American Heart Association.

My Cholesterol Guide

heart.org/Cholesterol

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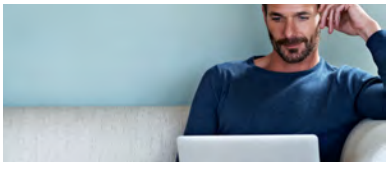

Understanding LDL, HDL and Triglycerides

You Are Not Alone!

- About 1 in 10 adults in the U.S. have high cholesterol of 240 mg/dL or greater
- About 1 in 4 adults in the U.S. have high LDL cholesterol
- About 1 in 5 people in the U.S. have high Lp(a) levels

What Are Cholesterol and Triglycerides?

Cholesterol is a waxy, fat-like substance found throughout the body. Your body makes all the cholesterol it needs and uses it to keep you healthy. It helps make new cells, some hormones, and substances that help digest foods.

Cholesterol is part of a healthy body. But having too much of it in your blood can pose a problem. In addition to what your body makes, the foods you eat can impact your cholesterol levels as well.

Two types of lipoproteins carry cholesterol to and from cells. Each has a different role in your body.

Low-density lipoprotein (LDL) is often called the (bad) cholesterol because it contributes to fatty buildups in arteries. This narrows the arteries and can increase the risk for heart attack, stroke and peripheral artery disease (PAD).

There isn't one "normal" LDL level that works for everyone, lower is generally better. Your LDL goal and treatment plan depend on several factors, such as your:

- Age
- Overall health
- Family history
- Diabetes
- History of heart attack or stroke

Depending on your situation, your LDL goal may be below 100 mg/dL, 70 mg/dL, or even 55 mg/dL if you are at very high risk for a heart attack or stroke. Your health care professional can help determine the goal that's right for you.

High-density lipoprotein (HDL) can be thought of as the good cholesterol because it carries LDL bad cholesterol away from the arteries and back to the liver. There, the LDL is broken down and passed from the body. But HDL cholesterol doesn't eliminate LDL cholesterol. Only a fraction of blood cholesterol is carried by HDL.

HDL is not a treatment target for lowering heart disease or stroke risk and should not be interpreted on its own. However, your health care professional still considers HDL levels when assessing your overall risk, because people with higher HDL levels tend to have better outcomes.

Triglycerides are the most common type of fat in the body. They store excess energy from your diet. A high triglyceride level combined with high LDL cholesterol or low HDL cholesterol is linked with fatty buildups within the artery walls. This may increase the risk of **heart attack** and **stroke**.

Triglycerides are another important part of your lipid panel. Like HDL, triglycerides are evaluated along with other risk factors and are not a primary treatment target for lowering heart disease or stroke risk. A triglyceride level below 150 mg/dL is usually considered normal.

Lipid Panel or Cholesterol Test

High cholesterol usually has no symptoms. Your health care professional will order a blood test called a lipid panel to check your cholesterol levels. This may be a "fasting" or "non-fasting" test. It checks for many types of fat in the blood. It's measured in milligrams per deciliter (mg/dL). The blood lipid panel results should include:

- Total cholesterol
- High-density lipoprotein (HDL), or "good" cholesterol
- Low-density lipoprotein (LDL), or "bad" cholesterol
- Triglycerides

Your health care professional can help you understand what your cholesterol levels mean.

Cholesterol can join with fats and other substances in your blood to build up in the inner walls of your arteries. The arteries can become clogged and narrow, and blood flow is reduced.

Beyond the Standard Cholesterol Test

- **What is an advanced lipid panel, and how is it different from a standard cholesterol test?**
  A standard cholesterol test reports common cholesterol levels including LDL, HDL, total cholesterol and triglycerides. An advanced lipid panel looks deeper. It can measure ApoB and count cholesterol particles, which gives more details about heart disease risk. This extra testing is helpful for some people. Not everyone needs it.
- **What is lipoprotein(a), and why should I test for it?**
  Lipoprotein(a), or Lp(a), is a cholesterol-carrying lipoprotein in your blood. Your level is mostly inherited, and when it is high, it can increase your risk of heart disease and stroke. New guidance recommends that every adult get tested for Lp(a) at least once in their lifetime.
- **What is ApoB, and why is it important for heart health?**
  ApoB (apolipoprotein B) is a protein found on cholesterol-carrying particles. It can build up in artery walls and contribute to heart disease.
- **What is a coronary artery calcium (CAC) scan?**
  A Coronary Artery Calcium (CAC) scan is a simple imaging test that checks for early plaque buildup in the artery walls. Men 40 years and older and women 45 years and older can be considered for a CAC scan. It is most helpful when it's unclear whether someone should start a cholesterol lowering medication.

