

Cholesterol

the good, the bad
and what you can do

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Evidence reviewed
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The aim is a healthier life, not a perfect blood test



Know your risk

Look at the whole person,
not just one number.



Choose realistic changes

Build habits that fit
your life.



Agree your treatment

Weigh up the likely benefit
and possible downsides.

Lifestyle and medicines work together. The plan should be yours.

Cholesterol is useful. Too much in the wrong place is not.

WHAT YOUR BODY NEEDS

Cells and hormones

Your liver makes cholesterol.
Your body needs some to work.

WHAT WE WANT TO AVOID

A build-up inside artery walls

Too much LDL in the blood
can feed this build-up.

Lowering LDL does not remove all the cholesterol your body needs.

The names on your blood test

LDL

**Often called
“bad cholesterol”**

The main type we try to lower.

HDL

**Often called
“good cholesterol”**

A high result does not cancel out high LDL.

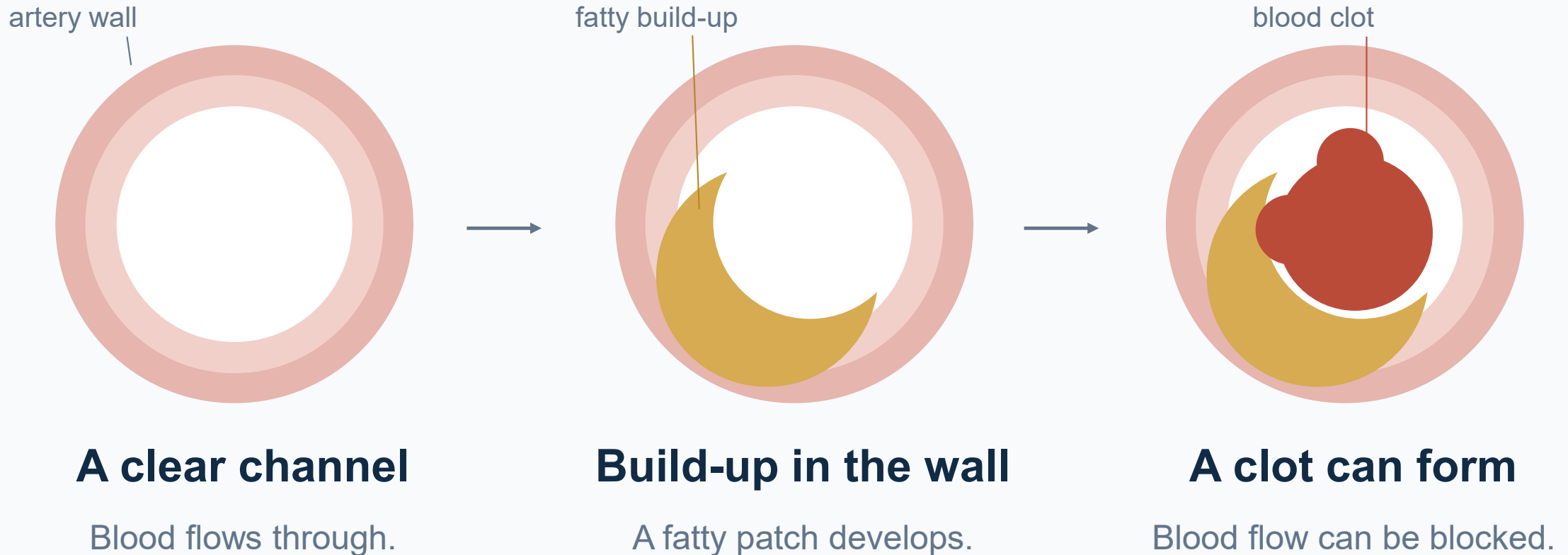
Triglycerides

**A different
fat in the blood**

Can rise with alcohol, diabetes or weight gain.

Non-HDL is a broader total of the types we want to lower, including LDL.

How a heart attack can start



A heart attack can happen before an artery is severely narrowed.

Why do two people get different advice?

