



[Home](#) → [Health Topics](#) → LDL: The "Bad" Cholesterol

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LDL: The "Bad" Cholesterol

Also called: Low-density lipoprotein

What is cholesterol?

Cholesterol [<https://medlineplus.gov/cholesterol.html>] is a waxy, fat-like substance that's found in all the cells in your body. Your liver makes cholesterol, and it is also in some foods, such as meat and dairy products. Your body needs some cholesterol to work properly. But having too much cholesterol in your blood raises your risk of **coronary artery disease** [<https://medlineplus.gov/coronaryarterydisease.html>] .

What are LDL and HDL?

LDL and HDL [<https://medlineplus.gov/hdlthegoodcholesterol.html>] are two types of lipoproteins. They are a combination of fat (lipid) and protein. The lipids need to be attached to the proteins so they can move through the blood. LDL and HDL have different purposes:

- LDL stands for low-density lipoproteins. It is sometimes called the "bad" cholesterol because a high LDL level leads to a buildup of cholesterol in your arteries.
- HDL stands for high-density lipoproteins. It is sometimes called the "good" cholesterol because it carries cholesterol from other parts of your body back to your liver. Your liver then removes the cholesterol from your body.

How can a high LDL level raise my risk of coronary artery disease and other diseases?

If you have a high LDL level, this means that you have too much LDL cholesterol in your blood. This extra LDL, along with other substances, forms plaque. The plaque builds up in your arteries; this is a condition called **atherosclerosis** [<https://medlineplus.gov/atherosclerosis.html>] .

Coronary artery disease happens when the plaque buildup is in the arteries of your heart. It causes the arteries to become hardened and narrowed, which slows down or blocks the blood flow to your heart. Because your blood carries oxygen to your heart, this means that your heart may not be able to get enough oxygen. This can cause **angina** [<https://medlineplus.gov/angina.html>] (chest pain), or if the blood flow is completely blocked, a **heart attack** [<https://medlineplus.gov/heartattack.html>] .

How do I know what my LDL level is?

A blood test [<https://medlineplus.gov/cholesterollevelswhatyouneedtoknow.html>] can measure your cholesterol levels, including LDL. When and how often you should get this test depends on your age, risk factors, and family history. The general recommendations are:

For people who are age 19 or younger::

- The first test should be between ages 9 to 11
- Children should have the test again every 5 years
- Some children may have this test starting at age 2 if there is a family history of high blood cholesterol, heart attack, or stroke

For people who are age 20 or older::

- Younger adults should have the test every 5 years
- Men ages 45 to 65 and women ages 55 to 65 should have it every 1 to 2 years

For people who are older than 65:

- They should have the test every year.

You may need to get your cholesterol checked more often if you have **heart disease** [<https://medlineplus.gov/heartdiseases.html>] , **diabetes** [<https://medlineplus.gov/diabetes.html>] , or a family history of high cholesterol.

What can affect my LDL level?

Things that can affect your LDL level include:

- **Diet.** Saturated fat and cholesterol in the food you eat make your LDL level rise
- **Weight.** Being overweight tends to raise your LDL level, lower your HDL level, and increase your total cholesterol level
- **Physical Activity.** A lack of physical activity [<https://medlineplus.gov/healthrisksofaninactivelifestyle.html>] can lead to weight gain, which can raise your LDL level
- **Smoking.** Cigarette smoking [<https://medlineplus.gov/smoking.html>] lowers your HDL cholesterol. Since HDL helps to remove LDL from your arteries, if you have less HDL, that can contribute to you having a higher LDL level.
- **Age and Sex.** As women and men get older, their cholesterol levels rise. Before the age of menopause, women have lower total cholesterol levels than men of the same age. After the age of menopause, women's LDL levels tend to rise.
- **Genetics.** Your genes partly determine how much cholesterol your body makes. High cholesterol can run in families. For example, familial hypercholesterolemia (FH) is an inherited form of high blood cholesterol.
- **Medicines.** Certain medicines, including **steroids** [<https://medlineplus.gov/steroids.html>] , some **blood pressure medicines** [<https://medlineplus.gov/bloodpressuremedicines.html>] , and **HIV medicines** [<https://medlineplus.gov/hivmedicines.html>] , can raise your LDL level.
- **Other medical conditions.** Diseases such as **chronic kidney disease** [<https://medlineplus.gov/chronickidneydisease.html>] , **diabetes**, and **HIV** [<https://medlineplus.gov/hiv.html>] can cause a higher LDL level.
- **Race or ethnicity.** People from certain racial or ethnic groups may have an increased risk of high blood cholesterol. For example, African Americans typically have higher HDL and LDL cholesterol levels than White Americans. Asian Americans are more likely to have higher LDL levels than other groups.

What should my LDL level be?

With LDL cholesterol, lower numbers are better, because a high LDL level can raise your risk for coronary artery disease and related problems. The general ranges for healthy adults are:

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

If you have coronary artery disease or are at high risk for it, your health care provider may have different goals for your LDL level.

How can I lower my LDL level?