Genetics and Inherited Risks

Familial hypercholesterolemia (FH)

- **What is familial hypercholesterolemia (FH)?**
  Familial hypercholesterolemia, or FH, is an inherited condition in which people may be born with very high LDL levels.
- **What are the types of FH?**
  - **Homozygous familial hypercholesterolemia** (HoFH)
  - Heterozygous familial hypercholesteremia (HeFH)
- **What are the signs and symptoms of FH?**
  Some people with FH have physical symptoms. Many don't. One symptom is cholesterol deposits in the Achilles tendons or the tendons of the hands or elbows. People with HoFH can develop cholesterol deposits in other areas, such as the skin surrounding the eyes or on the outer edges of the corneas.
- **How is FH diagnosed and treated?**
  Both types of FH can be diagnosed with a physical exam, lab results and personal and family medical history. If one person in a family has FH, then all close relatives (parents, siblings, children) may need to be checked for it. Also, if someone in a family has an early heart attack, it's a good idea for other family members to get tested.
  - For children with increased risk for FH, it is reasonable to be screened starting at age 2. All children who have not previously been screened should have their cholesterol checked between ages 9 and 11 and again at age 19.
  - FH cannot be treated by diet and exercise alone. Lifestyle changes can help, but medications are recommended to lower LDL cholesterol.

Lipoprotein(a)

- **What is lipoprotein(a), and why should I be tested?**
  Lipoprotein(a), or Lp(a), is a cholesterol-carrying lipoprotein in your blood. Your level is mostly inherited, and when it is high, it can increase your risk of heart disease and stroke. **About 1 in 5 people have high Lp(a),** and **many have no symptoms.**

  A regular cholesterol test (lipid panel) doesn't measure Lp(a). To know your level, ask your health care professional for an Lp(a) test. Current guidelines recommend **every adult be tested at least once in their lifetime**.
- **How does cascade screening work for family members?**
  Cascade screening is a way to check family members who may also be at risk. If your Lp(a) level is high, it's a good idea for your close family members, such as parents, siblings, and children, to get tested as well.
- **Can lifestyle lower Lp(a)?**
  Although lifestyle changes don't lower Lp(a) levels, it's important to lower your overall risk of heart disease and stroke by:
  - Eating a heart-healthy diet
  - Getting regular physical activity
  - Maintaining a healthy weight
  - Avoiding tobacco products
  - Managing blood pressure, diabetes and cholesterol
  - Getting restful sleep

Understanding My Risk

Your health care team may use a risk estimator called **PREVENT™** to estimate your chances of having a heart event or stroke in the next 10 and 30 years. This tool helps guide treatment plan decisions for you and your health care team. The risk estimate is based on health information usually collected during your annual check-up, such as age, blood pressure readings, cholesterol test results and other personal details.

- **How Will My Risk Factors Be Treated?**
  Whether your health care professional prescribes cholesterol-lowering medications or not, they will want you to make some lifestyle changes. These include eating a heart-healthy diet, getting regular physical activity, maintaining a healthy weight, avoiding tobacco products, managing blood pressure, diabetes and cholesterol, and getting a restful sleep.

  No matter what treatment you and your health care professional decide upon, it's very important that you stick to it. A treatment plan can't work the way it's supposed to if it isn't followed, but you can do it!

- **What Else Might Increase My Risk of Heart Attack and Stroke?**
  People with some health conditions and high cholesterol may be at higher risk for a heart event or stroke. These conditions include **type 2 diabetes**, **Cardio-Kidney-Metabolic** syndrome, HIV infection, history of cancer or current **cancer** diagnosis. Lowering cholesterol can help reduce the risk of serious heart problems.

My risk score: _____

Risk Factors That Cannot Change

These are risk factors that you cannot change.

- Genetics
- Age
- Sex
- Race/ethnicity

Risk Factors That Can Be Changed

Here is a list of things that are in your control. These are known as controllable risk factors.

- High blood pressure
- Diabetes
- Smoking tobacco and using nicotine products
- Physical inactivity
- Diet high in sodium, added sugar and saturated fat
- Being overweight
- Alcohol use

Lifestyle and Cholesterol Management

It is important to understand lifestyle changes that can lower your cholesterol. You can create habits that support your heart health by:

- Eating a heart-healthy diet
- Maintaining a healthy weight
- Getting regular physical activity
- Avoiding tobacco products
- Managing blood pressure, diabetes and cholesterol
- Getting 7–9 hours per day of restful sleep

How to lower cholesterol through healthy living

- **Which foods lower cholesterol?**
  Enjoy vegetables, fruits, whole grains, beans, nuts, seeds, unsaturated fats and lean proteins as part of an overall healthy eating pattern. Limit ultra-processed foods that are high in saturated fats, added sugars and sodium. Making healthier **recipes** doesn't mean giving up flavor.

