

Patient Information Guide to Cholesterol “Get the Facts”



CR  **I**

Fighting Heart Disease & Stroke



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Croí works to improve the quality of life for all through the prevention and control of heart disease, stroke, diabetes and obesity.

Our specialist health team equip people with lifesaving skills; provide rapid access cardiac diagnostics; and develop and deliver innovative cardiovascular health care in the areas of prevention and rehabilitation, helping thousands of people throughout the region make measurable improvements to their cardiovascular health and wellbeing.

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The most effective way to control your cholesterol is to be informed about it. This booklet aims to help you understand more about cholesterol, which is one of the major risk factors for heart disease.

Cholesterol and Heart Disease

Did you know?

Coronary Heart Disease remains the single largest cause of death in Ireland. However, by making lifestyle changes you can prevent heart disease or delay its onset.

These lifestyle changes include taking regular exercise, healthy eating and not smoking.

Know your risk

A high level of cholesterol increases your risk (or chance) of having a heart attack or stroke. High cholesterol is one of the major risk factors for heart disease.

Unlike other risk factors such as family history, age and gender, cholesterol can be controlled and kept at a healthy level. Knowing what your cholesterol levels (lipid levels) are, is an important first step in reducing your risk of heart disease or stroke.

Other major risk factors for heart disease are high blood pressure, smoking, physical inactivity, being overweight, excessive alcohol consumption and stress. The more risk factors you have, the greater your overall risk of developing heart disease.

What is Cholesterol?

Cholesterol is a fatty substance, which is essential to the normal functioning of your body. A certain amount of cholesterol is healthy as it forms part of the cell walls and is necessary to make hormones.



Atheroma in artery

However, if there is too much cholesterol in the blood, the body is unable to get rid of it and cholesterol is deposited along the walls of arteries, forming atheroma (fatty material). Over time, a

gradual build-up of atheroma can narrow the arteries that supply the heart with blood. This process is called atherosclerosis and may eventually cause symptoms of angina or result in a heart attack or stroke.

Understanding Cholesterol

Lipid Profile

You may have heard of the term 'lipid profile'. A lipid profile is a detailed measurement of the fats in your blood. Your lipid profile gives you a breakdown of your total cholesterol, HDL cholesterol, LDL cholesterol and triglycerides.

Total Cholesterol (TC) is made up of 'good' and 'bad' cholesterol.

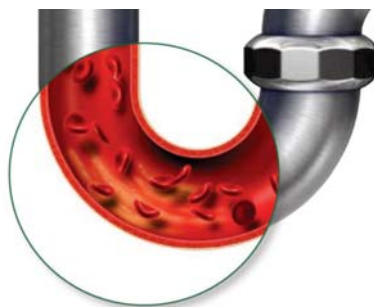
Triglycerides (TRG) are other fats that circulate in the bloodstream with cholesterol. A high level of triglycerides increases your risk for heart disease.

Understanding Good (HDL) and Bad (LDL) Cholesterol

Imagine this pipe as your artery. Inside are two types of cholesterol: bad cholesterol (LDL) and good cholesterol (HDL). Too much 'bad' cholesterol and not enough 'good' cholesterol can put you at risk of developing heart disease or stroke.

REMEMBER

It is not enough to have a low LDL cholesterol, you also need to have a high HDL cholesterol for a healthy heart.



A healthy artery with red blood cells flowing freely

Why bad Cholesterol is bad

- Too much 'bad' cholesterol (LDL) in the blood contributes to the build-up of fat deposits in your arteries (atherosclerosis). This build-up of fat can slow down the flow of blood to the heart or brain - like a partial blockage in a pipe.
- Over time, this build-up of fat can harden and narrow your arteries which can put you at risk of having a heart attack or stroke.
- The lower your 'bad' cholesterol, the lower your risk of having a heart attack or stroke.

Why good Cholesterol is good

- 'Good' cholesterol (HDL) helps remove 'bad' cholesterol from your arteries and carries it to the liver where it is eliminated from the body.
- The higher your HDL the better, as HDL protects against heart disease.



For further information visit
www.croi.ie

What are the recommended targets for Cholesterol?

It is very important that you know the recommended target levels for your cholesterol.

