to spend valuable time together.
- Movement while playing games or sports can be lots of fun.
- You may even sleep better.

If you haven't been active in a while, the key to success is gradually increasing your effort. Start by taking a walk during breaks at work, then lengthen your walks or increase your pace.

If you're planning to be very active but have heart disease, asthma, diabetes, or high blood pressure, or if you are a man over age 40 or a woman over age 50, check with your healthcare provider before starting your physical activity program.

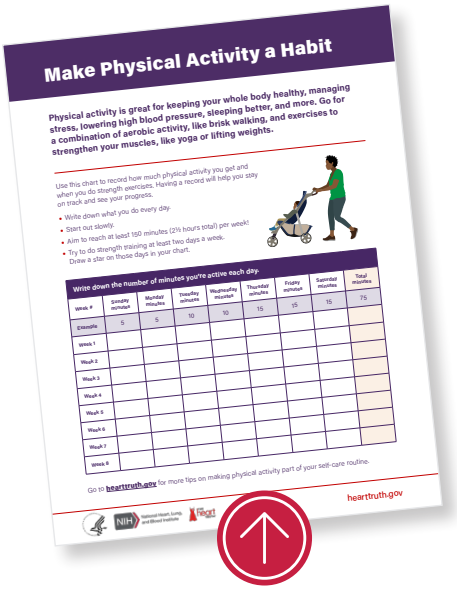
Unless your provider tells you otherwise, try to do a moderate-intensity activity, such as brisk walking, for at least 30 minutes on most if not all days. You can do the 30 minutes all at once or break it up into shorter periods of at least 10 minutes each. Moderate-intensity activities include playing golf (walking the course, not riding in a cart), dancing, bowling, bicycling (5 miles in 30 minutes), gardening, and housecleaning.

More intense activities include jogging, swimming, aerobics, basketball, football, soccer, racquetball, and tennis.

Build Up Your Activity Level

You don't have to train like a marathon runner to get the benefits of physical activity. Start out easy and build up. Here's how:

- **Beginning activity.** Try to spend less time sitting or lying down. Increase standing activities and chores, such as painting a room, pushing a stroller or wheelchair, working in the yard, ironing, cooking, playing a musical instrument, parking farther away from a store entrance, or taking the stairs instead of the elevator.



Make Physical Activity a Habit

Physical activity is great for keeping your whole body healthy, managing stress, lowering high blood pressure, sleeping better, and more. Go for a combination of aerobic activity, like brisk walking, and exercises to strengthen your muscles, like yoga or lifting weights.

Use this chart to record how much physical activity you get and when you do strength exercises. Having a record will help you stay on track and see your progress.

- Write down what you do every day.
- Start out slowly.
- Aim to reach at least 150 minutes (2½ hours total) per week!
- Try to do strength training at least two days a week. Draw a star on those days in your chart.

Write down the number of minutes you're active each day.

Week #	Sunday minutes	Monday minutes	Tuesday minutes	Wednesday minutes	Thursday minutes	Friday minutes	Saturday minutes	Total minutes
Example	5	5	10	10	15	15	15	75
Week 1								
Week 2								
Week 3								
Week 4								
Week 5								
Week 6								
Week 7								
Week 8								

Go to heartruth.gov for more tips on making physical activity part of your self-care routine.

heartruth.gov

Use this chart to record how much physical activity you get each day. You can download it here: ***www.nhlbi.nih.gov/resources/make-physical-activity-habit***.

Pay attention to warning signals. Although physical activity can strengthen your heart, some types of activity may worsen existing heart problems. Warning signs include sudden dizziness, cold sweats, paleness, fainting, or pain or pressure in your upper body right after you do a physical activity. If you notice any of these signs, stop and call 9-1-1 at once.

- **Light activity.** As you become more active, try something light, such as walking slowly (a 24-minute mile),* cleaning up your garage, doing carpentry or housecleaning, caring for a child, golfing, sailing, or playing ping-pong.
- **Moderate-intensity activity.** Now you can try walking a 15-minute mile,* weeding and hoeing a garden, cycling, skiing, playing tennis, or dancing.
- **High-intensity activity.** You're ready to try walking a 10-minute mile,* walking uphill with a load, playing basketball or soccer, or climbing.