1 Age

2 Family history

3 Smoking

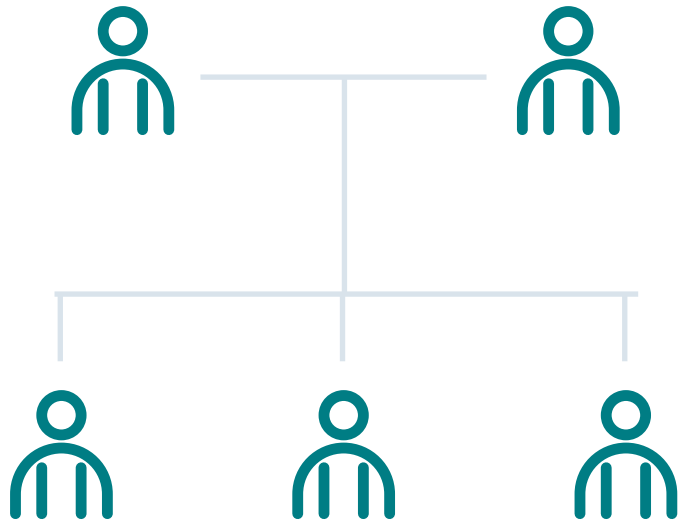
4 Blood pressure

5 Diabetes

6 Kidney or artery disease

Same cholesterol result. Different personal advice.

High cholesterol can run in families



Genes can affect how your body handles cholesterol.

01 Very high results

Especially from a young age.

02 Early heart problems in relatives

Mention the age and type of problem.

03 A reason to ask about testing

Relatives may also need testing.

High cholesterol is not a sign that someone has failed at healthy living.

The research measures health, not just blood tests



Fewer heart attacks

Lowering LDL can prevent serious heart problems.



Fewer strokes caused by clots

The aim is protection,
not just a lower number.



Fewer heart-artery procedures

Trials also count treatment
to open narrowed arteries.

Many different studies support LDL lowering. Not every product has this proof.

How much can lowering LDL help?

AN EXAMPLE BLOOD-TEST CHANGE

4 → **3**

LDL cholesterol, mmol/L

A fall of one unit

About one-fifth

**fewer serious heart
or stroke problems**

over several years of treatment

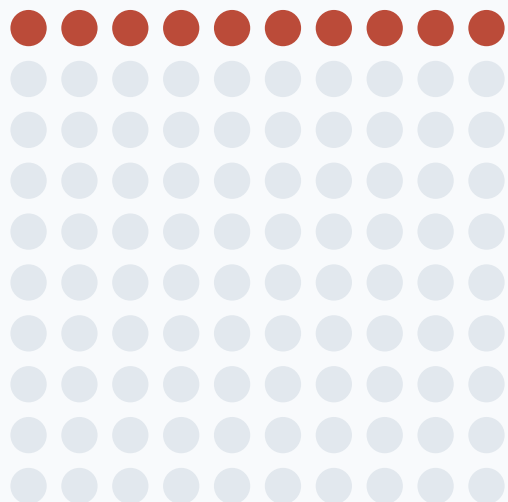
That does not mean 20 people in every 100 avoid a problem.

