Hyperlipidaemia

When the concentration of triglycerides or cholesterol in your blood is too high, it is called hyperlipidaemia.

Lipid is another word for fat. Lipids are easily stored in the body and serve as a source of energy. Cholesterol and triglycerides are lipids. Having a lipid level that is too high increases your risk of heart attacks and strokes. A healthy diet and medicines can help lower your lipid levels.

What are the causes of hyperlipidaemia?

Hyperlipidaemia is often found when people are overweight or have an unhealthy diet. It can also be the result of drinking too much alcohol. It can be something that you may have inherited through your family genes (known as primary) and approximately 1 person in 500 will have this cause.

It may be because of another medical condition that you may have, such as diabetes, when it is known as secondary. Other causes include:

- An underactive thyroid (hypothyroidism).
- Obstructive jaundice.
- Cushing's syndrome.
- Anorexia nervosa.
- Nephrotic syndrome.
- Chronic kidney disease.

Some prescribed medicines can affect your cholesterol level, including:

- Thiazide diuretics (used to control blood pressure).
- Glucocorticoids (steroids).
- Ciclosporin (used after organ transplants).
- Antiretroviral therapy (used to treat HIV infection).
- Beta-blockers (used to control heart rate).
- The combined oral contraceptive pill.
- Atypical antipsychotics (used in some mental health problems).
- Retinoic acid derivatives (used in some skin conditions).

How common is hyperlipidaemia?

- Hyperlipidaemia is quite common and is known to be a risk factor for cardiovascular disease such as heart attacks and strokes.
- The UK population is known to have the highest average cholesterol levels in the world. Two out of every three people in the UK will have higher than recommended cholesterol levels.

How will I know if I have hyperlipidaemia?

- Hyperlipidaemia is often found during routine screening when your doctor is trying to assess your risk of having heart attacks or strokes. This may be as part of an annual health check if you are over 40 years of age, or if you have a close relative who had these problems at a young age.
- Usually, the diagnosis is made after a fasting blood test. Fasting means at least 12 hours when you have not eaten. You are allowed to drink water.
- There are also changes that may be visible on your body if you have the inherited form of hyperlipidaemia:
  - **Premature arcus senilis** - this is a white or grey ring that is visible when your doctor looks at the front of your eyes.
  - **Tendon xanthomata** - these are hard nodules that you may find in the tendons of the knuckles and the Achilles (at the back of your ankle).
  - **Xanthelasma** - fatty deposits in the eyelids.

Learn more about [familial hypercholesterolaemia](https://www.patient.info/hypercholesterolaemia).

What can I do to lower my lipid levels?
Hyperlipidaemia can be treated both by eating a healthy diet and by taking a medicine to reduce your cholesterol level. It is also very important to lower any other risk factors for cardiovascular diseases, such as having regular physical exercise and not smoking. See separate leaflet called Preventing Cardiovascular Diseases for more information.

**Diet**

Changing from an unhealthy diet to a healthy diet can reduce a cholesterol level. However, dietary changes alone rarely lower a cholesterol level enough to change a person’s risk of cardiovascular disease from a high-risk category to a lower-risk category. However, any extra reduction in cholesterol due to diet will help.

A healthy diet has other benefits too, apart from reducing the level of cholesterol. Briefly, a healthy diet means:

- **AT LEAST** five portions, or ideally 7-9 portions, of a variety of fruit and vegetables per day.
- **A THIRD OF MOST MEALS** should be starch-based foods (such as cereals, wholegrain bread, potatoes, rice, pasta), plus fruit and vegetables.
- **NOT MUCH** fatty food such as fatty meats, cheeses, full-cream milk, fried food, butter, etc. Use low-fat, mono-unsaturated or polyunsaturated spreads.
- **INCLUDE 2-3 portions of fish per week**, at least one of which should be oily (but, if you are pregnant, you should not have more than two portions of oily fish a week).
- **LIMIT SALT** to no more than 6 g a day (and less for children).
- If you eat red meat, it is best to **EAT LEAN RED MEAT**, or eat poultry such as chicken.
- If you do fry, choose a **VEGETABLE OIL** such as sunflower, rapeseed or olive.

Foods that contain plant sterols or stanols can reduce total blood cholesterol level and LDL cholesterol by about 10%. There does not seem to be much evidence, however, that this has an effect on preventing cardiovascular disease. The National Institute for Health and Care Excellence (NICE) therefore does not recommend that these products should be used routinely until more information is available.

See also separate leaflet called Healthy Eating.

**Medication**

If you are at high risk of developing a cardiovascular disease then medication is usually advised along with advice to tackle any lifestyle issues, including diet. There is no actual target level for people who do not already have cardiovascular disease. However, for those who do have a cardiovascular disease, the aim, if possible, is to reduce TChol to less than 4.0 mmol/L and LDL cholesterol to less than 2.0 mmol/L.

Medication can be used to lower your cholesterol or triglyceride level, usually with a statin medicine. There are several brands of statin medicines. They work by blocking a chemical (enzyme) which is needed to make cholesterol in the liver.

If it is only your triglyceride level that is high, you might be advised to take omega-3 fatty acids or fibrate tablets instead of a statin. If your triglyceride level is more than 10.0 mmol/L your GP might advise you to see a specialist.

Read more about statins and other lipid-lowering medicines for further details.

**Further reading & references**

- Lipid modification - cardiovascular risk assessment and the modification of blood lipids for the prevention of primary and secondary cardiovascular disease; NICE Clinical Guideline (July 2014)
- Report of the Joint British Societies for the Prevention of Cardiovascular Disease; JBS3, 2014
- 2016 ESC/EAS Guidelines for the Management of Dyslipidaemias; European Society of Cardiology (2016)
- 2016 European Guidelines on cardiovascular disease prevention in clinical practice; European Society of Cardiology (2016)
- Simon Broome Diagnostic criteria for index individuals and relatives - Appendix F; NICE (2008)
- Linton MF, Yancy PG, Davies SS, et al; The Role of Lipids and Lipoproteins in Atherosclerosis

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