Date:

Dear Patient,

You recently had some blood tests which included a cholesterol check. Your cholesterol has come back to us raised. This indicates that there is a high level of fat in your bloodstream and this can put you at an increased risk of heart attacks and strokes.

Please find a leaflet enclosed that explains this in more detail and outlines some of the diet and lifestyle changes that you can make at home to try and lower your cholesterol. We would then check your blood tests after 3 months of changes so please find enclosed a blood form for this time.

Another option to consider is starting a cholesterol lowering medication called a statin, which is also mentioned in the leaflet. If this is something you would like to pursue, please contact the surgery to arrange an appointment with one of our nursing team,

Kind regards,

**Riverside Surgery**

**Understanding Cholesterol**

**What is Cholesterol?**

Cholesterol is a fatty substance, vital for good health. It helps form cell membranes, various hormones, bile and vitamin D. We get some cholesterol from our diet but most is made in our liver.

 Understanding cholesterol

 Cholesterol and other blood fats are carried in the blood by proteins. When these proteins and fats combine they are called lipoproteins. There are two main lipoproteins:

1. **Low density lipoprotein (LDL)** – LDL takes cholesterol to the cells. But if there is too much, more than the cells need, it can start to build up in the walls of our arteries, causing them to narrow. Over time these fatty deposits (plaques) can start to restrict blood flow to the heart muscle, brain, arms, legs and vital organs. For this reason LDL is often called “bad cholesterol”.
2. High density lipoprotein (HDL) – carries excess cholesterol away from the cells, back to the liver where it can be broken down and removed from the body. For this reason HDL is often referred to as “good cholesterol”.

What causes high cholesterol?

Anyone can have high cholesterol, even if they are slim, eat well and are physically active. Most people won’t notice any tell-tale signs of high cholesterol. Cholesterol levels are affected by your family history, age, your lifestyle, some medicines and medical conditions. You are more likely to have unhealthy levels of cholesterol if:

* Close family have high cholesterol
* Your diet is high in saturated fat
* You are not physically active • You drink too much, or you smoke
* You carry too much weight around your middle
* An inherited condition – familial Hypercholesterolaemia (FH for short) – can cause very high cholesterol, even if you have a healthy diet and lifestyle.
* An underactive thyroid gland can also raise cholesterol but if treated your cholesterol should return to your normal levels. If this is the first time you have been found to have high cholesterol, your GP should check to make sure your thyroid gland is working normally and for any other medical reasons why your cholesterol might be high.

**Why should I lower my cholesterol?**

Having too much cholesterol in your blood can increase your risk of:

* **Narrowing of the arteries** – this is when arteries become furred up and harden. As a result less blood can flow through them. The medical name for this is atherosclerosis
* **Angina** – a dull, heavy or tight pain in the chest which can spread to the left arm, neck, jaw or back. It is caused by a restriction in blood flow to the heart muscle and often brought on by exercise
* **A heart attack** – a serious medical emergency. Blood supply to the heart muscle is completely blocked, often caused by a blood clot Coronary heart disease – the main arteries supplying the heart muscle become clogged with cholesterol rich plaques
* **A stroke** – a serious medical emergency. Blood supply to the brain is completely blocked
* **A TIA or mini stroke** – a temporary interruption in blood flow to the brain
* **Peripheral artery/vascular disease (PAD or PVD**) – occurs when blood flow to the legs (and/ or arms) is restricted. These are often referred to as circulatory or cardiovascular diseases (CVD).

Your risk of these conditions also increases as you get older and if you have other risk factors:

* Type 2 diabetes
* High blood pressure
* You smoke
* You have too much fat around your middle
* You are of South Asian origin

Why am I being advised to lower my cholesterol?

Your health care professional may have advised you to lower your cholesterol because:

* It is above the normal level expected for a person of your age and gender
* Your risk of heart and other circulatory diseases over the next 10 years is moderate or high
* You have too much “bad” cholesterol and too little “good” cholesterol
* Your risk of a heart attack or stroke at an early (young) age is too high.

**Low HDL Cholesterol & high triglycerides**

Some people have very low levels of HDL (good) cholesterol in their blood. This is often combined with high levels of triglycerides.