Out of 100 people, 2 avoid a serious problem

100 similar people / Over the next 5 years / An illustrative example

Without medicine

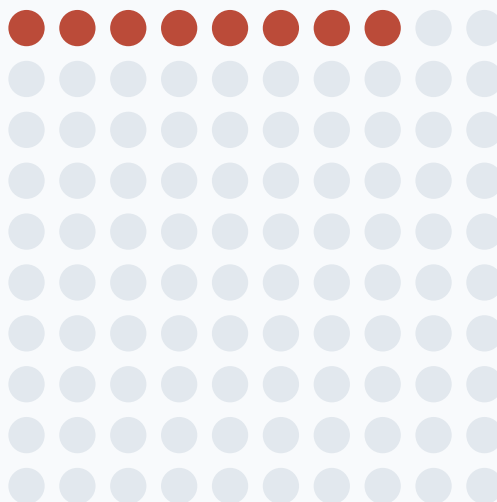
10 out of 100



● A serious problem

With medicine

8 out of 100



● No listed problem in this period

2

fewer people

have one of these
serious problems

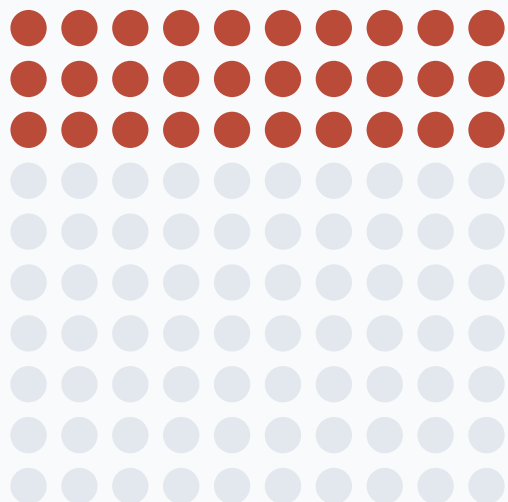
These problems include heart attacks, strokes caused by clots, heart-related deaths and procedures to open heart arteries. This example assumes a one-fifth reduction.

At higher risk, 6 avoid a serious problem

100 similar people / Over the next 5 years / An illustrative example

Without medicine

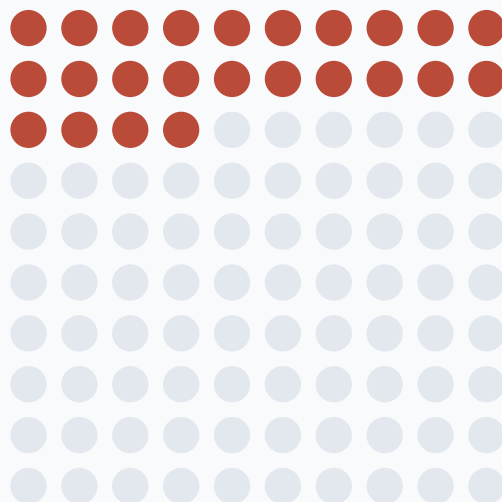
30 out of 100



● A serious problem

With medicine

24 out of 100



● No listed problem in this period

6

fewer people

have one of these
serious problems

These problems include heart attacks, strokes caused by clots, heart-related deaths and procedures to open heart arteries. This example assumes a one-fifth reduction.

Small changes, repeated, matter

You do not need a perfect diet
or an ambitious exercise programme.



Food you enjoy



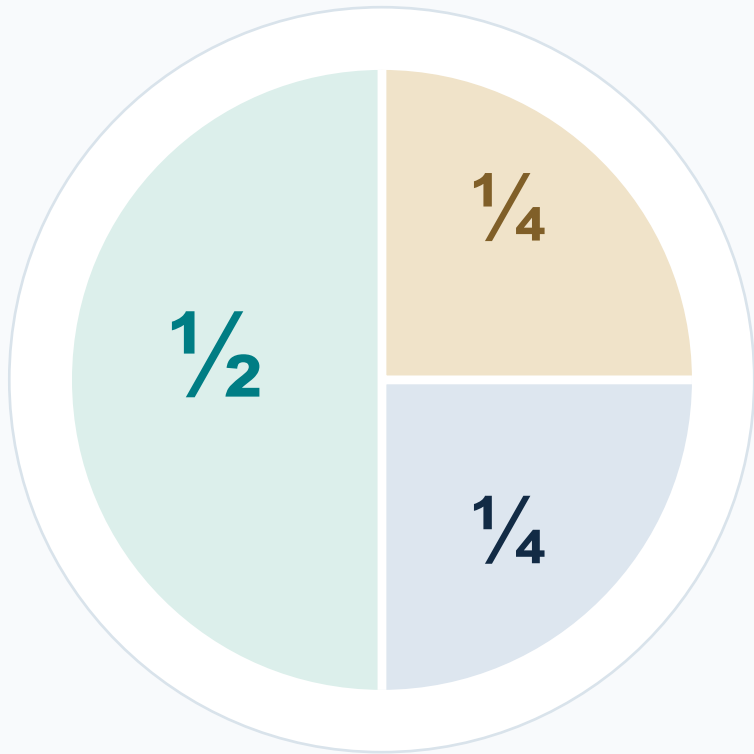
**Movement you
repeat**



**Other risks you
address**

Pick changes that are realistic enough to become normal.

