

CHOLESTEROL/LIPIDS (HYPERLIPIDAEMIA)

Definition

Cholesterol is a waxy substance that's found in the fats (lipids) in your blood. While your body needs cholesterol to continue building healthy cells, having high cholesterol can increase your risk of heart disease.

When you have high cholesterol, you may develop fatty deposits in your blood vessels. Eventually, these deposits make it difficult for enough blood to flow through your arteries. Your heart may not get as much oxygen-rich blood as it needs, which increases the risk of a heart attack. Decreased blood flow to your brain can cause a stroke.

High cholesterol (hypercholesterolemia) can be inherited, but it's often the result of unhealthy lifestyle choices, and thus preventable and treatable. A healthy diet, regular exercise and sometimes medication can go a long way toward reducing high cholesterol.

Symptoms

High cholesterol has no symptoms. A blood test is the only way to detect high cholesterol.

When to see a doctor

Ask your doctor for a baseline cholesterol test at age 20 and then have your cholesterol retested at least every five years. If your test results aren't within desirable ranges, your doctor may recommend more frequent measurements. Your doctor may also suggest you have more frequent tests if you have a family history of high cholesterol, heart disease or other risk factors, such as smoking, diabetes or high blood pressure.

Causes

Cholesterol is carried through your blood, attached to proteins. This combination of proteins and cholesterol is called a lipoprotein. You may have heard of different types of cholesterol, based on what type of cholesterol the lipoprotein carries.

They are:

- **Low-density lipoprotein (LDL):** LDL, or "bad," cholesterol transports cholesterol particles throughout your body. LDL cholesterol builds up in the walls of your arteries, making them hard and narrow.
- **Very-low-density lipoprotein (VLDL):** This type of lipoprotein contains the most triglycerides, a type of fat, attached to the proteins in your blood. VLDL cholesterol makes LDL cholesterol larger in size, causing your blood

vessels to narrow. If you're taking cholesterol-lowering medication but have a high VLDL level, you may need additional medication to lower your triglycerides.

- **High-density lipoprotein (HDL):** HDL, or "good," cholesterol picks up excess cholesterol and takes it back to your liver.

Factors within your control — such as inactivity, obesity and an unhealthy diet — contribute to high LDL cholesterol and low HDL cholesterol. Factors beyond your control may play a role, too. For example, your genetic makeup may keep cells from removing LDL cholesterol from your blood efficiently or cause your liver to produce too much cholesterol.

Risk Factors

You're more likely to have high cholesterol that can lead to heart disease if you have any of these risk factors:

- **Smoking:** Cigarette smoking damages the walls of your blood vessels, making them likely to accumulate fatty deposits. Smoking may also lower your level of HDL, or "good," cholesterol.
- **Obesity:** Having a body mass index (BMI) of 30 or greater puts you at risk of high cholesterol.
- **Poor diet:** Foods that are high in cholesterol, such as red meat and full-fat dairy products, will increase your total cholesterol. Eating saturated fat, found in animal products, and trans fats, found in some commercially baked cookies and crackers, also can raise your cholesterol level.
- **Lack of exercise:** Exercise helps boost your body's HDL "good" cholesterol while lowering your LDL "bad" cholesterol. Not getting enough exercise puts you at risk of high cholesterol.
- **High blood pressure:** Increased pressure on your artery walls damages your arteries, which can speed the accumulation of fatty deposits.
- **Diabetes:** High blood sugar contributes to higher LDL cholesterol and lower HDL cholesterol. High blood sugar also damages the lining of your arteries.
- **Family history of heart disease:** If a parent or sibling developed heart disease before age 55, high cholesterol levels place you at a greater than average risk of developing heart disease.

Complications

High cholesterol can cause atherosclerosis, a dangerous accumulation of cholesterol and other deposits on the walls of your arteries. These deposits (plaques) can reduce blood flow through your arteries, which can cause complications, such as:

- **Chest pains:** If the arteries that supply your heart with blood (coronary arteries) are affected, you may have chest pain (angina) and other symptoms of coronary artery disease.
- **Heart attack:** If plaques tear or rupture, a blood clot may form at the plaque-rupture site — blocking the flow of blood or breaking free and plugging an artery downstream. If blood flow to part of your heart stops, you'll have a heart attack
- **Stroke:** Like a heart attack, if blood flow to part of your brain is blocked by a blood clot, a stroke occurs.

Tests and diagnosis

A blood test to check cholesterol levels — called a lipid panel or lipid profile — typically reports:

- Total cholesterol
- HDL cholesterol
- LDL cholesterol
- Triglycerides — a type of fat in the blood

For the most accurate measurements, don't eat or drink anything (other than water) for nine to 12 hours before the blood sample is taken.

Treatments and drugs

Lifestyle changes such as exercising and eating a healthy diet are the first line of defense against high cholesterol.

But, if you've made these important lifestyle changes and your total cholesterol — and particularly your LDL cholesterol — remains high, your doctor may recommend medication.

The specific choice of medication or combination of medications depends on various factors, including your individual risk factors, your age, your current health and possible side effects.

