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Dear [Patient]

Cholesterol is a fat or lipid carried around your body in the blood. Too much cholesterol can cause our arteries to become blocked and increase our risk of heart disease and stroke.

The Department of Health advises that adults should have a total cholesterol lower than 5mmol/L and LDL cholesterol lower than 3mmol/L. Your cholesterol has been found to be outside of the healthy range.

Your total cholesterol is xxxx

Your LDL cholesterol is xxxx

Your risk of heart disease or stroke in next 10 years is xxxx

As your risk is **more than 10%**, ie greater than a 1 in 10 chance, current guidance is to lower your cholesterol using tablets called statins.

Enclosed is information for you to look at to help you decide whether you would want to take a statin. This medication would be for lifelong treatment. If you wish to start this medication, please make a review appointment with our Practice Nurse or Practice Pharmacist.

To also improve your cholesterol level, you should make healthy changes to your diet, including cutting down saturated fats, and increasing your level of physical activity.

Further information can be found at <https://www.nhs.uk/conditions/statins/> or by booking an appointment with our Practice Nurse.

If you decide that you *do not wish to start a statin*, please arrange a further appointment with the Treatment room in **3 months** to repeat your cholesterol levels.

Yours sincerely

Dr Carroll & Partner

What is cholesterol?

Cholesterol is a fatty substance found in your blood. It is produced naturally in the liver. We need some cholesterol to stay healthy. It is used to make certain hormones and vitamin D, as well as bile acids, which help digest and absorb dietary fat.

Your blood carries cholesterol around your body on proteins called lipoproteins. There are two main types:

- High density lipoproteins (HDL cholesterol) take cholesterol you don't need back to the liver to be broken down and passed out of the body. It's often known as 'good' cholesterol as it removes cholesterol from the blood.
- Non-high-density lipoproteins (Non-HDL cholesterol) take cholesterol from the liver to the cells around the body. It's often known as 'bad' cholesterol because when there is too much, it can build up in your arteries. This can cause them to become narrowed or blocked and increase your risk of having a heart attack or stroke.

What causes high cholesterol?

Having high cholesterol is mainly caused by:

- eating foods high in saturated fat
- not being active enough
- smoking
- having too much body fat, especially around your middle

It can also run in families. Changing what you eat, being more active, and stopping smoking can help get your cholesterol back to a healthy level.

Lowering your cholesterol with diet

A few small changes to your diet can make a big difference to your cholesterol level.

1. Choose healthier fats

To help lower your cholesterol you don't need to avoid fats altogether. You should cut down on foods high in saturated fat and replace them with food high in unsaturated fat like vegetable oils (olive, rapeseed and sunflower oil), nuts, seeds, avocado and oily fish (see Table 1).

Table 1: main food sources of dietary fats

Saturated fat	Unsaturated fat	
	<i>Polyunsaturated fat</i>	<i>Monounsaturated fat</i>
Full-fat dairy products		
Fatty meat and meat products such as pasties, sausages and pies	Oily fish	Olive and rapeseed oil
Biscuits, cakes and pastries	Sunflower, soya, corn or safflower oils and spreads	Avocado
Butter, cream, ghee and lard	Flax, pumpkin and sesame seeds	Nuts such as almonds, cashews, and hazelnuts
Coconut and palm oils	Walnuts	

Swap saturated fats for unsaturated fats. Try these smart swaps to help cut back on saturated fat.

Table 2

Eat less	Smart swap
Creamy or cheesy sauces	Tomato or vegetable-based sauces

Fatty meat products such as sausages, burgers, pate, salami, meat pies and pasties

Lean cuts of meat and mince

Chicken and turkey with the skin removed

Fish especially oily fish such as mackerel, sardines, salmon

Vegetarian options like lentils, chickpeas, soya

Crisps and chocolate

Fresh or dried fruit or a handful of unsalted nuts and seeds

Full-fat milk, cheese, cream and yoghurt

Lower fat dairy foods such as 1% milk, reduced fat cheddar, low-fat yoghurt

Lard, dripping, ghee, butter and coconut oil

Vegetable oils - such as olive, sunflower, soya or rapeseed oil and their spreads

2. Look at food labels

Compare labels and choose foods with green or amber labels for 'saturates'. Foods are high (red) in saturated fat if they contain more than 5g of saturates per 100g. Foods containing 1.5g or less per 100g are low (green) in saturated fat. Some healthy foods that are high in fat like oily fish, nuts and oils, may be red for saturated fat. This is okay, as they contain more of the healthy unsaturated fat.

3. Eat more high fibre foods

Eating plenty of fibre helps lower your risk of heart disease and some high fibre foods can help lower your cholesterol. To make sure you get enough fibre:

- Aim for five portions of fruit and vegetables a day
- Switch to wholegrain varieties of bread, cereals, pasta and rice

- Choose other high fibre foods such as pulses (lentils, beans, chickpeas), oats, unsalted nuts and seeds

What about Plant stanols or sterols products?

If you have high cholesterol, using foods with added plant stanols and sterols has been shown to help to lower cholesterol levels. You need to eat 1.5-3g of plant stanols or sterols, in combination with a healthy diet, to see a reduction in cholesterol.