Total Cholesterol	< 5mmol/L
LDL (bad) Cholesterol	< 3mmol/L
HDL (good) Cholesterol	> 1mmol/L (males) > 1.2mmol/L (females)
Triglycerides	< 1.7mmol/L

Specific target levels

If you have a history of heart disease or stroke or have diabetes your recommended target levels are lower.

Total Cholesterol	< 4mmol/L
LDL (bad) Cholesterol	1.8 - 2.5 mmol/L



What causes high Cholesterol?

High cholesterol may be caused by the foods you eat in your diet, it can be genetic or related to other diseases.

Raised cholesterol levels can run in families. If inherited cholesterol levels are very high, this is called **Familial Hypercholesterolemia**.

High cholesterol is also connected with diseases such as chronic renal failure, underactive thyroid, alcohol abuse and diabetes.

Following the principles of healthy eating can help to improve cholesterol levels.

Diet

The liver makes most of the cholesterol needed by the body but cholesterol is also absorbed from many foods we eat.

Eating foods high in dietary cholesterol such as eggs, shellfish and offal has very little effect on your body's cholesterol. The foods that are of greater concern are those high in saturated fat and trans fat. These fats can raise your levels of LDL (bad) cholesterol and thus increase your risk of heart

disease and stroke. Whereas, unsaturated fats can help to improve cholesterol levels and reduce your risk of heart disease and stroke.

Bad Fats

Saturated Fats

Foods high in saturated fat should be consumed in small amounts. Reducing your intake of saturated fat is an effective way of lowering your LDL (bad) cholesterol.

Sources of Saturated Fat:

- Butter, lard, palm oil and coconut oil.
- Dairy products such as full-fat milk, cream, full-fat yoghurt and cheese.
- Red meat and fatty cuts of meat such as beef, lamb, pork and bacon.
- Processed meat such as corned beef, sausages, rashers, chorizo.
- Biscuits, cakes, chocolate, pastry products and pies.

Trans Fats

Foods high in trans fats raise cholesterol and therefore, should only be consumed in small amounts. Trans fats are listed as "hydrogenated" or "partially hydrogenated" oils on food labels.

Sources of Trans-Fats:

- Stick margarine and shortening.
- Bakery goods – pastries, pie crusts, cakes, biscuits, doughnuts, pizza dough, crackers and cookies.
- Convenience foods – takeaways and ready-made meals.

Good Fats

Unsaturated Fats

For a healthier heart aim to replace saturated fats and trans fats with unsaturated fats!

Monounsaturated and polyunsaturated fats when used instead of saturated fat help to lower LDL (bad) cholesterol levels.

For a healthy heart it is recommended to choose unsaturated fats – rapeseed oil is best for cooking with and olive



oil is best for salad dressings. A reduced fat olive based spread is the better spread to choose.

Omega-3 Fatty Acids

Omega-3 fats are a type of polyunsaturated fats found in fish oil and oily fish such as salmon, mackerel, trout, herring, fresh tuna and sardines. Vegetarian sources of omega-3 fats include dark green leafy vegetables, rapeseed oil, flaxseed/linseed and walnuts. Omega-3 fats can lower elevated triglyceride levels and help to prevent blood clotting.

Who should have their Cholesterol measured?

Like high blood pressure, a high cholesterol level does not generally cause any symptoms. Many people are unaware that their cholesterol levels may be high. Therefore, if you have never had your cholesterol checked, it would be advisable to attend your doctor for a check-up. At this visit, your doctor can assess all other risk factors for heart disease such as your blood pressure, weight, glucose levels (for diabetes), as well as discussing other lifestyle risk factors.

- People with heart disease or a history of heart attack, angina, bypass surgery, angioplasty or stroke, should have their cholesterol measured every six months.
- If you have a family history of raised cholesterol levels/heart disease or stroke, you should have your cholesterol routinely checked.

CAUTION

- If you have recently suffered a heart attack, the cholesterol measurement may give a false low reading. It is advisable to have your cholesterol checked three months after having a heart attack.
- Recent surgery or any other major illness may also affect your cholesterol levels.
- Pregnancy and recent childbirth can increase your cholesterol levels. It is advisable to wait three months after childbirth before you have your cholesterol tested.

How is Cholesterol measured?

