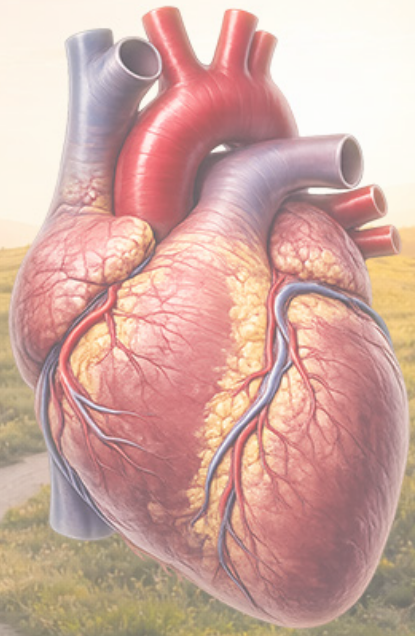
Managing Cholesterol
Protecting Your Heart



Reducing Cardiovascular Risk
A Patient Guide

Foreword

Learning that you have high cholesterol or a higher risk for heart disease can bring up questions. You may feel fine and wonder why treatment is needed.

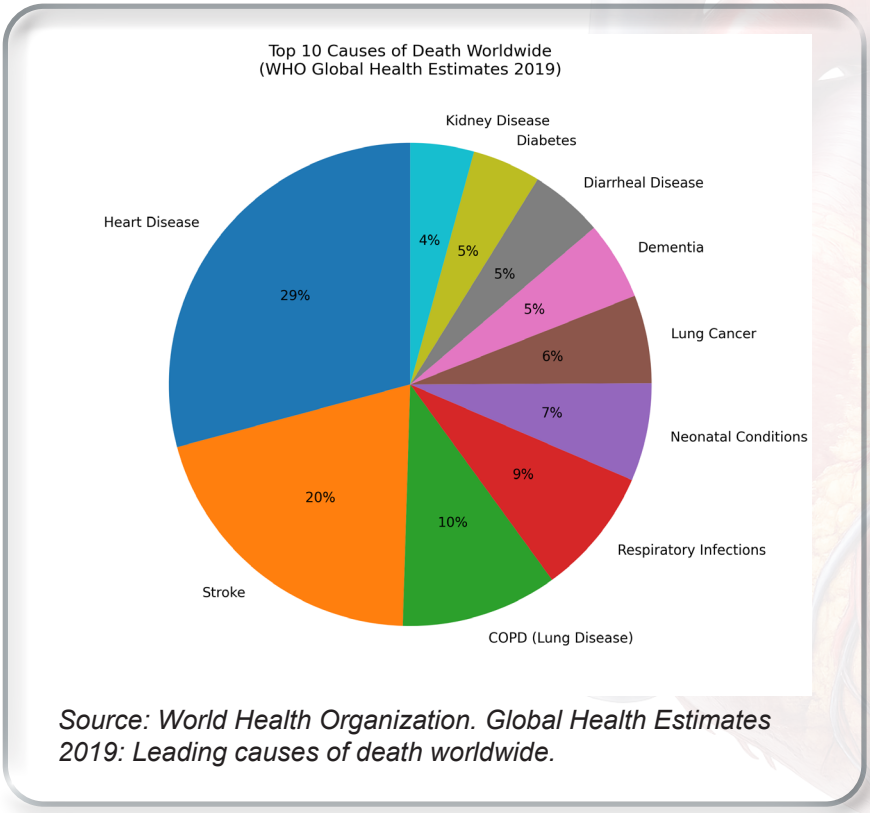
This booklet explains cholesterol and heart disease in clear, simple terms. It describes how cholesterol is tested, how risk is measured, and how lifestyle changes and medicines can work together to protect your heart and brain over time.

You do not have to manage this alone. This booklet is meant to support conversations with your health care team and help you take an active role in your care.

What is Cardiovascular Disease?