You can get this from fortified foods such as mini drinks, spreads, milk and yoghurts from both branded and supermarket own label products. If you decide to use these products, follow guidelines on the packet to get the right amount. However, they are not a substitute for healthy diet nor a replacement for cholesterol lowering medication. And if you don't have high cholesterol, these products are not recommended. Find out more in our Stanols and Sterols fact sheet.

Dietary cholesterol – don't get confused!

Some foods naturally contain dietary cholesterol, but don't make a big difference to the cholesterol in your blood. These are foods like eggs, some shellfish such as prawns and crab and offal such as liver, liver pate and kidney. They are low in saturated fat and so are fine to eat as part of a healthy diet. Only cut down on these foods if your doctor or a dietitian has advised you to. To lower cholesterol, it's more important to cut down on the amount of saturated fat you eat.

Summary

- Cholesterol is a fatty substance found in your blood. There are two main types: HDL- cholesterol or 'good' cholesterol and non- HDL cholesterol or 'bad' cholesterol.
- Too much non-HDL cholesterol can cause your arteries to become blocked. This increases your risk of having a heart attack or stroke.
- A healthy balanced diet, being physically active, stopping smoking and keeping a healthy weight and shape can all help to lower your cholesterol.
- Replace foods containing saturated fats with those that contain polyunsaturated and monounsaturated fats. You can do this by

choosing healthy fats such as olive or rapeseed oil, nuts, seeds, fish and avocado.

- Increase your fibre intake by choosing vegetables, fruits, wholegrains, pulses, nuts and seeds every day.

Statins

Information and advice for patients

What are statins?

Statins are a group of tablets which reduce the amount of cholesterol (a fatty substance) in the blood. If you have too much cholesterol in your blood it can build up on the walls of your arteries, causing them to become narrowed; this is called atherosclerosis. A high level of cholesterol in your blood also increases your risk of having a heart attack or stroke. The different statins are: simvastatin, pravastatin, atorvastatin, rosuvastatin and fluvastatin.

What is the benefit of taking statins?

The benefit of taking statins is that they reduce the amount of cholesterol in your blood because they block the action of the chemical which makes cholesterol. This helps to reduce atherosclerosis and reduces your risk of having a heart attack or stroke. Statins also reduce the risk of circulatory and heart problems in people who have atherosclerosis, even if their cholesterol is normal.

What are the risks of taking statins?

There is a risk you could experience some of the side-effects of statins. Possible side-effects include:

- headache
- pins and needles
- stomach pain
- bloating
- diarrhoea
- nausea (feeling sick) or vomiting
- a rash (this is rare)
- muscle pain, inflammation or weakness

If you experience any of these side-effects while taking statins please see your GP.

There is a risk you could develop severe muscle damage from taking statins, however this is very rare. If you experience any unexpected muscle pain or weakness it is important to see your GP as soon as possible.

There is also a risk that you could have an allergic reaction to statins, but this is rare.

What are the risks of not taking statins?

If you choose not to take statins your risk of having a heart attack or stroke will not be reduced.

Are there any alternatives to taking statins?

An alternative to taking statins is to take another medicine that lowers cholesterol such as ezetimibe or fibrates, however these are not suitable for everyone. Information and advice for patients.

Before taking statins

Before taking this medication please let your doctor or nurse know if you have any medical conditions or if you are pregnant or breastfeeding. You should also inform them of any other medications you are taking (particularly ciclosporin, danazol, gemfibrozil, amlodipine and diltiazem) as some types of statins may not be suitable for you.

Please make sure you read the manufacturer's information leaflet that comes with your statins before taking them.

How to take statins

Your hospital doctor, GP or nurse will tell you how much statin you need to take. Make sure you only use the dose you have been prescribed and that your medication is not past the expiry date.

Your body makes the most cholesterol during the night so it is best to take statins at bedtime. You do not need to take it with food.

You will need to have a blood test shortly after you start taking statins to check the amount of cholesterol in your blood and that your liver is working properly. The amount of statin that you are told to take may change after this test. Your GP will do this blood test again once or twice a year to monitor your cholesterol level and liver function.

You can get a prescription for statins from your GP. You will need to take statins for life, as long as you do not experience any side-effects from taking them.

What happens if I miss a dose?

If you forget to take a dose, take it as soon as you remember. If you do not remember until the following day, skip the missed dose. Do not take two doses together to make up for a forgotten dose.

Precautions

Please tell any doctors or nurses treating you that you are taking statins.

If you are taking simvastatin you should avoid drinking grapefruit juice as this increases the level of the medicine in your blood, which can lead to you experiencing side-effects.

Storing statins

- Store your statins in their original packaging.
- Store them in a dry place, at room temperature and out of direct sunlight.

- Keep statins out of the sight and reach of children.

Symptoms to report

Please see your GP if you experience any unexpected muscle pains, cramps, tenderness or weakness while you are taking statins.

Is there anything else I can do to reduce my risk of having a heart attack or stroke?

Although taking statins will help reduce your risk of having a heart attack and stroke, there are also things that you can do to reduce your risk further:

- If you are overweight or obese lose weight; even a moderate amount of weight-loss will help.
- Eat a healthy balanced diet.
- Take regular exercise.
- If you are a smoker, stop smoking.
- If you have high blood pressure make sure this is treated.
- If you are diabetic make sure your blood sugar is well controlled.

Further information

If you need more information, experience any side effects or have any concerns about taking statins please speak to your local Pharmacist, Practice Nurse, Practice Pharmacist or GP.