HEALTH BASICS

Lipoprotein-a

Lipoprotein(a) is an inherited blood particle that can affect cardiovascular risk.

WHAT IT IS
A mostly inherited blood particle carrying cholesterol and apolipoprotein(a)

WHERE IT COMES UP
Cholesterol testing and cardiovascular risk assessment

WHY IT MATTERS
Higher levels can increase artery and aortic valve risk

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
Primary care clinician, lipid specialist, or cardiologist

HOW IT IS CHECKED
A blood test reported in nmol/L or mg/dL

Overview

Lipoprotein(a), usually written Lp(a) and said "L-P little a," is a particle in your blood. It carries cholesterol and is similar to low-density lipoprotein, or LDL. It also has an extra protein called apolipoprotein(a).

Lp(a) is not a disease or a diagnosis. It is one part of cardiovascular risk assessment. Higher levels are linked to a greater chance of conditions caused by narrowed arteries and to calcium buildup in the aortic valve of the heart.

Your genes largely determine your Lp(a) level. Diet, exercise, and body weight usually have much less effect on it than they do on LDL cholesterol or triglycerides. This means a high result is not evidence that you have done something wrong.

Lp(a) is measured with a blood test. It is not always included in a standard cholesterol panel, so it may need to be ordered separately. Many professional groups recommend measuring it at least once in adulthood, although testing recommendations differ by country and clinical situation.

How it works

Lipoproteins transport fats through the bloodstream. LDL particles carry cholesterol from the liver to other parts of the body. Lp(a) has an LDL-like particle joined to apolipoprotein(a), often shortened to apo(a).

The amount of Lp(a) your liver produces is mainly controlled by the LPA gene. Levels often run in families and are usually fairly stable throughout adulthood. Illness, pregnancy, kidney disease, liver disease, and some hormonal changes can affect a result, but inherited factors remain the main influence.

Lp(a) may contribute to fatty deposits called plaque inside artery walls. These deposits can narrow an artery or break open and trigger a blood clot. Lp(a) may also promote inflammation and calcium buildup in the aortic valve, which controls blood flow from the heart into the main artery.

Laboratories report Lp(a) in one of two ways:

These units are not directly interchangeable because Lp(a) particles differ in size. A single conversion factor can therefore give a misleading answer. Use the unit and reference information printed on your own report.

- Nanomoles per litre, or nmol/L , estimates the number of Lp(a) particles
- Milligrams per decilitre, or mg/dL , measures their total mass

Why it matters for your health

Cardiovascular risk usually comes from several factors acting together. These include age, blood pressure, smoking, diabetes, LDL cholesterol, kidney disease, and family history. Lp(a) adds information to that overall picture.

A higher Lp(a) level is associated with a higher lifetime risk of atherosclerotic cardiovascular disease. Atherosclerosis means plaque buildup within arteries. The relationship is gradual: Lp(a) does not switch from harmless to dangerous at one exact number.

A result may be especially useful if you or a close relative developed cardiovascular disease at an unexpectedly young age. It may also help explain why risk appears higher than a standard cholesterol result suggests. Clinicians sometimes use it when making decisions about how strongly to lower LDL cholesterol or manage other risk factors.

Lp(a) levels differ among individuals and across ancestry groups. A result should not be interpreted from ancestry alone. Your personal value and your wider health history matter more.

A high level does not show that an artery is already blocked or that a heart problem will

definitely happen. It also does not replace blood pressure checks, diabetes screening, or a standard cholesterol panel.

What can go wrong

Higher Lp(a) levels are linked to several named conditions.

Coronary artery disease develops when plaque narrows the arteries supplying the heart. It can lead to angina or a heart attack.

Ischaemic stroke happens when a clot blocks blood flow to part of the brain. Lp(a) is most clearly related to strokes caused by atherosclerosis rather than every type of stroke.

Peripheral artery disease is reduced blood flow in arteries outside the heart, most often in the legs.