Understanding Cardiovascular Disease

- Cardiovascular disease refers to conditions that affect the heart and blood vessels
- The most common and serious form is atherosclerotic cardiovascular disease (ASCVD) and blood vessels
- ASCVD develops when blood vessels become narrowed or blocked over time
- This process usually happens slowly and without early symptoms
- Heart attacks and strokes are the most serious outcomes of ASCVD
- ASCVD is a leading cause of illness and death worldwide



Source: World Health Organization. Global Health Estimates 2019: Leading causes of death worldwide.

Why Cardiovascular Disease Is a Concern

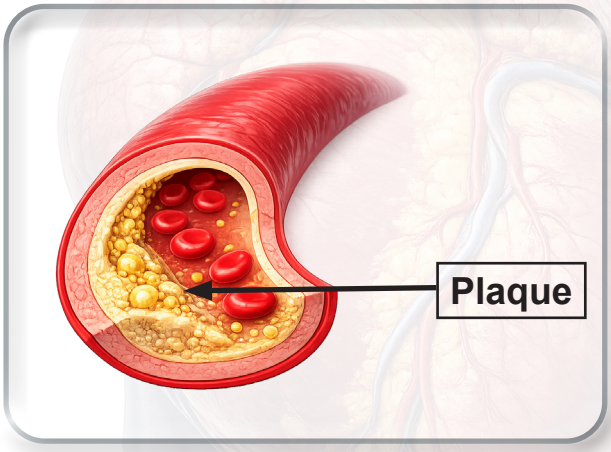
- Many people do not know they have ASCVD until a major event occurs
- Damage can build silently over many years
- Early understanding helps prevent long-term complications
- Prevention focuses on reducing risk before symptoms appear

What is Cholesterol?

- Cholesterol is a waxy, fat-like substance found in the blood
- The body needs cholesterol to:
  - Build cell membranes
  - Make hormones
  - Support normal body functions
- Most cholesterol is produced by the liver
- Some cholesterol comes from food
- Cholesterol itself is not harmful
- Problems occur when cholesterol levels stay too high for too long

Types of Cholesterol

Low-density lipoprotein (LDL) cholesterol

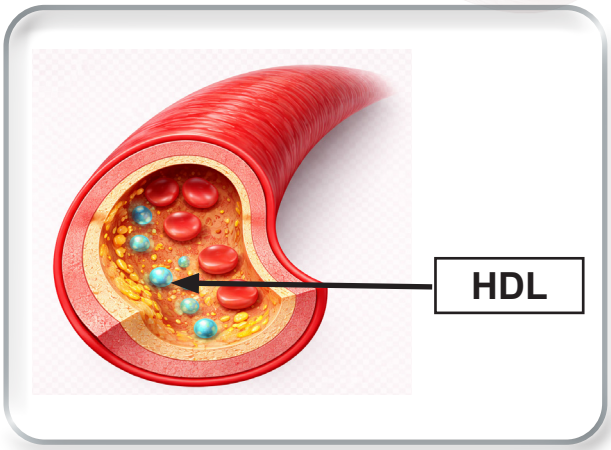


- Often called “bad” cholesterol
- Can cause plaque buildup in blood vessels
- Higher levels increase cardiovascular risk

Reduce or limit these types of foods

- Limit foods high in saturated fat like fatty meats and full-fat dairy (e.g., Butter, Cheese, Bacon)
- Avoid trans fats (found in some fried and packaged foods)
- Cut back on processed and fast foods
- Limit sugary foods and drinks

High-density lipoprotein (HDL) cholesterol



- Often called “good” cholesterol
- Helps remove cholesterol from the bloodstream
- Higher levels are protective

Healthy Lifestyle helps build HDL

- Be active most days (walking, yard work, or chores all count)
- Choose healthy fats like olive oil, nuts, and fish
- Maintain a healthy weight
- Avoid smoking and tobacco products

What is Cholesterol?