**If you are walking for physical activity, use a pedometer or a smartphone app to keep track of how many steps you take a day, then gradually increase the number of steps.*

Be More Active, Burn More Calories

As you increase your level of physical activity, your body uses more energy in the form of calories. The chart below provides some examples of activities and how many calories a 150-pound person will burn in 30 minutes. People who weigh less will burn fewer calories; people who weigh more will burn more.

Activity	Calories Burned Per 30 Minutes
Walking leisurely (2 miles per hour)	8
Walking briskly (4 miles per hour)	170
Gardening	135
Raking leaves	145
Dancing	190
Bicycling leisurely (10 miles per hour)	205
Swimming laps (moderate level)	240
Jogging (5 miles per hour)	275

Keep Up Your Activity Level

Unless you have to stop an activity for a health reason, stick with it. If you feel like giving up, set smaller, short-term goals. If you become bored, try a different activity, either by yourself or with a friend or family member. If you always walk on a treadmill, try bicycling instead. If you're tired of aerobics, sign up for a boxing class. Plan your week so you switch back and forth.

A certain amount of stiffness is normal when you start being more active. If you hurt a joint or pull a muscle, stop the activity for several days. Most minor muscle and joint problems will go away with rest and applying heat or cold to the area. Check with your healthcare provider about taking over-the-counter pain relievers to help with muscle strains or joint pain.

Each of the following moderate activities burns about 150 calories:

Common Chores		Sports Activities
Washing and waxing a car for 45–60 minutes	**Less vigorous, more time**	Playing volleyball for 45–60 minutes
Washing windows or floors for 45–60 minutes		Playing touch football for 45 minutes
Gardening for 30–45 minutes		Walking for 35 minutes (1.5 miles, or 20 minutes per mile)
Wheeling self in wheelchair for 30–40 minutes		Playing basketball for 30 minutes (shooting hoops)
Pushing a stroller for 30 minutes (1.5 miles)		Bicycling for 30 minutes (5 miles)
Raking leaves for 30 minutes		Dancing for 30 minutes
Shoveling snow for 15 minutes		Walking for 30 minutes (2 miles, or 15 minutes per mile)
Stair walking for 15 minutes		Doing water aerobics for 30 minutes
		Swimming laps for 20 minutes
		Playing basketball for 15–20 minutes (game)
		Bicycling for 15 minutes (4 miles)
		Jumping rope for 15 minutes
	More vigorous, less time	Running for 15 minutes (1.5 miles, or 10 minutes per mile)

Putting TLC into Action: Achieve and Maintain a Healthy Weight

Overweight or obesity can increase your chance of having high triglycerides, low HDL cholesterol, and high LDL cholesterol. These health conditions can also raise the risk of high blood pressure, diabetes, heart disease, and other serious health problems. Losing extra weight will reduce these risks and improve cholesterol and triglyceride levels.

At the start of the TLC Program, your main focus will be on lowering your LDL cholesterol level by reducing saturated fat and calories and increasing fiber, which could also help with weight loss.

After about 2 to 3 months of TLC, if you still need to lose weight, you may need to focus more on losing weight as you approach your LDL and total cholesterol goals, especially if you have metabolic syndrome (see Box 2).

Setting Your Goal

Finding out whether you need to lose weight is a three-step process.

First, your healthcare provider may already have checked your **body mass index (BMI)**, which relates your weight to your height. A high BMI may indicate high body fat. You can also use an app to check your BMI (***www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm***). Then you can use this guide to BMI categories to get a general idea about body weight:

- Underweight = less than 18.5
- Normal weight = 18.5 to 24.9
- Overweight = 25 to 29.9
- Obesity = 30 or higher

If you think BMI might not be the best way to estimate your risk based on your personal characteristics, talk with your healthcare provider about additional ways to assess body fat and estimate your heart disease risk.

Second, your provider may measure your waist. A waist measurement of 35 inches or more for women and 40 inches or more for men is part of metabolic syndrome (see Box 2). A large waist size may also signal an increased risk of obesity-related conditions, such as heart disease.

Learn more about heart-healthy living on NHLBI's website (***www.nhlbi.nih.gov/health/heart-healthy-living/healthy-weight***). It is a great source of information about body weight and provides tools and tips to help with your TLC journey.