You cannot tell how high your cholesterol is without a blood test. This can be carried out by your doctor. The blood test can be done in two ways:

- 1 A blood sample is taken with a needle and syringe and sent to a laboratory for analysis. It may take up to a week to receive your results.
- 2 A capillary sample (a finger pinch) is taken and analysed on a desktop analyser. Results can be obtained within five minutes.

Do I need to fast?

While fasting is not required for an initial cholesterol test, a 12 to 14 hour fast may be required for people with raised cholesterol levels, or for people on certain types of medication for their cholesterol. Total cholesterol and HDL are only slightly affected by what you have eaten, while triglyceride levels are significantly affected.

Simple steps to help you reduce your Cholesterol

Keep a record of your results. This is an important first step in reducing your high cholesterol. Please contact Croi for your personal 'Safe Heart Card', which will allow you keep track of your cholesterol.

Weight loss

Being overweight can increase your cholesterol levels and your overall risk of heart disease and stroke. Making small changes to your diet will help aid a slow gradual weight loss of 1-2lb per week. Losing 10% of your body weight has significant health benefits and allows for a 10% reduction in total cholesterol.

Eat 3 regular meals. Start the day with a healthy breakfast. Eating 3 meals per day gives your body the energy it needs and it prevents hunger.

Control your portion size. Watch your dinner plate size. Use a standard 9 inch plate.

Eat when hungry. Avoid eating to relax, or because you are bored or depressed. Take a walk or do something you enjoy instead.

Keep a food diary. Write down what you eat or drink, this will identify any trends and help motivate.

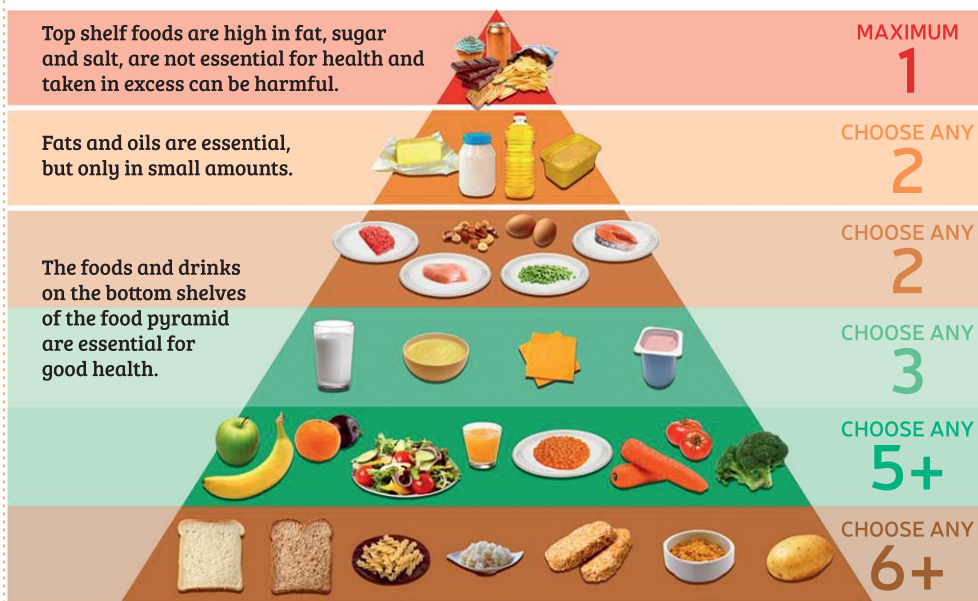
Drink plenty of water. People who drink plenty of water are more likely to lose weight. Aim for a minimum of 6-8 glasses of water each day.

Exercise. Regular exercise is essential for weight loss and weight maintenance.

Practical tips to help lower Cholesterol levels

- Use the food pyramid as a guide to follow a healthy balanced diet.
- Bake, boil, steam, microwave or grill foods instead of frying.
- Choose wholegrain bread, pasta, cereal and rice - a diet rich in fibre can help lower cholesterol.
- Include a variety of fruit and vegetables in your diet – aim for 5 portions a day.
- Include foods that contain healthy fats such as olives, avocados, a handful of unsalted nuts or seeds in your diet.