  These simple **cooking tips** will help you prepare tasty, heart-healthy recipes that could help improve your cholesterol levels by reducing excess saturated fat.

- **How does physical activity help lower cholesterol?**
  Being active can help lower your cholesterol by bringing down LDL bad cholesterol and may raise HDL good cholesterol. When you move more, your body is better at clearing out extra cholesterol from your blood. This helps keep your arteries clearer and reduces your risk of heart disease and stroke.

Cholesterol-Lowering Medications

You may need a cholesterol-lowering medication because your body needs extra help lowering your cholesterol levels. Healthy habits like a heart-healthy diet and regular physical activity are still important. You and your health care professional can choose a treatment plan that feels right for you.

What types of cholesterol-lowering medications are available?

LDL cholesterol–lowering medications

These medications help lower LDL cholesterol. Some can be taken with a statin to lower LDL even more.

- **Statins** lower LDL by reducing cholesterol production in the liver. Statins are often the first medication recommended to lower LDL cholesterol. Examples include atorvastatin, rosuvastatin, and simvastatin.
- **Ezetimibe** prevents cholesterol from being absorbed in the intestines. It is the most commonly used non-statin medications to lower LDL cholesterol.

- **PCSK9 inhibitors** help the liver remove more LDL from the blood.
  - **The monoclonal antibodies** type lowers LDL cholesterol by binding to a protein made in the liver. Common names include alirocumab and evolocumab.
  - **The siRNA** type lowers LDL by stopping the liver from producing PCSK9. An example is inclisiran.
- **ACLY inhibitors** block cholesterol production in the liver. They may be used with other cholesterol-lowering medications to help lower LDL further in adults. An example is bempedoic acid.
- **Bile acid sequestrants** help the intestines to remove more cholesterol by binding bile acids. Some examples are cholestyramine, colesevelam and colestipol.
- **Microsomal TG transfer protein inhibitors** lower LDL by blocking the body from making certain lipoproteins that carry cholesterol. They are used only for people with homozygous familial hypercholesterolemia (HoFH). An example is lomitapide.
- **ANGPTL3 inhibitors** lower LDL by blocking a protein that affects how the body removes fats from the blood. They are used only for people with HoFH. An example is evinacumab dgnb.

Triglyceride-lowering medications

These medications can lower triglycerides and may slightly lower LDL cholesterol. When triglyceride levels are very high, lowering them can help prevent pancreatitis, a serious and painful swelling of the pancreas.

- **Fibrates** are especially good at lowering triglyceride levels and have a mild LDL-lowering effect. Common names are fenofibrate, fenofibric acid, and gemfibrozil.
- **Omega 3 fatty acids** help lower high triglycerides in the blood. These require a prescription and are different from fish oil supplements. Examples include omega-3 acid ethyl esters and icosapent ethyl (IPE).
- **Niacin (nicotinic acid)** is a vitamin B that lowers triglycerides by reducing how much fat the liver makes. It may also raise HDL and mildly lower LDL. Take this only if prescribed. Examples are extended-release niacin and immediate-release niacin.
- **ApoC III inhibitors** lower triglycerides by reducing a protein that affects how the body clears fats from the blood. They are used only for people with familial chylomicronemia syndrome (FCS). An example is olezarsen.

Follow directions, report any side effects, and don't stop treatment without talking to your health care professional.

Dietary supplements are not recommended for lowering cholesterol and may interact with medications. Always tell your health care professional if you use any supplements.

Working With Your Health Care Professional

Working closely with your health care professional is one of the most important steps you can take to understand your cholesterol levels, reduce your risk of heart attack and stroke, and create a plan that supports your long-term health.

Managing cholesterol is not something you have to do alone—your health care professional is your partner in this process.

Why This Partnership Matters

Your health care professional helps you:

- Understand what your cholesterol levels mean
- Learn how your personal risk factors affect your heart health
- Understand which lifestyle steps may help and whether medication is needed
- Monitor your progress and adjust your plan when needed
- Navigate questions, side effects or challenges that come up along the way

Shared decision making means you and your health care professional make decisions together so your treatment plan fits your needs and daily life. When a plan works for you, it's easier to follow and stick with your goals.