**Triglycerides**

 Triglycerides are a type of dietary fat. After a meal triglyceride, from foods, enter the blood. Most triglyceride is removed from the blood within a few hours of eating and is used for energy or stored for later.

 If your triglyceride levels are high it means your body could be struggling to remove fat from your blood after a meal.

 Our diet is not the only source of triglycerides, our liver can make them too. Having low HDL cholesterol and high triglycerides can be inherited, but for most people this pattern of blood fats is related to their body shape and size.

**An unhealthy waistline**

Having too little HDL cholesterol and too much triglyceride in the blood is a sign that you have too much fat around your waistline. An unhealthy waistline can also increase your risk of developing type 2 diabetes, liver and heart disease.

This is because some fat becomes trapped in your liver and pancreas. This fat can prevent these organs from working properly.

The table below provides a guide to healthy waist measurements. Measure your waist around the widest point, on or near your tummy button.

|  |  |  |
| --- | --- | --- |
|  | Increased health risk | Serious health risk |
| Women | 80 cm (32 inches) or above | above 88 cm (35 inches) or above |
| Men | 94 cm (37 inches) | 102 cm (40 inches) or above |
| Asian men | 90 cm (36 inches) or above | 101 cm (39 inches) or above |

**When might I need medication?**

 As well as eating healthily and having a healthy lifestyle, your doctor may advise you to take a medicine called a statin, especially if you are diabetic, have FH (see later) or are at increased risk of heart disease. Statins are generally safe and well tolerated.

**How to improve your cholesterol and triglyceride level**

**Here are some things you could do:**

• Enjoy a varied diet with plenty of fruit and vegetables and low fat dairy foods

• Swap foods high in saturated fats for those with more heart healthy fats

• Replace white bread, pasta, rice, flour, breakfast cereals etc. with their wholemeal or wholegrain equivalents

• Include heart healthy foods such as oats, beans and peas

• Have more meat free meals

• If your cholesterol remains high consider using plant sterol/stanol fortified foods such as spreads, yogurts and mini-drinks. These can be used to lower cholesterol as part of a healthy diet but are not suitable for children (unless advised by your doctor or dietitian) or during pregnancy or breastfeeding

**What else can I do to reduce my risk?**

• Take regular physical activity – at least 150 minutes of moderate activity each week. Brisk walking is ideal

• If you smoke, give up!

• Have your blood pressure checked regularly

• If you have diabetes, keep it under good control

• Make your GP aware of any family history of early heart disease

• If stress is a problem, take time to relax

• If you are prescribed a medicine, take it

• Keep alcohol to sensible limits

• Aim for a healthier weight and shape if you are overweight

• Decrease portion sizes, use low fat spreads and limit snacking

• Cut down on sugar, sugary foods and drinks

**Your cholesterol test**

Your doctor can arrange to measure the amount of cholesterol in your blood. This will involve taking a sample of blood from your arm and sending it to a laboratory You should eat and drink normally before the test unless your doctor asks you not to. As a minimum you should be given these results:

* Total (serum) cholesterol (TC)
* HDL cholesterol

**These results can be used to calculate your:**

* LDL cholesterol
* Non-HDL cholesterol
* Total cholesterol to HDL (TC:HDL) ratio Your blood may also be tested for triglycerides.

 What should my levels be?

In the UK cholesterol and triglycerides are measured in millimoles per litre (mmol/L).

**Cholesterol levels**

 Healthy adults should aim for a:

* Total cholesterol below 5mmol/L
* Non-HDL cholesterol below 4mmol/L
* HDL cholesterol above 1mmol/L (man) or above 1.2mmol/L in a woman

Triglyceride levels – healthy adults should aim for a:

* Fasting triglyceride below 1.7mmol/L
* Non-fasting triglyceride below 2.3mmmol/L

What about those at higher risk?

****If you have existing heart disease, or are at higher risk of developing heart disease, your doctor may advise you to reduce your cholesterol and triglyceride levels further. It is best to discuss this with your doctor when they review your treatment. Any target levels your doctor suggests will depend on the cause of your high cholesterol and triglycerides, your age and any other risk factors you have. You may be referred to a lipid clinic to see a doctor who is an expert in treating people with raised blood fats.

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Eat a varied healthy diet

Take time to relax

Talk to your GP

Maintain a healthy weight

Regular BP checks

Be active more often