Third, talk with your healthcare provider. Together, you can **set a healthy target weight** for you. BMI and waist measurement are important to consider when aiming for a healthy weight, but your personal characteristics are important, too.

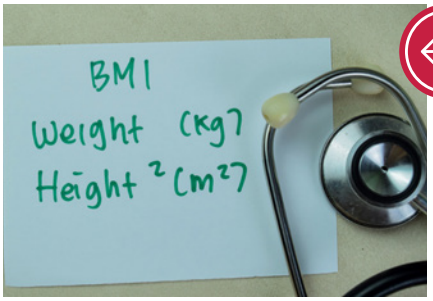
Losing Weight and Improving Heart Health

Losing weight gradually is the best approach. A safe and reasonable weight loss is 1 to 2 pounds a week. However, you don't have to reach your ideal weight to reap health benefits. If you are overweight, losing even 10% of your current weight would lower your risk for heart disease and other health problems.

However, there are no quick fixes for losing weight. You need to change your lifestyle by following the TLC diet, reducing calories, and becoming physically active. Your goal is not just to lose extra weight but to keep it off.

To lose weight, you'll have to take in fewer calories than you burn — this includes calories used by the body in normal functions and in physical activities. To lose 1 pound a week, you need to burn 500 more calories a day than you eat. In general, eating plans containing 1,200 to 1,500 calories will help most women lose weight safely, while eating plans with 1,500 to 1,800 calories a day are suitable for men.

Medicines may help some people who are overweight or have obesity to lose weight. Medicines for weight loss may reduce feelings of hunger, increase energy levels, or affect how your body burns and stores energy. Some weight-loss medicines are given as pills or capsules, and others are given as injections. Weight loss medicines can have serious side effects — including cancer and kidney damage — and they are not



BMI is easy to measure, and many providers use it as a guide when assessing people's risk of heart disease, diabetes, and other health conditions. But BMI is not perfect. It doesn't directly measure body fat, which is the main health concern. Also, BMI categories are based on data collected from previous generations of non-Hispanic White people — mostly men. The categories do not consider a person's sex, race/ethnicity, or age, which are all factors that affect body shape and composition.

right for everyone. Even if your healthcare provider prescribes a medicine, you'll need to follow the TLC program to lose weight and improve your heart health. It's important to use only medicines that are approved by the FDA for weight loss.

Surgical procedures, such as bariatric surgery, may be an option for some people who have obesity. People who opt for weight-loss surgery have to commit to lifelong changes in diet and eating habits. Working long term with a healthcare team is often necessary to manage any side effects of the surgery and make sure that you get enough nutrition while achieving and maintaining a healthy weight. If you have weight-loss surgery, you can follow many parts of the TLC program safely, but your provider may recommend adjusting some parts of the food plan, including fiber intake.

Prepare for the Challenge

Losing weight is not easy. Here are some pointers to help you reach and maintain your weight goal:

Change the way you eat and drink.

You can eat less without feeling deprived. Here are three ways to reduce calories without reducing satisfaction:

- Take time to savor your food. Studies show that it takes at least 15 minutes for your brain to get the message that you've eaten, so slow down.
- Eat more vegetables and fruits. They help you feel full without adding a lot of calories.
- Use smaller plates. Your servings will seem bigger.
- Drink more water or seltzer water. Cut out or reduce your intake of sugar sweetened beverages, which provide limited nutritional value.

Beware of triggers that make you want to eat.

You probably associate certain behaviors with eating. For example, while watching tv, you may reach for the potato chips. Or when dining with friends, you may eat more than normal. Try changing your behavior. Watch TV while riding an exercise bike, for example, or enjoy an activity with friends other than dining out, like going to a park or museum.

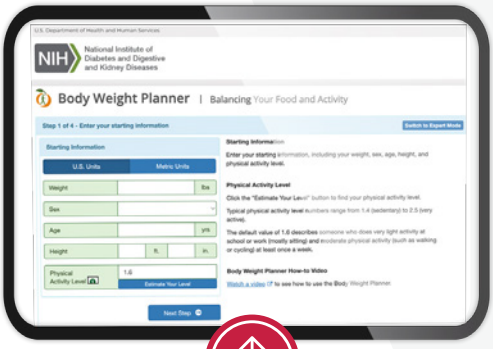
Don't skip meals.