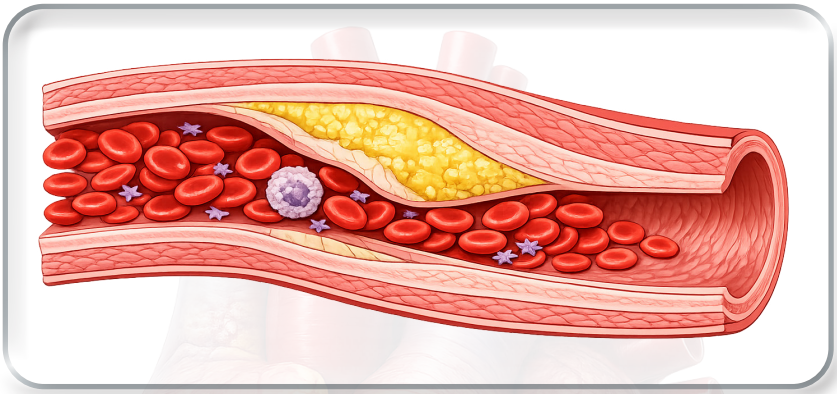
Triglycerides are another type of fat found in the blood

- High triglyceride levels can:
  - Increase cardiovascular risk
  - Be associated with low HDL or high LDL
- Triglyceride levels are interpreted along with other cholesterol values
- They may also be higher in people with diabetes, obesity, or metabolic syndrome
- They come from:
  - Extra calories the body stores
  - Sugary foods and drinks
  - Alcohol

How Cholesterol Causes ASCVD

How Plaque Forms

- Excess cholesterol can collect inside blood vessel walls
- These deposits form a plaque

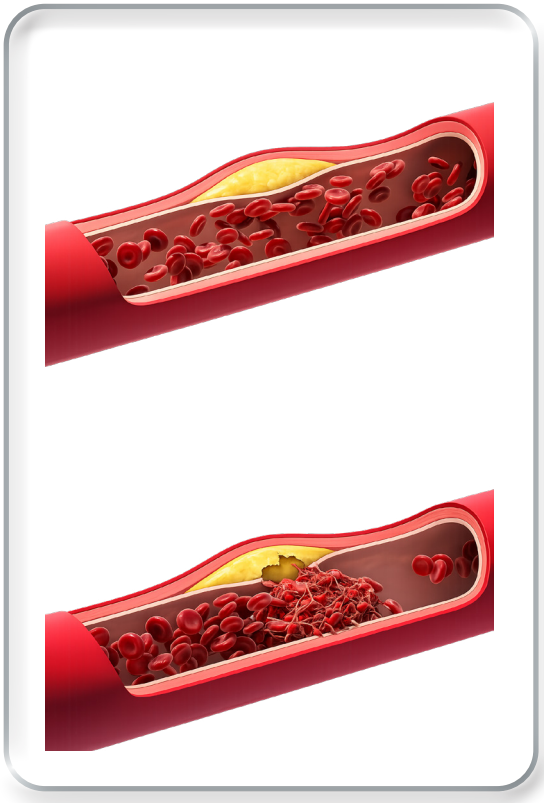


Plaque is made of:

- Cholesterol
- Fat
- Fibrous tissue
- Sometimes blood clots

Over time, plaque can:

- Narrow blood vessels
- Reduce blood flow
- Make vessels stiff and less flexible



How ASCVD Leads to Heart Attack and Stroke

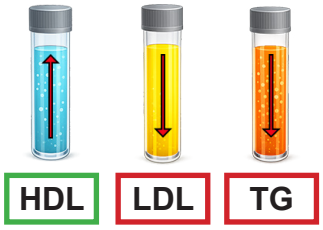
- Plaque buildups can begin in childhood and progress silently for decades
- Plaque in an artery can rupture suddenly
- A ruptured plaque can trigger a blood clot
- A blood clot can completely block blood flow
- Blocked blood flow to the heart causes a heart attack
- Blocked blood flow to the brain causes a stroke

Risk Factors

Understanding Cardiovascular Risk

- Cardiovascular risk depends on more than cholesterol alone

- Risk is influenced by:



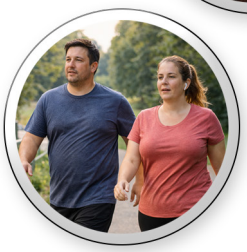
Cholesterol levels

Age

Blood pressure

Blood sugar

Smoking



Changeable factors
(Food, Weight, Exercise)

Non-changeable factors
(Genetics, Age, Sex)

- Some people develop ASCVD with cholesterol levels once considered “normal”
- Risk increases with age as plaque accumulates over time

The more risk factors you have, the higher your chance of heart attack or stroke.