Calcific aortic valve stenosis is narrowing of the heart's aortic valve caused by calcium buildup and scarring. Lp(a) is associated with developing this condition, but an Lp(a) test cannot show whether the valve is narrowed. That requires assessment such as an echocardiogram, which is an ultrasound scan of the heart.

Lp(a) itself does not produce recognizable symptoms. Symptoms come from a related heart, artery, or valve condition, if one is present.

Seek emergency help for possible heart attack symptoms, such as persistent chest pressure, chest pain with sweating or breathlessness, or pain spreading to the arm, back, neck, or jaw. Sudden facial drooping, arm weakness, speech difficulty, loss of vision, or severe loss of balance may indicate a stroke and also need emergency help.

New breathlessness with activity, fainting, or exertional chest discomfort should receive prompt medical assessment. These symptoms have many possible causes and do not establish that Lp(a) is involved.

What you can do

If you have never had Lp(a) measured, ask whether a one-time test would add useful information to your cardiovascular assessment. Testing may be particularly relevant if you have:

The test usually does not require fasting, but follow the laboratory's instructions. Keep a copy of the result with its unit because nmol/L and mg/dL should not be casually converted.

If the result is high, ask how it changes your overall risk and treatment choices. Repeat testing

is often unnecessary because levels are largely inherited and stable. It may be reasonable when the original test was taken during a major illness or when a medical condition that can affect Lp(a) has changed.

Lifestyle changes may not lower Lp(a) much, but they can lower other parts of cardiovascular risk. Avoiding tobacco, staying physically active, managing blood pressure and diabetes, and addressing LDL cholesterol remain useful. Medication decisions should be based on your overall risk rather than the Lp(a) number alone.

Statins like atorvastatin or simvastatin do not directly lower Lp(a), and levels can rise slightly during statin treatment. This does not mean a prescribed statin should be stopped: statins lower LDL cholesterol and reduce cardiovascular events in people who are likely to benefit. Some other cholesterol treatments can reduce Lp(a) to a degree, but their use depends on the full clinical situation.

Do not start aspirin or supplements solely because of an Lp(a) result. Aspirin can cause bleeding, and treatment choices require a balance of possible benefits and harms.

Because Lp(a) runs in families, close biological relatives may wish to ask about testing if your level is high. Testing children is usually considered selectively, based on family history and specialist advice.

- A close relative with early heart attack, stroke, or other arterial disease
- Known cardiovascular disease that occurred earlier than expected
- Familial hypercholesterolaemia, an inherited cause of very high LDL cholesterol
- A family member with a high Lp(a) result
- Cardiovascular risk that remains unclear after routine assessment

Common questions

Is Lp(a) the same as LDL cholesterol?

No. Both particles carry cholesterol, but Lp(a) has the additional apo(a) protein. A person can have a healthy LDL result and still have a high Lp(a) level.

Some LDL cholesterol tests include cholesterol carried inside Lp(a). Even so, the standard LDL result cannot reveal how many Lp(a) particles are present.

Can food or exercise lower it?

Usually not by much. Lp(a) is mainly inherited. Healthy habits still matter because they improve other risk factors, including blood pressure, fitness, blood sugar, and triglycerides.

Does a high result mean I will have a heart attack?

No. It indicates higher risk, not a certain outcome. The meaning of the result depends on your age, blood pressure, cholesterol, smoking history, diabetes status, family history, and whether cardiovascular disease is already present.

Should the test be repeated every year?

Usually not. One reliable adult measurement may be enough because Lp(a) tends to remain stable. A clinician may suggest another test if the first result is uncertain or your medical circumstances have changed.

Is there a single "normal" cutoff?

Laboratories and guidelines use risk ranges rather than one universal boundary. Risk rises across the range, and different units cannot be converted precisely. Discuss the reported value in the context of your overall cardiovascular risk.

Sources

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