Build meals around plants, fibre and useful protein



$\frac{1}{2}$

Vegetables and salad

Aim for plenty of colour and variety.

$\frac{1}{4}$

Wholegrain or starchy food

Oats, wholemeal bread, rice or potatoes.

$\frac{1}{4}$

Protein

Beans, lentils, fish, tofu or leaner meat.

A flexible meal guide, not a rule. Keep meals nourishing and enjoyable.

Change the type of fat, not just the amount

LESS OFTEN / SMALLER AMOUNTS

TRY INSTEAD

Butter or ghee



Olive oil

Cream and large cheese portions



Lower-fat options / smaller portions

Fatty meat and processed meat



Beans, lentils, fish or leaner meat

Daily pastries or biscuits



Fruit, plain yoghurt or unsalted nuts

Use these instead of your usual foods, not simply as extras.

Add fibre at more than one meal

BUILD TOWARDS ABOUT 30 g OF FIBRE A DAY



Breakfast

Porridge, oat bran or a wholegrain option.



Lunch

Add beans, lentils or chickpeas.



Dinner

Include vegetables and wholegrain foods.

Add fibre gradually. Adjust fluids to any advice you have been given.

In the supermarket: find the word “saturates”

Compare similar foods using the same amount: per 100 g.

EXAMPLE A	
Per 100 g	
Fat	9.0 g
Saturates	5.8 g
Salt	0.4 g

EXAMPLE B	
Per 100 g	
Fat	3.2 g
Saturates	1.2 g
Salt	0.4 g

**B is lower in
saturated fat**

Also check fibre,
salt and the portion
you actually eat.

A useful shopping habit: compare two versions of something you buy often.

An ordinary day can do the job

Breakfast

Porridge, berries
and plain yoghurt

Lunch

Lentil soup and
wholemeal bread

Dinner

Fish or beans, vegetables
and rice or potatoes

Between meals

Fruit, unsalted nuts
or hummus and veg

Frozen vegetables and tinned beans are useful, affordable shortcuts.

Start with ten minutes you can repeat

10

minutes to begin

A walk after a meal
is a good starting habit.

Build towards 150 minutes a week

Move briskly enough to talk, but not sing.

Add strength and balance on two days.

Break up long spells of sitting.

Start at your level and build gradually. Any activity is better than none.

Protect your heart in more than one way

Smoking

Ask for help to stop.
Support makes a difference.

Blood pressure

Know your readings
and your treatment plan.

Alcohol

Less is better. 14 units a week
is a ceiling, not a target.

Weight and muscle

Lose weight only if needed.
Protect strength and nutrition.

These steps can help even when the cholesterol number changes only a little.

A “natural” label is not a safety guarantee



Plant sterols and stanols

Can lower LDL. Proof of fewer heart attacks is lacking.



Fish-oil supplements

Not the same as a specific prescription treatment.



Red yeast rice

Can contain a statin-like drug.
Strength and quality vary.

Tell your pharmacist or doctor about supplements as well as medicines.

Make a four-week plan you can keep

Week 1

1

Choose two habits

One food change.
One activity habit.

Week 2

2

Make them easy

Shop for the swap.
Set a regular time.

Week 3

3

Build gradually

Keep what works.
Plan for bad days.

Week 4

4

Review, not judge

Keep good habits.
Adjust the rest.

After a medicine change, blood tests are usually repeated at 2–3 months.

When is a cholesterol tablet worth discussing?

BEFORE A FIRST HEART OR STROKE PROBLEM

Use your overall risk

A statin is usually offered when your estimated 10-year chance is 10 in 100 or more.

AFTER ARTERY DISEASE IS ALREADY KNOWN

Protection is a priority

After a heart attack, stroke caused by a clot, stent or bypass, treatment is usually strongly recommended.

The guideline starts the discussion. Your health and preferences shape the plan.

Statins provide ongoing protection



**Less cholesterol
made by the liver**

The main way
statins work.



**Less LDL
in the blood**

The blood test
shows the response.



**Better protection
for your arteries**

Fewer serious problems
over time.

