

LDL Low-density lipoprotein • HDL High-density lipoprotein • Cholesterol Triglycerides • VLDL • Fats • Blood

cholesterol EXPLAINED

Too high, too low? Good and bad? It's not surprising so many of us are confused by cholesterol

• Animal fats • Good fats • Essential fatty acids • Diabetes • Obesity • High blood pressure • Sugars • LDL Low-density lipoprotein • HDL High-density lipoprotein • Cholesterol • Triglycerides • VLDL • Fats • Blood • Adipose fat • Bad • LDL cholesterol • Plant sterols • Heart disease • Saturated fat • VLDL • Fats

Cholesterol and food

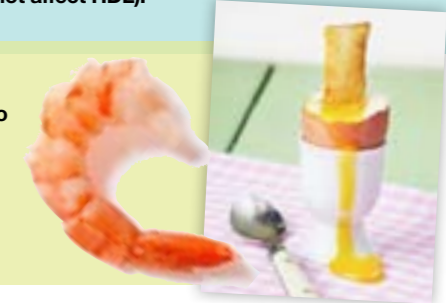


◆ **Animal produce** (meat, cheese) provides fat that the body uses to create cholesterol, but heart charities recommend limiting total fat to a maximum of 70g (or 85g for men) with no more than 20g saturated fat daily to avoid too much cholesterol getting into the blood. It's easy to eat more than this – for example you'll get 10g of saturated fat from any of the following: 4 tsp butter, 1½ matchbox-sized pieces of cheddar cheese, one Cornish pasty, or one choc ice.



◆ **Processed foods** are best avoided as far as possible. Anything containing “partially hydrogenated fats” (read the labels) should be given a very wide berth. According to the heart charities, these raise LDL and lower HDL (saturated fat from meat etc, naturally raises LDL, but does not affect HDL).

◆ **Eggs, shellfish and offal** are low in saturated fat but high in cholesterol. They do not affect blood cholesterol levels – however, because they contain dietary cholesterol. People with extremely high cholesterol (eg, Familial Hypercholesterolaemia) may still be told to avoid them.



From low-fat spreads to fortified yoghurt drinks, today's supermarkets are bursting with products that promise to lower your cholesterol. It's a multi-million pound industry, and chances are you've found yourself adding a couple of these items to your trolley, convinced that you're doing your health some good. After all, for years we've been told that having high cholesterol can increase the risk of heart disease and stroke.

In fact, this fatty substance found in our blood is naturally produced by our livers and is essential for our bodies to function properly; playing a key role in how every cell works and is also needed to make vitamin D, some hormones and bile for digestion. 'Cholesterol is vital to life,' says Zoe Harcombe, author of *The Obesity Epidemic* (Columbus, £20). 'Without it we would have no cells, no reproductive system, no hormones, no sex, no digestion and no mind.'

As well as the amounts of cholesterol

'Some experts are now concerned we have become too focused on cholesterol. But this is just one of seven risky factors in heart disease'

we make on our own, the liver also creates more of it from saturated fats in our food and the whole lot is carried around the body by two main types of lipoprotein – a bit like a drop-off and pick-up taxi service.

LDL (low-density lipoprotein) is the delivery taxi, taking the cholesterol to where it's needed by our cells. Although essential to our health, it's been labelled 'bad' cholesterol because a too-high level has been linked to an increased risk of heart and circulatory disease.

HDL (high-density lipoprotein) is the pick-up taxi, scooping up the excess and taking it back to the liver for recycling. It's called 'good' cholesterol because it is helping to prevent excess cholesterol

from being deposited in the arteries.