Prevention

ASCVD often has no warning signs.

Even small cholesterol reductions maintained over time provide major benefits.

ASCVD can develop slowly over many years without causing symptoms. Cholesterol plays an important role in plaque buildup in the arteries. You can lower your risk by managing cholesterol with healthy eating, regular physical activity, and medicines if your provider prescribes them. Taking steps to control risk factors and continuing care can help prevent heart attacks and strokes.

How We Test: Overview of Cardiovascular Risk Assessment

Why Testing Matters

- Cholesterol and heart disease often develop without symptoms
- Testing helps identify risks before a heart attack or stroke occurs
- Testing allows providers and patients to:
  - Estimate cardiovascular risk
  - Decide if treatment is needed
  - Track changes in health over time

Testing also supports shared decision making between you and your healthcare provider

What Testing Looks At

Your provider looks at several factors together, not just one lab result.

These include:

- Blood cholesterol levels (LDL, HDL, and triglycerides)
- Kidney function
- Blood pressure
- Blood sugar level or diabetes
- Smoking status
- Age and sex
- Family history of heart disease

Looking at these factors together, helps estimate your overall risk for heart attack or stroke.

Why Overall Risk Matters

A single lab value does not tell the whole story.

Two people with the same cholesterol level may have different levels of risk depending on their other health factors.

Your provider uses this information to decide:

- Whether lifestyle changes are enough
- Whether medication may help lower risk
- How often your health should be monitored

Lab Testing

What Tests Are Used

Providers use several routine lab tests to help assess cardiovascular health.

Common tests include:

- Lipid Panel – measures cholesterol levels (Can be fasting)
- Hemoglobin A1c – checks average blood sugar over 2 – 3 months
- Comprehensive Metabolic Panel (CMP) – evaluates kidney and liver function
- In some patients, urinalysis (UA) tests may also be used to check kidney health.

These tests help identify conditions that increase risk of heart disease and stroke.

What the Results Look Like

Your results are usually shown in a lab report that lists each test and its value.

Common cholesterol results include:

- Total cholesterol
- LDL cholesterol (“bad” cholesterol)
- HDL cholesterol (“good” cholesterol)
- Triglycerides

Common A1c results include:

- Normal – blood sugar is in a healthy range
- Prediabetes – blood sugar is higher than normal
- Diabetes – blood sugar levels are consistently high

Common CMP results include measurements of:

- Blood sugar
- Kidney function
- Electrolytes (such as sodium and potassium)
- Liver function

Common UA results include measurements of:

- Protein (assesses kidney stress or damage)
- Albumin (assesses kidney health)
- Signs of infection
- Blood in the urine

Your provider compares your results to recommended ranges and considers your overall health when interpreting them.

Additional Testing

When Additional Tests May Be Considered

- When cardiovascular risk is uncertain after routine testing
- When providers need more information to guide treatment decisions

Examples of Additional Testing

Coronary Artery Calcium (CAC) CT Scan

A CAC test uses a special CT scan to look for calcium in the arteries of the heart. Calcium can be a sign of plaque buildup in the arteries. The test produces a calcium score that helps estimate a person's risk for heart disease. Higher scores may mean more plaque is present in the arteries.

Lipoprotein(a) testing

Lipoprotein(a), or Lp(a), is a type of cholesterol found in the blood. High levels of Lp(a) can increase the risk of heart disease and stroke. These levels are mostly inherited and are not greatly affected by diet or lifestyle. This test is done using a simple blood sample.