Skipping or delaying meals can make you hungry and cause you to overeat later. Skipping meals can also affect your blood sugar levels and make you dizzy.

Tips for Lowering Calories on TLC

Reduce your calorie intake by following these tips:

- Drink plenty of water or other calorie-free beverages each day to help you feel full. How much water you need depends on personal factors like how many fruits and vegetables you eat, how much physical activity you do, and how much you sweat. In general, women should take in a total of about 11½ cups of water per day, and men should consume about 15½ cups daily. Depending on how much other fluids you take in, including liquid from fruits and juice, you might only need to drink four to six cups of plain water to reach this goal.
- Eat fresh or steamed vegetables when you get hungry.
- Start a meal with a broth-based soup so that the warm liquid will fill you up faster.



The National Institute of Diabetes and Digestive and Kidney Diseases offers a Body Weight Planner (***www.niddk.nih.gov/bwp)*** that can help you achieve and maintain a healthy body weight.

Want to learn more about portion and serving sizes? Visit the food group gallery page on ***MyPlate.gov*** to find detailed information, including photos to help guide your meal planning.

- Choose protein that's low in both fat and calories Examples include 1 ounce of turkey breast or chicken with the skin removed, 1 ounce of fish fillets (flounder, sole, scrod, cod, haddock, or halibut), 1 ounce of canned tuna in water, ¾ cup of nonfat or low-fat yogurt or cottage cheese, one egg or two egg whites, 1 ounce of nonfat or low-fat cheese, and ½ cup of cooked beans (black beans, kidney beans, chickpeas, or lentils).
- Have lean beef, lamb, or pork only once or twice a week.
- Enjoy fruit, a healthy, naturally sweet food that makes a great dessert option. Most people should aim for two cups of fruit per day. If you have diabetes, check with your healthcare provider to see how much fruit you should include in your food plan. Most fruits have less than 100 calories per serving. These amounts provide about 100 calories:
  - 1 small apple, banana, orange, or nectarine
  - 1 medium fresh peach
  - 1 kiwi
  - ½ grapefruit (If you're taking medicines, check with your provider or pharmacist to make sure grapefruit won't interfere with your treatment).
  - ½ mango
  - 1 cup of berries, fresh or frozen
  - 1 cup of fresh melon chunks
  - ⅛ of a honeydew melon
  - 4 ounces of unsweetened 100% fruit juice
- Use low-calorie or "lite" bread. Two slices contain about 80 calories; regular breads have about twice as many. Look for high-fiber options made with whole grains.
- Choose low-calorie options when preparing and serving foods. Try a little salsa on a baked potato instead of butter, for example, or use reduced-fat Italian salad dressing instead of the regular kind.

If you are working on weight loss, be aware that "low-fat" does not mean a food is low in calories. This confusion may lead to overeating. To avoid this mistake, use food labels to compare calorie totals.

Food Choices That Can Help with Weight Loss

To stay healthy while losing weight, don't forget to get enough vitamins and minerals. You want to aim for nutrient-dense foods, which are packed with vitamins, minerals, protein and fiber. Avoid foods that are high in calories from sugar, fat, or refined carbs and provide few of the nutrients needed for good health. Women in particular should be sure to get enough calcium — 1,000 to 1,200 mg a day (through food or supplements). Choose foods wisely and lose weight well at a reasonable pace.

Portion Distortion

Another thing to keep an eye on is portion size. Studies show that portion sizes at restaurants and at home have been getting bigger over the years. For example, in the early 2000s, a bagel measured 3 inches across and contained 140 calories. By 2013, a bagel had grown to 6 inches across and contained 350 calories.

But portion size is not the same as serving size. A portion is the amount of a food you choose to eat in one sitting. Serving size is a measure used to describe the amount of food recommended from each food group; the size of a serving is shown on the Nutrition Facts label on food packages.

Read the food label to learn how many servings are in a product. Some items may appear to be sold as single portions but actually have more than one serving. A trick to shrink your portion size when dining out is to share a meal or take some of your order home to eat the next day.

Measure or weigh foods to check portions and track calories.