What we eat can affect our cholesterol levels – especially if we're consuming a lot of highly refined and sugary processed foods and alcohol, which trigger a cascade of triglycerides (also known as VLDL - very low density lipoproteins). 'These are the fats that enter the bloodstream after a meal,' says Linda Main, from the cholesterol charity Heart UK. 'They should normally be cleared by the blood two to three hours after eating – either burned as energy (ideally) or stored in fat cells. However “apple-shaped” people with a lot of tummy fat (adipose fat) seem to find it harder to clear them and storing this fat in the blood for longer tends to go hand in hand with lower levels of HDL, meaning the body is less able to recycle excess cholesterol.'

Cholesterol is measured in mmol/l (millimoles per litre) and the average Brit has a total cholesterol level of 5.5 mmol/l, with the majority of it being the so-called 'bad' LDL cholesterol, according to Linda Main. 'But while an average reading

may seem normal, at Heart UK we recommend a maximum of 5mmol/l total,' she says.

Spreads and drinks fortified with concentrated plant sterols (eg, Flora Proactiv and Benecol) block the absorption of cholesterol in the gut and lower LDL. One mini drink gives you the recommended daily amount of plant sterols, but a diet rich in pulses, nuts and seeds will provide the same benefits.

However, some health experts are now worried that we have become too focused on cholesterol and assume that if our levels are sufficiently low, then we are in a 'safe zone' for heart disease. As Ellen Mason, senior cardiac nurse for the British Heart Foundation (BHF), stresses, there are other factors to consider. 'What we need to remember is that high cholesterol is just one of seven risky factors in heart disease,' she says. 'But this is along with smoking, obesity, high blood pressure, diabetes, lack of exercise, and a family history of premature heart disease (father had a heart attack before 55, or mother had one before 65). It's impossible to grade all these risks in order, and the more boxes you tick, the higher your risk – but smoking is generally agreed to be the biggest heart risk.'

TWO in every **THREE** adults in the UK have high cholesterol

Cholesterol – your questions answered

Q I'm slim, fit and in my thirties. Can I still have a high cholesterol level?

A Possibly. The only way to know your cholesterol level is to get tested. There are lots of DIY tests available in chemists, but these don't give you a breakdown of your HDL and LDL levels. As these make more sense of your test result, it's better to go to your GP so you can see what the ratio is (ideally less than 3mmol/l LDL, and more than 1.2mmol/l HDL, according to Heart UK). Your triglycerides will also be measured and should be less than 1.7mmol/l, 12 hours after your last meal. Your GP should not refuse without good reason. Everyone over 40 is encouraged to have a heart check, which includes this test, every five years. The test involves having a sample of blood taken from you by using a needle and syringe, or by pricking your finger.

Q My mother has high cholesterol. Will I get it too?

A Not necessarily, unless she has the condition Familial Hypercholesterolemia (FH) where sufferers have extremely high cholesterol (up to 20mmol/l, compared to the average

5.5mmol/l) which can be genetically inherited, says Ellen Mason. 'But most raised cholesterol is not due to FH, but to a diet rich in saturated fat – and you could be at risk if your diet is similar to your mum's. The best thing you can do is get your blood tested, stick to a healthy diet that's low in saturated fat, and be physically active.'




Q If my cholesterol is high, what can I do to reduce it?

A Taking exercise will do you good – runners tend to have higher levels of HDL – but diet is also important. Cut out sugary processed foods and alcohol which are both linked to increased triglycerides, and eat more cholesterol-lowering foods. Heart UK's Portfolio Diet (clinically proven to lower cholesterol by 25 per cent) includes almonds (aim for 23 a day as snacks) along with one portion of porridge, one of lentils or

chickpeas, 25-50g soya (from soya beans, tofu, soya milk), and one plant sterol fortified yoghurt drink daily. If your cholesterol is very high, your GP may prescribe statins – drugs that slow down the body's production of cholesterol. These do have side effects, including muscle weakness and liver damage, so must be monitored carefully.