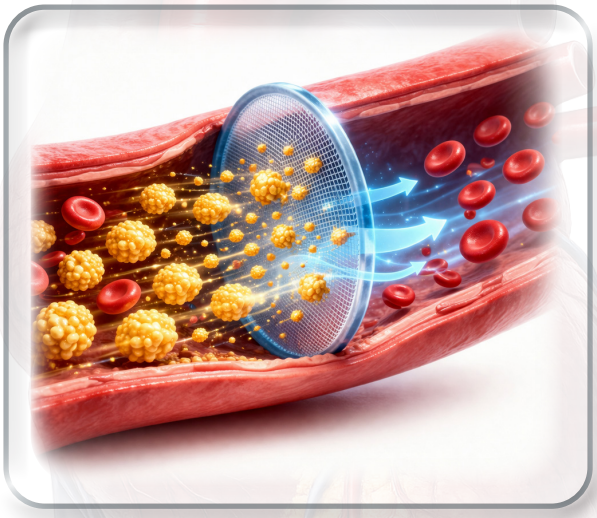
Not everyone needs these tests.

They may be used when providers need more information to understand heart disease risk.

How Treatment Helps Protect Your Heart

Why We Treat Cholesterol

- The goal is to lower the risk of heart attack and stroke
- Cholesterol treatment is about long-term protection, not short-term fixes
- Lowering cholesterol helps slow or stop plaque buildup in the arteries



What Treatment Does

- Reduce LDL (“bad”) cholesterol over time
- Help stabilize plaque in the arteries
- Reduce inflammation in blood vessels
- Reduce the chance of plaque rupture and blood clots

Who Benefits From Treatment

- People at increased cardiovascular risk
- People with known ASCVD
- People with multiple risk factors, even without symptoms
- People whose risk increases with age
- Lowering your risk helps you stay healthy and present for your family

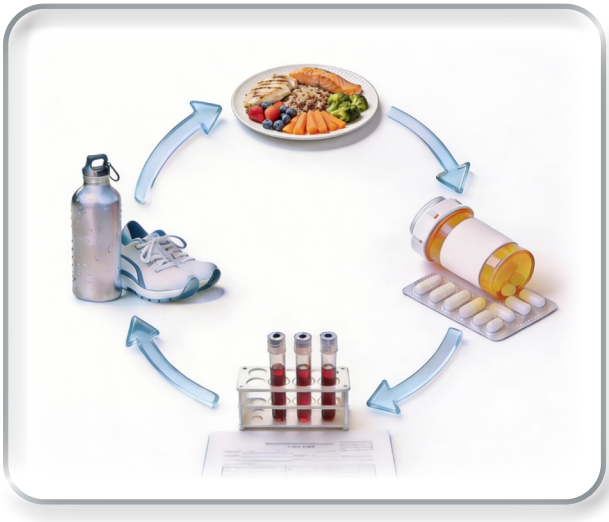
Treatment is Individualized

No One-Size-Fits-All Approach

- Cholesterol treatment is based on:
  - Overall cardiovascular risk
  - Test results
  - Medical history
  - Preferences and goals
- Two people with the same cholesterol level may need different treatment plans
- Treatment decisions are made through shared decision making

What Providers Consider

- Cholesterol levels and trends over time
- Presence or absence of ASCVD
- Other conditions such as diabetes or high blood pressure
- Tolerance of medications
- Lifestyle factors and readiness for change



Adjusting Treatment Over Time

- Treatment plans may change as health changes
- Adjustments may include:
  - Lifestyle support
  - Medication changes
  - Monitoring frequency
- Ongoing reassessment supports safe and effective care

Lifestyle Changes:
The Foundation of Treatment

Lifestyle improvements reduce cardiovascular risk even when medications are used

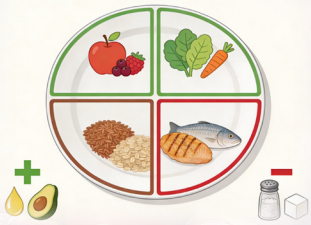
Cholesterol lowering

Weight management

Blood sugar control

Blood pressure control

Key Lifestyle Focus Areas



Heart-healthy food

Regular physical activity

Avoiding tobacco and nicotine

Limiting alcohol intake

Managing stress

Prioritizing sleep and recovery

Why Lifestyle Changes Matter

- Benefits begin quickly and increase over time
- Small changes maintained long-term can have large effects
- Lifestyle changes improve overall health, not just cholesterol numbers

Lifestyle changes, while essential to one's health, may not be enough to reduce cholesterol and the risk of cardiovascular disease.