There are two main ways to lower your LDL cholesterol level:

- **Heart-healthy lifestyle changes**, which include:
 - **Heart-healthy eating.** A heart-healthy eating plan limits the amount of saturated and trans fats that you eat. Examples of eating plans that can lower your LDL level include the Therapeutic Lifestyle Changes diet [<https://medlineplus.gov/howtolowercholesterolwithdiet.html>] and the DASH eating plan [<https://medlineplus.gov/dasheatingplan.html>] .
 - **Weight management** [<https://medlineplus.gov/weightcontrol.html>] . If you are overweight, losing weight can help lower your LDL level.
 - **Physical Activity.** Everyone should get regular physical activity [<https://medlineplus.gov/howmuchexercisedoined.html>] .
- **Drug Treatment.** If lifestyle changes alone do not lower your LDL level enough, you may also need to take medicines. There are several types of cholesterol-lowering drugs [<https://medlineplus.gov/cholesterolmedicines.html>] available, including statins [<https://medlineplus.gov/statins.html>] . The medicines work in different ways and can have different side effects. Talk to your provider about which one is right for you. While you are taking medicines to lower your LDL level, you still should continue with the lifestyle changes.


Some people with familial hypercholesterolemia (FH) may receive a treatment called lipoprotein apheresis. This treatment uses a filtering machine to remove LDL cholesterol from the blood. Then the machine returns the rest of the blood back to the person.

NIH: National Heart, Lung, and Blood Institute

Learn More

- Apolipoprotein B100 [<https://medlineplus.gov/ency/article/003502.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003502.htm>]
- Cholesterol - what to ask your doctor [<https://medlineplus.gov/ency/patientinstructions/000211.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000211.htm>]
- Cholesterol Good and Bad [<https://medlineplus.gov/medlineplus-videos/cholesterol-good-and-bad/>]
  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/videos-de-medlineplus/colesterol-bueno-y-colesterol-malo/>]
- Cholesterol Levels [<https://medlineplus.gov/lab-tests/cholesterol-levels/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/niveles-de-colesterol/>]
- Cholesterol Medicines: MedlinePlus Health Topic [<https://medlineplus.gov/cholesterolmedicines.html>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/cholesterolmedicines.html>]
- Familial hypercholesterolemia [<https://medlineplus.gov/ency/article/000392.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000392.htm>]
- How Low Should LDL Cholesterol Go? [<https://www.health.harvard.edu/heart-health/how-low-should-ldl-cholesterol-go>]
(Harvard Medical School)
- How to Lower Cholesterol: MedlinePlus Health Topic [<https://medlineplus.gov/howtolowercholesterol.html>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/howtolowercholesterol.html>]
- Lower Your LDL [<https://www.heart.org/en/health-topics/cholesterol/hdl-good-ldl-bad-cholesterol-and-triglycerides/lower-your-ldl>] (American Heart Association)
- My LDL Cholesterol Guide [<https://www.heart.org/-/media/Files/Health-Topics/Cholesterol/My-LDL-Cholesterol-Guide.pdf>]
(American Heart Association) - PDF
- Statins: MedlinePlus Health Topic [<https://medlineplus.gov/statins.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/statins.html>]

Clinical Trials

- ClinicalTrials.gov: Cholesterol, LDL [<https://clinicaltrials.gov/search?cond=%22Cholesterol,+LDL%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Association between outdoor artificial light at night, circadian health, and LDL-C...
[<https://www.ncbi.nlm.nih.gov/pubmed/40722184>]
- Article: Association of outcome with non-high-density lipoprotein cholesterol to high-density lipoprotein cholesterol...
[<https://www.ncbi.nlm.nih.gov/pubmed/40713645>]
- Article: Cardiovascular risk and achievement of target levels in low-density lipoprotein cholesterol...
[<https://www.ncbi.nlm.nih.gov/pubmed/40699550>]
- LDL: The "Bad" Cholesterol -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Cholesterol%2C+LDL%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Patient Handouts

- Cholesterol - drug treatment [<https://medlineplus.gov/ency/patientinstructions/000314.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000314.htm>]
- Cholesterol testing and results [<https://medlineplus.gov/ency/patientinstructions/000386.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000386.htm>]



MEDICAL ENCYCLOPEDIA

LDL test [<https://medlineplus.gov/ency/article/007811.htm>]

Related Health Topics

- Cholesterol [<https://medlineplus.gov/cholesterol.html>]
- Cholesterol Levels: What You Need to Know [<https://medlineplus.gov/cholesterollevelswhatyouneedtoknow.html>]
- Cholesterol Medicines [<https://medlineplus.gov/cholesterolmedicines.html>]
- Dietary Fats [<https://medlineplus.gov/dietaryfats.html>]
- HDL: The "Good" Cholesterol [<https://medlineplus.gov/hdlthegoodcholesterol.html>]
- Heart Diseases [<https://medlineplus.gov/heartdiseases.html>]
- High Cholesterol in Children and Teens [<https://medlineplus.gov/highcholesterolinchildrenandteens.html>]
- How to Lower Cholesterol [<https://medlineplus.gov/howtolowercholesterol.html>]
- How to Lower Cholesterol with Diet [<https://medlineplus.gov/howtolowercholesterolwithdiet.html>]

Nutrition [<https://medlineplus.gov/nutrition.html>]

Statins [<https://medlineplus.gov/statins.html>]

Triglycerides [<https://medlineplus.gov/triglycerides.html>]

VLDL Cholesterol [<https://medlineplus.gov/vldlcholesterol.html>]

National Institutes of Health

The primary NIH organization for research on *LDL: The "Bad" Cholesterol* is the National Heart, Lung, and Blood Institute [<http://www.nhlbi.nih.gov/>]

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