Know your fats

Type of fat	What are they?	What food contains them?	What are the dangers?
Trans fats	Artificial fats made through hydrogenation (adding hydrogen bonds to unsaturated fats)	All sorts of processed foods – look out for 'hydrogenated' or 'partially hydrogenated' fat on the label 	Trans fat raises LDL cholesterol and lowers HDL cholesterol
Saturated fats	Mostly animal fats that become quite solid at room temperature	Butter, cheese, lard and ghee, meat, and processed foods 	Eating a lot of saturated fat has been linked to higher LDL cholesterol, although it doesn't affect HDL levels
Unsaturated fats	Often known as the 'good type' of fat, they contain essential fatty acids that cannot be manufactured by the body	Oily fish, avocados, olives, nuts and seeds 	Cooking with these oils damages the fats so they're less beneficial



‘In Russia, it’s low cholesterol that’s linked to heart disease, and in some studies, low cholesterol is even linked to cancer’

Food for thought...

Although cholesterol is widely blamed for contributing to heart disease, a growing number of experts are saying that while there’s no doubt that smoking, diabetes, obesity, and high blood pressure will increase your risk of heart disease, efforts to treat cholesterol could actually be more harmful than cholesterol itself.

Zoë Harcombe is a member of The International Network of Cholesterol Sceptics (www.thincs.org) which believes too much emphasis has been put on cholesterol while other areas of research into the causes of heart disease have been neglected. Zoe stresses, ‘We all agree that cholesterol is vital to good health – but one of its many beneficial uses is to repair lesions in the arteries. Finding large amounts of it after a heart attack is therefore not that surprising – and is no more likely to have caused the heart attack than a firefighter who’s there to put out a fire. In Russia, it’s low cholesterol that’s linked to heart disease, and low cholesterol is also linked to cancer in some studies.’

Zoë recommends eating a diet that’s completely natural and includes fatty meat (as the body was designed to eat this), but suggests avoiding anything processed (including most sausages, pies, and refined carbohydrates, such as white bread and biscuits), which is more likely to contain harmful trans fats and sugar among the list of ingredients.

‘The glucose that’s produced by sugar is toxic and harmful to arterial walls,’ she says. Statins and cholesterol-lowering plant sterols can also damage the heart, Zoë warns, ‘Anything that stops the body doing something it is designed to do is bound to have serious repercussions. Muscle aches and pains are common side effects of statins, sometimes to the point of disability, and memory loss is also a serious problem reported by some patients.’

IN MY CASE



‘A heart attack made me change my lifestyle’

CHRIS LYNCH, 55, works in public relations and lives in London

‘Seventeen years ago my husband Terry died suddenly from a heart attack at the age of 40.

But, despite realising how fragile life can be, I didn’t fully take on board the health risks of my own lifestyle. Then, five years ago, following a massively stressful time at work and living on a diet of caffeine and cigarettes (about 40 a day), I, too, had a heart attack.

It came on over the weekend – but I thought the pain in my chest was heartburn, and the soreness in my arm was tennis elbow! I still felt ill the next day, but couldn’t manage

to get a doctor’s appointment -- so I went to work as usual. It was only when one of my colleagues said I looked “rather grey” and put my symptoms into an online symptom checker (which said to call 999) that the scary possible truth dawned on me. Only half believing it, I went by taxi to hospital and was seen within minutes. A blood test confirmed it was a heart attack. One of my arteries was blocked and I had two stents put in to open it up so the blood could flow through.

My cholesterol was high at 5.5mmol/l and my blood pressure was normal, but I am now on statins, blood pressure drugs and

a daily aspirin for life – to prevent any further problems. Smoking is the worst thing anyone can do for their heart and I gave up the same day I had the heart attack. I had been aware of the risks of course, but, like most people, I thought it would never happen to me. I now have a healthy diet and have managed to reduce my cholesterol to a very respectable 3.8mmol/l. I get off the bus early to fit 30 minutes of walking into my weekday commute, and work out at the gym for an hour and a half every Saturday and Sunday. I do feel like I’ve been given a second chance, and I’m very lucky to be alive.’