Treatment Options:
Lifestyle Support

Heart-Healthy Eating

Focus on eating patterns rather than individual foods

Emphasize:

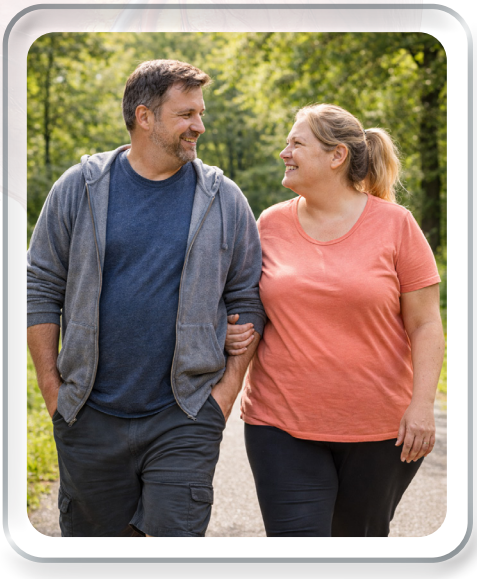
- Fruits and vegetables
- Whole grains
- Beans and legumes
- Nuts and seeds
- Seafood, especially fatty fish (salmon, etc.)
- Healthy oils (olive, canola, avocado)

Limit:

- Added sugars
- Saturated fats
- Highly processed foods
- Refined carbohydrates
- Excess sodium

Physical Activity as Treatment

- Avoid being sedentary
- Any movement is better than none. Even small amounts of activity can help your heart. Things like walking, doing chores, taking the stairs, or working in the yard all count. These everyday activities can help lower your risk of heart disease.
- Start low and go slow. Over days and weeks, try to add a little more movement as tolerated. Increasing activity too rapidly can lead to injuries and burnout.
- If possible, aim to build up to 150 minutes per week of moderate-intensity exercise
- Do as much as possible. The more physically active you are, the more you can lower your risk!
  - Non-Exercise Activity Thermogenesis (NEAT)
    - Household or yard work
    - Gardening
    - Walking around the house
    - Standing instead of sitting



Activity plans are based on your safety and ability, with gradual increases over time.

Treatment Options: Medication Overview

When Medications Are Recommended

- When cardiovascular risk remains elevated
- When lifestyle changes alone are not enough
- When a person has known ASCVD
- When long-term risk reduction is needed

How Medications Help

- Lower LDL (“bad”) cholesterol
- Reduce inflammation in blood vessels
- Stabilize plaque and reduce rupture risk
- Lower the chance of heart attack and stroke

Medication Use Is Individualized

- Medication choice depends on:
  - Cardiovascular risk level
  - Cholesterol levels
  - Other medical conditions
- Medications work with lifestyle changes

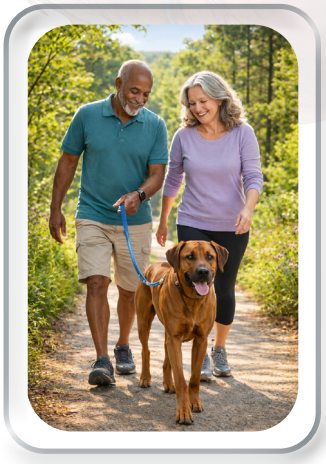
Side effects and safety

- Most people do well on these medicines
- Some may have muscle aches or other side effects
- Blood tests may be used to check your liver and response
- Side effects are often mild and can be managed
- Talk to your provider about any concerns