Here are some ways to replace high-calorie foods with lower-calorie options:

Instead of	Replace With
Cheddar, Swiss, Jack cheese	Reduced-calorie cheese or low-calorie processed cheese
American cheese	Nonfat cheese
Ramen noodles	Rice or noodles (such as spaghetti and macaroni)
Pasta with white sauce (Alfredo)	Pasta with red sauce (marinara)
Pasta with cheese	Pasta with vegetables (primavera)
Granola	Bran flakes, crispy rice cereals Cooked grits or oatmeal Whole grains (such as couscous, barley, and bulgur) Low-fat granola
Cream soups	Broth soups
Gravy (homemade with fat and/or milk)	Gravy mixes made with water or homemade with nonfat milk or the fat skimmed off
Avocado on sandwiches	Cucumber slices or lettuce leaves
Guacamole dip or refried beans	Salsa or pico de gallo
Cold cuts or deli meats such as bologna and salami	Low-fat cold cuts (95% to 97% nonfat deli meats)
Hot dogs (regular)	Low-fat hot dogs
Bacon or sausage	Canadian bacon or lean ham
Regular ground beef	Extra-lean ground beef (such as ground round or ground turkey)
Beef (chuck, rib, brisket)	Beef (round, loin, trimmed of external fat)
Croissants, brioche	Hard French rolls or premade soft rolls you can bake in your oven
Donuts, sweet rolls, muffins, scones, pastries	English muffins, bagels, or low-fat or nonfat muffins, scones, or pastries
Snack or party crackers	Low-fat crackers, saltines, or soda crackers (lower in sodium)
Cake (pound, chocolate, yellow)	Cake (angel food, white, gingerbread)
Cookies	Reduced-fat or fat-free low-calorie cookies (graham crackers, ginger snaps, fig bars
Potato or tortilla chips	Air-popped or light microwave popcorn, fruits, vegetables, or a small amount of low-salt nuts or seeds
Ice cream	Sorbet, sherbet, fat-free frozen yogurt, frozen fruit, or chocolate pudding bars
Puddings or custard made with whole milk	Puddings made with nonfat milk

Living the TLC Way

Making lifestyle changes is never easy. But as you adopt the TLC Program, keep your main goal in mind: living healthier and longer by lowering cholesterol and your risk for heart disease.

This section offers guidance on how to make the needed lifestyle changes. Also, it will describe how getting your family and friends to adopt the TLC Program with you not only can help you achieve your goals but can also improve their health as well. It's never too early or late to adopt a heart-healthy lifestyle. Although you may have been told to do this because of high cholesterol or other risk factors, the program promotes healthy living for everyone.

Also, remember to work closely with your healthcare provider and dietitian. They can help you learn how to eat healthy, satisfying meals; find a weight loss program; or do physical activities safely and effectively.

Track Your Changes

A good way to begin making changes is to start a **TLC diary.** Journals can help you stay on course and give you a boost by letting you track your progress. Yours can be a journal that charts what you eat each day, as well as other information, such as your physical activity, weight, blood test results, and blood pressure readings. You can write things down or track them using smartphone apps.

Before you start on the TLC Program, take notes about what you need to change; while on the program, take notes to see how you are doing. Box 10 is a sample diary that can help you get started.

Be Smart When You Start

Whether it's reducing saturated fat, eating more fruits and vegetables, losing excess weight, or being more physically active, changing behaviors is hard. But knowing how to approach change helps make it possible.

Set goals that are specific and realistic. For instance, if you need to increase your physical activity, saying you'll "do more" is vague. Likewise, saying you'll walk 3 miles a day when you've not been physically active may be unrealistic. Instead, try committing to an extra 2,000 steps a day. That gives you a specific and realistic goal — one that can be measured using a pedometer or an app so that you know when you succeed.

Also, take small steps toward your larger goals. For instance, if you're trying to switch from whole milk to nonfat milk, start by drinking 2% milk. Once you've made that change, move to 1% milk and finally to nonfat milk. And if you don't like the taste of nonfat milk, that's okay. You can stick with 1% or 2% milk and try to cut back your saturated fat intake in other ways. With this approach, you should stay motivated to make the entire journey.

Reward Yourself

Be sure to reward yourself for the progress you've made on the TLC Program — but not with food. As you start a new goal, offer yourself a promise such as, "If I reach my goal this [day, week, month], I will treat myself to a well-deserved [non-food reward]." Think of something you want, such as a special outing or a massage, or put down a deposit on a larger reward.