A good cholesterol result often means the treatment is working, not finished.

The first tablet is not the only option

01 Adjust the statin

A different dose or a different statin may suit you better.

02 Add or use another tablet

Ezetimibe is a common option. Other tablets have specific roles.

03 Consider injections for selected people

Usually for higher-risk people who meet NHS criteria.

A treatment plan needs a review plan



Before starting

Check blood tests, other medicines and your goals.

After 2–3 months

Check the cholesterol response and liver blood tests.

Ongoing review

Discuss symptoms, habits and continued treatment.

Agree a review date and know whom to contact if there is a problem.

Side effects: real, but not inevitable



Most people

Take a statin without major problems.



Some people

Develop symptoms that need careful assessment.



Serious harm is rare

Severe muscle or liver injury is uncommon.

Take symptoms seriously. Often the treatment can be adjusted.

Muscle aches deserve a plan

**About 1
extra person
in 100**

has muscle pain or
weakness caused by
a statin in year one.
Usually mild.

01 Check other causes

Other medicines, illness and exercise can matter.

02 Agree a change

A supervised pause, lower dose or different tablet.

03 Follow it up

Find a plan that gives protection and suits you.



**Severe unexplained muscle pain, weakness or dark urine?
Stop the statin and seek urgent medical advice.**

Diabetes, liver tests and memory



Blood sugar

Can rise a little, especially when already near the diabetes threshold.



Liver blood tests

Small changes can happen.
They are not the same as liver failure.



Memory

Large blinded trials have not shown that statins cause common memory problems.

New symptoms still deserve assessment. The balance is personal.

Three questions behind the statin headlines

Do statins work?

Yes. Many trials show fewer serious heart and stroke problems.

Does everyone need one?

No. The likely benefit depends on the person.

Should symptoms be taken seriously?

Yes. Evidence and a careful review both matter.

A useful question is: “What does this evidence mean for me?”

Older age changes the conversation, not the need to talk



Fit and independent

Treatment can still offer worthwhile protection.



Frailty or many medicines

Other illnesses, interactions and treatment burden matter.



Your priorities

Ask about the likely gain, the time involved and what matters to you.

There is no single birthday when the answer changes for everyone.

Three questions for your next appointment

01 What is my chance without treatment?

Ask about a clear period, such as the next 5 or 10 years.

02 How much could treatment change that?

Ask for numbers out of 100 people, not just a percentage reduction.

03 What is the plan if I develop symptoms?

Agree the next step and a review date.

Bring your blood-test result and a list of medicines and supplements.

A quick check: true or false?

- 1 **A high “good cholesterol” level cancels out high LDL.**
- 2 **A problem with one statin means no treatment is possible.**
- 3 **Food and activity still matter when you take a statin.**

Think it through together. Which answer surprises you?

Three things to take away

01 Know your risk

Ask about your whole picture.

02 Choose two changes

Make them practical and repeatable.

03 Agree your plan

Include treatment, symptoms and review.

The goal is fewer serious problems and a life you want to live.

THANK YOU

Your questions

What is one thing you will
do or ask next?

Dr Os Alsanjari | Consultant Cardiologist

Cholesterol / Food and activity / Medicines / Side effects

Your blood test: put each number in context

An invented result for explanation only. Units: mmol/L.

Total cholesterol	6.0	The combined total
HDL	1.5	Often called “good cholesterol”
Non-HDL	4.5	Total minus HDL: 6.0 – 1.5
LDL	3.8	The main type we aim to lower
Triglycerides	1.5	A separate blood fat

A result can be acceptable for one person and above target for another.

Treatment goals: NICE and European guidance differ

NICE: preventing a first problem

More than a 40% fall in non-HDL

Usual starting statin: atorvastatin 20 mg.

NICE: known artery disease

LDL 2.0 or less OR non-HDL 2.6 or less

Usually atorvastatin 80 mg, unless unsuitable.

ESC/EAS: very-high-risk patients

LDL below 1.4 AND at least a 50% fall

A different framework; not a target for everyone.

Cholesterol units: mmol/L. Clinical targets and NHS funding criteria are different.