MEDICATION OPTIONS

	Generic Name	Trade Name	Route	How it works
Statins	Atorvastatin	Lipitor ®	Oral	Statins are medicines that help lower cholesterol. They lower how much “bad” (LDL) cholesterol your body makes and help remove it from your blood. They also help protect your blood vessels and keep plaque stable. Statins can lower LDL by about 30% - 50%. They may also help lower triglycerides.
	Rosuvastatin	Crestor ®		
	Simvastatin	Zocor ®		
	Lovastatin	Mevacor ®		
	Pravastatin	Pravachol ®		
	Fluvastatin	Lescol ®		
	Pitavastatin	Livalo ®		
If statins are not enough or not tolerated:				
Non-Statins	Ezetimibe	Zetia ®	Oral	Blocks cholesterol from food. Lowers LDL by about 20%.
	Alirocumab	Praluent ®	Injectable	Helps your liver remove more “bad” (LDL) cholesterol from your blood. Can lower LDL by about 50% - 70%.
	Evolocumab	Repatha ®		
	Inclisiran	Leqvio ®		
	Bempedoic Acid	Nexletol ®	Oral	Lowers how much “bad” (LDL) cholesterol your liver makes. Can lower LDL by about 15% - 40%.
	Icosapent Ethyl	Vascepa ®		Made from omega-3 fatty acids. Lowers triglycerides. Has little or no effect on LDL.

This is not an all-encompassing list.



Healthy eating, activity, and medicines can work together to lower your risk of heart attack and stroke.

Frequently Asked Questions

How does high cholesterol affect my life?

High cholesterol usually does not cause symptoms, so many people do not feel different day to day. Over time, however, cholesterol can build up in blood vessels and form plaque. This raises the risk of heart attack and stroke. Managing cholesterol helps protect the heart and brain and supports long-term health, even when you feel well.

What do cholesterol numbers mean?

Cholesterol blood tests measure different types of fats. LDL (“bad”) cholesterol can build up in blood vessels and increase heart disease risk. HDL (“good”) cholesterol helps remove extra cholesterol from the blood and carry it back to the liver. Triglycerides are another type of fat in the blood that can increase risk when levels are high. These values are looked at together to understand overall heart disease risk.

What can I do to lower my cholesterol?

Many people can lower cholesterol by making healthy lifestyle changes, such as eating a heart-healthy diet, staying physically active, avoiding tobacco, limiting alcohol, and managing stress. For some people, these steps may be enough. For others, especially when genetics or higher risks are involved, medicine may also be needed. Healthy habits remain important even when medicine is used.

How does exercise and diet affect cholesterol?

Regular physical activity and healthy eating play a key role in managing cholesterol. Any movement is better than none, and activities like walking, household chores, or yard work all count. A heart-healthy diet focuses on whole, less processed foods such as fruits, vegetables, whole grains, beans, nuts, seeds, and healthy oils like olive or canola oil. These habits improve cholesterol levels and overall heart health over time.

What foods should I limit to help lower my cholesterol?

Some foods can raise cholesterol or increase heart disease risk when eaten often. Foods high in saturated fat, added sugar, and salt should be limited. These include fried foods, fatty meats, processed meats, full-fat dairy products, baked goods, sweets, sugary drinks, and highly processed foods like fast food or packaged snacks. You do not need to avoid these foods completely, but eating them less often and choosing more whole, less processed foods can help lower cholesterol and protect your heart.

Frequently Asked Questions

How do genetics and other health conditions affect cholesterol or heart disease risk?

Some people inherit genes that cause cholesterol to stay high, even with healthy habits. You cannot change your genes, but you can lower your risk. People with inherited high cholesterol often need both lifestyle changes and medicine. Other conditions, such as diabetes, high blood pressure, kidney disease, or thyroid problems, can also affect cholesterol levels or increase heart disease risk. Your provider considers these factors when choosing the best treatment plan.

Do supplements help lower cholesterol levels?

Most supplements have not been shown to reliably lower LDL (“bad”) cholesterol or reduce the risk of heart attack or stroke. Omega-3 fatty acids, such as fish oil, can help lower triglycerides in some people, but they do not significantly lower LDL cholesterol. Supplements are not a replacement for healthy habits or prescribed medicines. Some supplements can interact with medications or cause side effects, so it is important to talk with your healthcare provider before taking any supplements for cholesterol.