The Food Pyramid



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- Swap full fat dairy foods for low-fat varieties.
- Limit cheese to 2 matchbox's a week and choose a reduced fat option.
- Choose lean cuts of meats and trim off any visible fat.
- Go for fish at least 2 times a week and one of which should be oily.
- Choose low fat unsaturated spreads and use sparingly.
- Choose unsaturated oils – rapeseed oil is best for cooking with and olive oil can be used as a dressing on salads.
- Decrease intake of cakes, biscuits, sweets, crisps and high fat foods.

Drink alcohol in moderation

Excessive alcohol consumption can increase your triglyceride levels.

Safe limits



Men

17 standard drinks spread out over a week



Women

11 standard drinks spread out over a week

1 standard drink is...



½ pint
of beer



a small
glass of wine
(100ml)



1 pub
measure of
spirits

Exercise regularly

Aim for a minimum of 150 minutes of moderate intensity aerobic activity per week. One way of achieving this is a 30 minute brisk walk 5 days per week. Physical activity increases your good cholesterol (HDL) and can reduce your triglycerides.



If you smoke, stop!

Smoking lowers your levels of good cholesterol (HDL).

Try and manage your stress

It is not easy, but put some time aside each day to relax. Studies have shown that in the long term, stress can raise blood cholesterol levels.

What about Plant Sterols & Stanols?

Plant sterols & stanols work by reducing cholesterol absorption from the gut and have been shown to reduce total and LDL cholesterol levels. Yoghurt drinks, yoghurts, milk and spreads are sometimes fortified with plant sterols & stanol esters. To achieve the beneficial effect and lower cholesterol levels it is necessary to consume the correct amount of these fortified foods **daily**. When you stop taking the fortified product you will no longer receive the benefit.

Sources of food fortified with plant sterols & stanol esters:

The recommended amount of plant sterols can be achieved daily through having:

- **One** fortified yoghurt drink
OR
- **2 - 3** servings of fortified spreads, milk or yoghurt
 - ✓ 250mls of fortified milk
 - ✓ One 125g fortified yoghurt
 - ✓ 2 level teaspoons of fortified spread

These products are expensive and it is worthwhile consulting with your dietitian or doctor to determine if these products will benefit you.

What about medications?

Many people can reach the target cholesterol levels by adopting the lifestyle changes outlined in this booklet. Some, however, will also need to take medication.

In addition, people who have had a heart attack, stroke, bypass surgery or angioplasty will also need to take medication to keep their cholesterol at a healthy level.

For cholesterol lowering medications to be most effective, you must continue to make dietary and lifestyle modifications.

REMEMBER

Do not stop taking any medications without seeking the advice of your doctor.



For more information on healthy eating please see our booklet *"The Balanced Guide to Healthy Eating"*.

Notes



Fighting Heart Disease & Stroke

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I wish to make a one-time donation: (please tick) €25 €50 €100 €250 Other €

I wish to make a regular monthly gift by direct debit: (please tick) €5 €50 €10 €21 Other €

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Signature: Date:

All donations of €250 or more in a year (€21 per month) are eligible for tax relief at 31%, increasing the value of your gift at no additional cost to you.



Fighting Heart Disease & Stroke

Croi is a not-for-profit charity dedicated to fighting heart disease and stroke in the region. We are an independent organisation, totally funded through our own fundraising activities and voluntary contributions. We are at the heart of communities working with people to make sustainable and life-changing improvements to their cardiovascular health and wellbeing; supporting patients and their families, teaching the lifesaving skills of CPR; and providing health professionals with the knowledge and skills to translate best evidence into daily preventive care.

Your donation can be sent:

By post: Croí Heart & Stroke Centre
Moyola Lane, Galway

Online: www.croi.ie
By phone: 091 544310

Our donors, supporters and volunteers continue to give generously of their time and resources. We are deeply grateful for this support and endorsement of our mission. Using this generosity to the best benefit in a meaningful and measurable way is central to everything we do. Croí adheres to the Code of Governance for Charities and the Statement of Guiding Principles for Fundraising. All personal information provided is held in accordance with the Data Protection Acts 1988 and 2003.

Registered Charity CHY 7500

This booklet has been designed to help you understand cholesterol and is not intended to replace the medical advice of your doctor.



Croí Heart & Stroke Centre
Moyola Lane, Newcastle,
Galway

Telephone **091 544310**
Email **info@croi.ie**
www.croi.ie