Other medicines: names you may hear

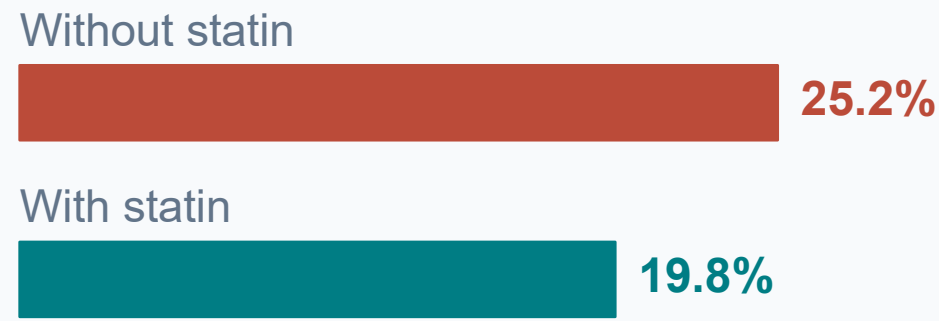
Medicine	How it is used	Important distinction
Ezetimibe	A daily tablet; often added to a statin.	Reduces cholesterol absorbed from the gut.
Bempedoic acid	A daily tablet; a specific role when statins cannot be used.	NHS use is restricted. Can increase gout risk.
Alirocumab / evolocumab	Regular injections for selected people.	Shown to prevent serious heart and stroke problems.
Inclisiran	An injection every 6 months after the initial doses.	Strong LDL lowering. Dedicated heart-protection results pending.

Selection depends on your risk, response, side effects and NHS eligibility.

Two statin studies: benefits in context

HEART PROTECTION STUDY

Higher-risk adults, about 5 years

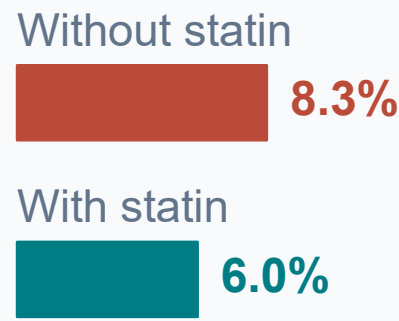


About 5 fewer people in every 100

First serious heart or stroke problem or an artery-opening procedure.

STAREE

Relatively healthy adults 70+, about 6 years



About 2 fewer people in every 100

Crude proportions, not adjusted estimates.
No clear improvement in disability-free survival.

Different people and follow-up periods: not head-to-head comparisons. Both charts use the same 0-30% scale.

Evidence for other tablets and injections

Adding treatment can offer further protection in selected people.

Ezetimibe IMPROVE-IT	34.7% → 32.7%	7-year estimates; after a recent heart problem
Evolocumab FOURIER	11.3% → 9.8%	Median 2.2 years; known artery disease
Bempedoic acid CLEAR Outcomes	13.3% → 11.7%	Median 3.4 years; people who could not tolerate usual statins.

Percentages are people with the study’s combined heart or stroke outcomes, not deaths alone.
The studies used different definitions and follow-up: do not rank the medicines by these numbers.

Food questions that often come up

Eggs

Look at the whole eating pattern, especially saturated fat.

Oats and barley

The specific cholesterol effect needs enough oat/barley fibre each day.

Coconut oil

Not a cholesterol-lowering health food. Olive oils are useful swaps.

Low-carbohydrate diets

Not automatically heart-friendly. A butter-heavy version can raise LDL.

The replacement matters: what are you eating instead?

Inherited cholesterol and Lp(a) are different

Inherited high LDL

Often called familial hypercholesterolaemia, or FH.

High LDL from early life.
Relatives may need testing.

Lipoprotein(a)

Usually written Lp(a).
Another inherited source of risk.

A separate blood test.
Not the same thing as high LDL.

Inherited risk is a reason to make a plan, not a reason to give up.

Further reading and evidence

NHS

Everyday advice on cholesterol and taking a statin

HEART UK

Food, blood tests and inherited cholesterol

NICE

How treatment decisions are made in England

CTT Collaboration

Large studies of statin benefits and side effects

Links are clickable. Full references and clinical detail are in the presenter notes.