What are statins, and are they safe to take long term?

Statins are medicines used to lower LDL (“bad”) cholesterol. They work by reducing how much cholesterol the liver makes and by making plaque in blood vessels less likely to break open. Statins have been studied for many years and are considered safe for most people. Most people do not have serious side effects, though some may notice muscle aches or mild discomfort. Rarely, statins can affect liver tests. If side effects occur, providers can often adjust the dose or change the medicine. Cholesterol levels often rise again if statins are stopped, so long-term use provides ongoing protection against heart attack and stroke.

MYTH	FACT
Genetics don’t affect cholesterol.	Genetics can affect cholesterol. Some people inherit genes that keep cholesterol high, even if they eat well and exercise. If high cholesterol runs in your family, your risk may be higher. Healthy habits still matter, but some people may also need medicine to lower cholesterol.
If I feel fine, my cholesterol must be fine.	High cholesterol usually has no symptoms. Many people feel normal, and do not know their cholesterol is high. Over time, cholesterol can build up in blood vessels and increase the risk of heart attack or stroke. Regular testing helps find high cholesterol early.
Only overweight people have high cholesterol levels.	Anyone can have high cholesterol. It is not only related to body weight. People who are thin or active can still have high cholesterol because of genetics, diet, or other health factors. This is why testing is important for everyone.

MYTH	FACT
All cholesterol is bad.	Your body needs some cholesterol. HDL (“good” cholesterol) helps remove extra cholesterol from your blood. HDL acts like a cleanup system. It carries extra cholesterol from the blood back to the liver so the body can remove it. Higher HDL levels help lower the chance of plaque buildup and protect the heart.
Lifestyle changes always fix high cholesterol.	Healthy lifestyle habits can lower cholesterol, but they may not be enough for everyone. Diet, exercise, and weight management help improve cholesterol levels and protect heart health. However, some people have high cholesterol because of genetics or other health conditions. In these cases, medicine may be needed along with healthy habits.
Young people don’t need to worry about cholesterol.	Plaque can begin forming at a young age. Cholesterol can build up in blood vessels early in life, even during childhood or young adulthood. This buildup often happens quietly without symptoms. Healthy habits started early—such as eating well, staying active, and avoiding tobacco—help protect the heart later in life.

Questions to Ask Your Provider

What are my cardiovascular risk factors?

What is my ten-year risk of heart attack or stroke?

Do I need any additional tests?

What changes should I make to reduce my risk?

Can you refer me to someone who will help me improve my diet, exercise, stress and/or sleep?

I smoke cigarettes and I am interested in quitting. Can you help me stop smoking?

Would medication help reduce my risk?

If you are prescribed medication, consider asking:

- **How does this medication work?**
- **How much benefit should I expect?**
- **How long does the medication take to become effective?**
- **Will I need any blood tests while taking this medication?**
- **Do I still need to take the medication even after my cholesterol levels improve?**
- **What are the common and serious side effects?**
- **Does this medication interact with any of my medications or supplements?**
- **What time of day should I take my medication?**
- **Are there any foods or supplements I should avoid while taking this medication?**

Resources

VA Nutrition and Food Services
https://www.nutrition.va.gov/

VA MOVE! Weight Management Program
https://www.move.va.gov/

VA Whole Health Program
https://www.va.gov/wholehealth

National Heart, Lung, and Blood Institute (NHLBI): High Blood Cholesterol
https://www.nhlbi.nih.gov/health-topics/high-blood-cholesterol

VA/DoD Clinical Practice Guideline Patient Summary
https://www.healthquality.va.gov/HEALTHQUALITY/guidelines/CD/lipids/Lipids-CPG_2025-Patient-Summary_final_20251117.pdf

VA/DoD Evidence-Based Practice

To access the VA/DoD Clinical Practice Guidelines webpage (which includes the Lipids Management for Cardiovascular Disease Risk Reduction CPG), visit:
https://www.health.mil/About-MHS/MHS-Elements/DVPO/VADOD-CPGs

Scan QR Code to visit Dyslipidemia CPG Website