TLC for the Whole Family

It's a good idea to talk about your plans for the TLC Program with your partner, family, or friends — whoever can provide support or needs to understand why you're changing your habits. They may even be able to help.

You can follow the TLC diet without making separate meals for you and the rest of your family. You'll just eat less saturated fat and cholesterol or smaller portions than they do.

How does this work at mealtimes? One approach is to use "add-ons"— heart-healthy sauces or foods that can be added to dishes so that others can meet their nutrition goals while you keep to yours. Make salads and let everyone choose how many nuts, seeds, raisins, or fruits to add. Put low-fat salad dressing and sauces on the side so that others can have them. Take less of the main course, such as meat, and more of the side dishes, such as vegetables and whole grains.

Family time should not mean only food. Physical activities

Box 10: Sample Food and Activity Diary

Use the sample diary below to record the foods you eat and the physical activity you do each day of the week.

Week 1	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Breakfast							
Lunch							
Dinner							
Activity							
Notes							

can also be done with family or friends. Buddying up can keep the activity from becoming dull. Invite your spouse or child or friend to bike with you regularly and you won't be the only one reaping the heart health benefits.

A Final Note

The TLC Program is a new way of living, not just a quick fix. So don't worry if you fail now and then. Everyone slips up sometimes, especially when they're learning something new. Don't let one slip keep you from reaching your health goals. Remember that changing your lifestyle is a long-term process.

After a slip up, the important part is getting back on track. Here's how to do it:

- **Ask yourself why you got off track.** Did you eat the wrong foods at a party? Did you feel pressed for time and omit your physical activity? Do you need to manage your stress levels better? Find out what triggered your slip up, then get started again with this new awareness.
- **Determine whether you tried to do too much at once.** Often, people starting a new lifestyle try to change too much too soon. Slowly but surely is the best way to succeed.
- **Reset your goals.** This time make them more reachable and keep your sights on the big prize: improved heart health.
- **Check your journal.** Review the food you ate, the physical activity you did, and the weight you tracked. When you have trouble following the TLC Program, recording details such as where you were and how you felt in the moment can make you more aware of your habits. The information can also help you identify eating triggers and come up with solutions.

The biggest step is getting started. After that, take encouragement from your progress, and you'll reach your goal: a lifetime of heart health.

Terms to Know

Angina (an-JY-nuh) — Chest pain or discomfort that occurs if an area of the heart muscle doesn't get enough oxygen-rich blood.

Artery (ARR-tuh-ree) — A blood vessel that carries blood from your heart to your organs. Most arteries carry oxygenated blood. The pulmonary arteries carry deoxygenated blood away from the heart to the lungs.

Atherosclerosis (ATH-er-oh-skler-OH-sis) — A disease marked by plaque buildup inside the arteries, which limits the flow of oxygen-rich blood through the body; also known as hardening of the arteries.

Blood clot (blud klot) — A gel-like clump that forms when blood changes from a liquid to a solid state. Blood clots are necessary to help stop bleeding after an injury. An abnormal blood clot that forms inside an artery or vein is called a thrombus. A piece of the blood clot, called an embolus, can break off and move through the bloodstream. The embolus can block blood flow in another part of the body, such as the brain or lungs.

Body mass index (BMI) (BAH-dee mass IN-deks) — A measure of weight relative to height that is an indicator of total body fat and related health risks. You can calculate your BMI using an online tool (***www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm***).

Calorie (KAL-uh-ree) — A standard measure of the energy in food or the energy used by the body.

Carbohydrate (kar-boh-HY-drayt) — Sugar molecules in food that act as the body's main energy source. Carbohydrates can be small and simple (like sugars) or can be large and complex (like starch and fiber).

Cholesterol (koh-LES-teh-rol) — A waxy, fatlike substance that is found in all the cells of the body. High cholesterol increases the risk of developing coronary heart disease.

Coronary artery (KAWR-uh-ner-ee ARR-tuh-ree) — A blood vessel on the heart's surface that supplies oxygen-rich blood to the heart muscle.

Diabetes (dy-uh-BEE-teez) — A disease that occurs when your blood glucose, also called blood sugar, is too high. Diabetes is an important risk factor for heart disease.

Diastolic blood pressure (DY-uh-STOL-ik blud PRESH-uhr) — A measure of the pressure in your arteries when your heart rests between beats. It is the second or bottom number in a blood pressure reading. In a reading of 120/80, the number 80 is the diastolic pressure.