Lifestyle and home remedies

Lifestyle changes are essential to improve your cholesterol level. To bring your numbers down, lose excess weight, eat healthy foods and increase your physical activity. If you smoke, quit.

Lose extra pounds

Excess weight contributes to high cholesterol. Losing even 5 to 10 pounds can help lower total cholesterol levels. Start by

taking an honest look at your eating habits and daily routine. Consider your challenges to weight loss — and ways to overcome them. Set long-term, sustainable goals.

Eat heart-healthy foods

What you eat has a direct impact on your cholesterol level. In fact, a diet rich in fiber and other cholesterol-lowering foods may help lower cholesterol as much as statin medication for some people.

- **Choose healthier fats:** Saturated fat and trans-fat raise your total cholesterol and LDL cholesterol. Get no more than 10 percent of your daily calories from saturated fat. Monounsaturated fat — found in olive, peanut and canola oils — is a healthier option. Almonds and walnuts are other sources of healthy fat.
- **Eliminate trans fats:** Trans fats, which are often found in margarines and commercially baked cookies, crackers and snack cakes, are particularly bad for your cholesterol levels. Not only do trans fats increase your total LDL ("bad") cholesterol, but they also lower your HDL ("good") cholesterol.

You may have noticed more food labels now market their product as "trans-fat-free." But don't rely only on this label. If a food contains less than 0.5 grams of trans fat a serving, it can be marked trans-fat-free. It may not seem like much, but if you eat a lot of foods with a small amount of trans fat, it can add up quickly. Instead, read the ingredients list. If a food contains a partially hydrogenated oil, that's a trans-fat, and you should look for an alternative

- **Limit your dietary cholesterol:** Aim for no more than 300 milligrams (mg) of cholesterol a day- or less than 200 mg if you have heart disease. The most concentrated sources of cholesterol include organ meats, egg yolks and whole milk products. Use lean cuts of meat, egg substitutes and skim milk instead.
- **Select whole grains:** Various nutrients found in whole grains promote heart health. Choose whole-grain breads, whole-wheat pasta, whole-wheat flour and brown rice. Oatmeal and oat bran are other good choices.
- **Stock up on fruits and vegetables:** Fruits and vegetables are rich in dietary fiber, which can help lower cholesterol. Snack on seasonal fruits. Experiment with vegetable-based casseroles, soups and stir-fries.
- **Eat heart-healthy fish:** Some types of fish — such as cod, tuna and halibut — have less total fat, saturated fat and cholesterol than do meat and poultry. Salmon, mackerel and herring are rich in omega-3 fatty acids, which help promote heart health.
- **Drink alcohol only in moderation:** Moderate use of alcohol may increase your levels of HDL cholesterol- but the benefits aren't strong enough to recommend alcohol for anyone who doesn't drink already. If you

choose to drink, do so in moderation. This means no more than one drink a day for women and one to two drinks a day for men.

Exercise regularly

Regular exercise can help improve your cholesterol levels. With your doctor's OK, work up to 30 to 60 minutes of exercise a day. Take a brisk daily walk. Ride your bike. Swim laps. To maintain your motivation, keep it fun. Find an exercise buddy or join an exercise group. And, you don't need to get all 30 to 60 minutes in one exercise session.

If you can squeeze in three to six 10-minute intervals of exercise, you'll still get some cholesterol-lowering benefits.

Don't smoke

If you smoke, stop. Quitting can improve your HDL cholesterol level. And the benefits don't end there. Just 20 minutes after quitting, your blood pressure decreases. Within 24 hours, your risk of a heart attack decreases.

Within one year, your risk of heart disease is half that of a smoker's. Within 15 years, your risk of heart disease is like that of someone who's never smoked.

Alternative medicine

Few natural products have been proven to reduce cholesterol, but some might be helpful. With your doctor's OK, consider these cholesterol-lowering supplements and products:

- Artichoke
- Blond psyllium (found in seed husk and products)
- Barley
- Beta-sitosterol (found in oral supplements and some margarines, such as Promise Activ)
- Sitostanol (found in oral supplements and some margarines, such as Benecol) such as Metamucil)
- Garlic
- Oat bran (found in oatmeal and whole oats)

You may have also heard of another supplement to reduce cholesterol, red yeast. Some brands of red yeast contain lovastatin, the active ingredient in the drug Mevacor.

This can be unsafe, since there's no way to determine the quantity or quality of the lovastatin in the supplement.

If you choose to take cholesterol-lowering supplements, remember the importance of a healthy lifestyle. If your doctor prescribes medication to reduce your cholesterol, take as directed supplements you're taking as well.

Prevention

The same heart-healthy lifestyle changes that can lower your cholesterol can help prevent you from having high cholesterol in the first place. To help prevent high cholesterol, you can:

- Lose extra pounds and maintain a healthy weight
- Quit smoking
- Eat a low-fat, low-salt diet that includes many fruits, vegetables and whole grains
- Exercise on most days of the week for at least 30 minutes
- Drink alcohol in moderation, if at all

Source: *The Mayo Clinic*

Contact us

Please feel free to contact your Aon Healthcare Consultant if you have any concerns. You may also contact the **Aon Resolution Centre on 0860 835 272 or e-mail: arc@aon.co.za** for further information.

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