How to Prepare for Your Visit

You can get more out of each appointment by bringing:

- A list of your current medications and supplements
- Recent lab results (if you have them)
- Notes about any symptoms or side effects
- Your health history or family history updates
- Questions you want to ask
- Any challenges you've faced following your plan

Questions to Ask Your Health Care Professional

These questions can help guide an effective conversation:

- What do my cholesterol levels mean?
- Is my cholesterol putting me at risk for heart disease or stroke?
- Can I lower my cholesterol with lifestyle changes, or do I need medication?
- What are the benefits and possible side effects of the medication recommended for me?
- How will I know if the medication is working?
- When should I have my cholesterol checked again?
- Are there other tests I should consider, such as Lp(a), ApoB or a coronary artery calcium (CAC) scan?
- Which lifestyle changes would make the biggest difference for me?

Feel free to write down answers or ask for written instructions so you can review them later.

During the Appointment

It's important to actively participate in your care. You can:

- Ask questions whenever something isn't clear
- Tell your health care professional about your preferences, concerns and goals
- Mention any difficulties with medication, lifestyle changes or costs
- Clarify your LDL target and what steps will help you reach it
- Discuss follow-up plans and when to return

If you don't understand something, it's always okay to ask for more explanation.

After the Appointment: Staying Engaged

Working with your health care professional doesn't stop when the visit ends. To stay on track:

- Follow up on lab work and review results
- Take medications exactly as prescribed
- Reach out if you experience side effects, there are often alternatives
- Use reminders or tools to help take medications consistently
- Keep regular appointments to monitor your progress

Your health care professional wants to support you every step of the way, and staying in communication helps ensure your plan continues to work for you.

My Treatment Plan

Use this worksheet to track your cholesterol levels, risk related test results and the steps you and your health care professional decide on together.

Lipid Panel

Total Cholesterol: _____

LDL (Bad Cholesterol): _____

HDL (Good Cholesterol): _____

Triglycerides: _____

My LDL Goal: _____

Other Tests (as applicable)

Lp(a): _____ ApoB: _____

Coronary Artery Calcium (CAC) Score: _____

Other tests discussed: _____

My Medications (if recommended)

Medication name(s): _____

Dose / How often: _____

What this medication helps with: _____

Notes or side effects to watch: _____

Lifestyle Steps I Will Focus On

- ☐ Eating heart-healthy meals
- ☐ Getting regular physical activity
- ☐ Stopping tobacco and nicotine products
- ☐ Managing blood pressure or diabetes
- ☐ Maintaining a healthy weight
- ☐ Getting 7–9 hours of restful sleep
- ☐ Other lifestyle goals: _____

My Follow-Up Plan

Next cholesterol test due: _____

Next appointment with my health care professional:

Questions to ask at my next visit:

Notes

Resources

About Cholesterol

- What is Cholesterol? (PDF) | Spanish (PDF)
- Cholesterol Questions For Your Doctor (PDF) | Spanish (PDF)

Understanding Risk

- Understanding My Cholesterol Risk (PDF)
- Reduce Your Risk of ASCVD (PDF) | Spanish (PDF)
- How Do My Cholesterol Levels Affect My Risk of Heart Attack and Stroke? (PDF) | Spanish (PDF)
- What Does My LDL Cholesterol Number Mean? (PDF) | Spanish (PDF)
- Why Should I Know My LDL Cholesterol? (PDF) | Spanish (PDF)

Management Resources

- Cholesterol Medications Checklist (PDF)
- My Cholesterol Treatment Plan (PDF)
- How Can I Improve My Cholesterol? (PDF) | Spanish (PDF)
- How Can I Monitor My Cholesterol, Blood Pressure and Weight? (PDF)
- Tips for Talking to Your Doctor About ASCVD (PDF) | Spanish (PDF)
- LDL Cholesterol Questions for My Doctor (PDF) | Spanish (PDF)
- Cholesterol-Lowering Medications (PDF) | Spanish (PDF)
- LDL Cholesterol: Myths vs. Facts (PDF) | Spanish (PDF)

Lipoprotein(a) Infographics

- What is Lipoprotein(a) (PDF) | Spanish (PDF)
- Understanding the Lp(a) Test (PDF) | Spanish (PDF)
- Understanding My Lp(a) Risk (PDF) | Spanish (PDF)
- Understanding Cascade Screening (PDF) | Spanish (PDF)
- Lipoprotein: Myths vs. Facts (PDF) | Spanish (PDF)
- Questions to Ask Your Health Care Professional about High Lipoprotein(a) (PDF) | Spanish (PDF)

Learn more at **heart.org/Cholesterol**.