Familial hypercholesterolemia (fuh-MIH-lee-ul or fuh-MIL-yul HY-per-kuh-LES-ter-uh-LEE-mee-uh) — A common condition that passes from parents to children and causes high levels of LDL cholesterol from birth. It can cause a heart attack at a young age. About 1 in 250 people has this condition, though it may not be diagnosed until a heart attack has occurred.

Heart attack (hahrt uh-TAK) — A serious medical condition in which the flow of blood to the heart is severely blocked. It is also called a myocardial infarction and requires immediate medical attention.

Hereditary (huh-RED-ih-ter-ee) — Characteristics passed from parents to their children through genes. Some health conditions have a hereditary or genetic component, meaning that children are at higher risk if a parent also has the condition.

Hormone (HOR-mone) — A substance made in glands in the body. A hormone is released from the gland and travels throughout the body to control other body functions.

Hypertension (HY-per-TEN-shun) — A common disease, often called high blood pressure, in which blood flows through blood vessels, or arteries, at higher than normal pressures. Blood pressure is the force of blood pushing against the walls of your arteries as the heart pumps blood. Hypertension is when this force against the artery walls is too high.

Insoluble fiber (in-SOL-yuh-buhl FY-ber) — A substance in foods that goes through the digestive tract largely undissolved and helps the colon, or large intestine, function properly. It is found in whole-grain foods, some fruits, vegetables, and legumes.

Insulin (IN-suh-lin) — A hormone that helps your body convert glucose (or sugar) in the blood into energy.

Insulin resistance (IN-suh-lin ri-ZIS-tuhns) — A condition in which the body cannot properly use the insulin it produces.

Lipoprotein (lip-oh-PRO-teen or ly-poh-PRO-teen) — A complex molecule containing proteins and lipids. Cholesterol travels in the bloodstream as high-density lipoproteins (HDLs) and low-density lipoproteins (LDLs). LDLs are sometimes called bad cholesterol. HDLs may be called good cholesterol.

Metabolic syndrome (meh-tuh-BAH-lik SIN-drome) — A group of conditions that together raise the risk of coronary heart disease, diabetes, stroke, and other serious health problems.

Monounsaturated fat (mon-oh-uhn-SACH-uh-ray-tid fat) — Fat types that are liquid at room temperature and mostly come from foods like olives, avocados, rapeseed (canola), and nuts such as peanuts and almonds.

Obesity (oh-BEE-sih-tee) — Excessive overweight, as defined as a BMI greater than 30. Obesity is a disease that raises the risk for heart disease and other health problems, including type 2 diabetes and cancer.

Omega-3 fatty acids (oh-MEG-uh-three FAT-ee AS-idz) — A type of fat found in fatty fish, such as salmon and tuna, as well as some nuts, seeds, oils, and nutritional supplements, that may reduce the risk for heart disease and death.

Pancreas (PANG-kree-us) — An organ near the stomach, intestines, and other organs. It makes enzymes that aid in digestion and some hormones, including insulin. Insulin helps control blood sugar levels in the body.

Plaque (plak) — A substance made up of fat, cholesterol, calcium, and other substances found in the blood. Plaque can build up and harden in arteries, causing some types of heart disease. Plaque buildup reduces blood flow and makes it more likely that blood clots will form in your arteries. These blood clots can partially or completely block blood flow and oxygen delivery to the heart, brain, kidneys, legs, arms, or pelvis.

Polyunsaturated fat (pol-ee-uhn-SACH-uh-ray-tid fat) — Types of fat found in plants and some fish that may help lower cholesterol levels.

Protein (PRO-teen) — A type of nutrient that the body needs that mainly comes from eating animals and their products (eggs and dairy products, such as milk and yogurt). Also found in soy products and legumes, such as beans, peas, and lentils.

Risk factor (risk FAK-tor) — A condition, habit, or other factor that increases the chance of having a disease.

Saturated fats (SACH-uh-ray-tid fats) — Types of fat that raise LDL and total cholesterol and are found in fatty cuts of meat, poultry with skin, whole-milk dairy products, and some plant oils. Saturated fats are usually solid at room temperature.

Sodium chloride (SOH-dee-uhm KLOHR-ide) — The chemical term for salt.

Soluble fiber (SOL-yuh-buhl FY-ber) — A substance in plant-based foods that helps reduce the risk of heart disease and is good for the digestive tract and overall health.

Stanols and sterols (STAN-olz and STEHR-olz) — Substances found in some plants that help block the absorption of cholesterol and lower LDL cholesterol.

Statins (STA-tinz) — Medicines that lower the amount of cholesterol and certain fats in the blood.

Stroke (strohk) — A medical emergency in which oxygen-rich blood flow to the brain is blocked by a blood clot or a blood vessel breaks in the brain. Without oxygen, brain cells start to die after a few minutes.

Systolic blood pressure (sis-TOL-ik blud PRESH-uhr) — A measure of the pressure in your arteries when your heart pumps. It is the first or top number in a blood pressure reading. In a reading of 120/80, the number 120 is the systolic pressure.

Total fat (TOHT-ul fat) — The sum of saturated, monounsaturated, and polyunsaturated fats found in food. The total fat and fat breakdown by type are often listed on food labels.

Trans fats (tranz fats) — Types of unsaturated fat found mainly in vegetable oils treated with an industrial process to make the fat solid at room temperature. Trans fats are chemically different from the unsaturated fatty acids that occur naturally in plant foods and differ in their health effects. Since 2020, trans fats are no longer allowed to be added to foods in the United States.

Triglycerides (try-GLIH-suh-rides) — Types of fat that circulate in your blood. They are the most common type of fat in your body. Triglycerides in the blood increase by consuming foods, such as butter, oils, and other fats you eat. Triglycerides also come from extra calories the body stores as triglycerides in fat cells. High triglyceride levels in the blood can raise the risk of heart disease and stroke.

To Learn More

For more information on diseases, conditions, and procedures related to heart disease, visit the NHLBI website at ***www.nhlbi.nih.gov*** or contact:

NHLBI Center for Health Information

P.O. Box 30105
Bethesda, MD 20824-0105
Phone: 1-877-NHLBI4U (1-877-645-2448)
TRS: 7–1–1
Email: ***nhlbiinfo@nhlbi.nih.gov***

NHLBI, National Institutes of Health (NIH)

Cholesterol Health Topic
www.nhlbi.nih.gov/health/blood-cholesterol

Cholesterol and Your Heart Fact Sheet
www.nhlbi.nih.gov/resources/cholesterol-your-heart-what-you-need-know-fact-sheet

Coronary Heart Disease Health Topic
www.nhlbi.nih.gov/health/coronary-heart-disease

DASH (Dietary Approaches to Stop Hypertension) Eating Plan
www.nhlbi.nih.gov/DASH

Delicious Heart-Healthy Eating
https://healthyeating.nhlbi.nih.gov

Heart Attack Health Topic
www.nhlbi.nih.gov/health/heart-attack

Heart-Healthy Living Health Topic
www.nhlbi.nih.gov/health/heart-healthy-living

High Blood Triglycerides Health Topic
www.nhlbi.nih.gov/health/high-blood-triglycerides

How Sleep Works Health Topic
www.nhlbi.nih.gov/health/sleep

Know the Difference Fact Sheet
www.nhlbi.nih.gov/resources/know-differences-cardiovascular-disease-heart-disease-coronary-heart-disease

Metabolic Syndrome Health Topic
www.nhlbi.nih.gov/health/metabolic-syndrome

Take Diabetes to Heart Fact Sheet
www.nhlbi.nih.gov/resources/take-diabetes-heart-fact-sheet

The Heart Truth® Health Education Program
www.hearttruth.gov

National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), NIH

Body Weight Planner
www.niddk.nih.gov/health-information/weight-management/body-weight-planner

Diabetes Health Topic
www.niddk.nih.gov/health-information/diabetes

Diabetes, Heart Disease, & Stroke
www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/heart-disease-stroke

Heart Disease & Kidney Disease
www.niddk.nih.gov/health-information/kidney-disease/heart-disease

U.S. Department of Health and Human Services

Physical Activity Guidelines for Americans
health.gov/our-work/nutrition-physical-activity/physical-activity-guidelines/current-guidelines

U.S. Department of Agriculture

MyPlate
MyPlate.gov

Dietary Guidelines for Americans, 2020–2025
www.dietaryguidelines.gov

Notes

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