CHOLESTEROL

THE FACTS
INTRODUCTION
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The biggest cause of death in men and women in this country is coronary heart disease (CHD) - the clogging up of the arteries which leads to a heart attack. Heart disease is responsible for killing up to 260,000 people every year in the UK alone.

Many factors influence the risk of CHD. These include both non-modifiable factors such as inherited risks (reflected in family history), increasing age and male gender, and modifiable risks such as smoking, high blood pressure and high blood cholesterol levels. There is now increasing evidence that many other factors, including lack of physical activity, being overweight, the distribution of body fat, lack of antioxidants, an abnormal response to insulin, abnormalities in blood clotting factors and high blood homocysteine levels may also contribute to CHD.

However, research has shown that a high blood cholesterol level is one of the major modifiable risk factors of CHD and that our lifestyles, and particularly the food we eat, can influence our blood cholesterol level and therefore our risk of heart disease.

So how can we help control blood cholesterol levels and reduce the risk of CHD?

This leaflet sets out to dispel some myths about cholesterol and provide you with the facts.
What is cholesterol?

Cholesterol is a waxy substance which is an essential component of cells and hormones of the body. It is made by the liver and is naturally present in the blood. The liver must produce a certain amount of cholesterol - without it, the body would cease to function properly. Cholesterol is also present in some foods such as eggs, liver and kidney.

What are LDL and HDL cholesterol?

Most cholesterol in the blood (70%) is carried on certain proteins called low density lipoproteins (LDL), which take cholesterol from the liver to body tissues. High blood levels of LDL-cholesterol (sometimes called "bad cholesterol") are associated with an increased risk of CHD. Most of the remaining cholesterol is carried as high density lipoproteins (HDL), sometimes termed "good cholesterol", because they transport excess cholesterol back to the liver for disposal from the body and because higher HDL levels are associated with a decreased risk of CHD.

What is the difference between blood cholesterol and dietary cholesterol?

Blood cholesterol is the level of cholesterol in the bloodstream. Dietary cholesterol is the cholesterol present in some foods that we eat.

Is dietary cholesterol the main cause of high blood cholesterol?

No. Research has shown that the amount of fat in the diet - especially saturates - has a greater effect in raising your blood cholesterol than the amount of cholesterol in the diet. The more cholesterol we absorb from the diet, the less our bodies need to make and vice versa, but usually only about one third of the cholesterol in the body comes from the diet. Other factors such as smoking, being overweight and physical activity can also influence blood fat and cholesterol levels.

What happens if I have a high level of blood cholesterol?

When too much LDL cholesterol is present in the blood, it undergoes a chemical change (oxidation) and is taken up by cells in the walls of the coronary arteries (the blood vessels that supply the heart). This causes a build-up of fatty material (atheroma) which makes the arteries narrower. Narrow arteries will slow down the flow of blood to the heart and, if they are then blocked by a blood clot, the blood flow stops completely, causing a heart attack.

Can high blood cholesterol be hereditary?

Yes. For most people, the level of blood cholesterol is the result of both diet and lifestyle. However, sometimes, high blood cholesterol is the result of a defect which is
inherited and which increases the risk of coronary heart disease. If you have a strong family history of heart disease, get your blood cholesterol level and other risk factors checked out by your doctor.

How can I lower my blood cholesterol level and the risk of a heart attack?

Maintaining a healthy lifestyle can help control your blood cholesterol level and reduce your risk of coronary heart disease. This means not smoking, increasing your level of exercise and maintaining a healthy weight. It is also recommended that you reduce your intake of fat - particularly saturates.

What are saturates?

All fats are made up of building blocks called fatty acids. These differ in their chemical composition. We refer to them as saturated, monounsaturated, or polyunsaturated fatty acids - saturates, monounsaturates, or polyunsaturates for short. Fatty foods contain different mixtures of these, but often one type predominates. Foods high in saturates include cream, butter, full fat cheeses, fatty meats, pastry, cakes and biscuits.
Polyunsaturates also divide into two families - the n-6 family, found in vegetable oils such as corn and sunflower oils, and the n-3 family, found in some nuts and seeds and their oils, such as soya and walnuts, and in oily fish such as salmon, sardines, trout and mackerel.

How important are polyunsaturates?

While saturates seem to push up blood LDL cholesterol levels, the n-6 polyunsaturates lower blood cholesterol (both LDL and HDL). The n-3 polyunsaturates seem not to affect cholesterol levels either way. The monounsaturates have a small cholesterol-lowering effect but importantly they only lower LDL cholesterol and do not affect the level of the 'protective' HDL cholesterol.

Why were we told in the past to cut down on eggs?

In the past it was thought that people should limit the number of eggs they eat because they contain dietary cholesterol. But it is now known that saturates - in which eggs are relatively low - are more influential in raising blood cholesterol than dietary cholesterol itself.

An analysis in 1997 of 224 studies on more than 8,000 subjects* demonstrated conclusively that saturated fat, not dietary cholesterol, is the major contributor to high blood cholesterol levels in the general population. Recent research ** from a large combined study of over 117,000 men and women in the United States has also shown that consuming up to one egg a day is unlikely to affect the risk of coronary heart disease in healthy men and women.

Eggs are also an important source of protein, essential vitamins (A, D, E and B group) and minerals (iron, calcium & zinc) so they can make an important contribution to a healthy diet.

CHOLESTEROL
WHAT THE EXPERTS SAY

NATIONAL HEART FORUM FOR CORONARY HEART DISEASE PREVENTION

"There is now broad consensus and weight of evidence that dietary factors are one of the fundamental determinants of coronary heart disease. Dietary fat, and in particular saturated fatty acids, are widely accepted as being the factor most likely to increase blood cholesterol."


FAMILY HEART ASSOCIATION

"The amount of cholesterol synthesised by the body varies to a small extent with intake of dietary cholesterol, but saturated fat is a more powerful influence. Excess saturated fat in the diet increases blood cholesterol."

Source: Family Heart Digest Fact Sheet: 'Cholesterol & Lipoproteins 2000'.

DEPARTMENT OF HEALTH

"Dietary cholesterol can raise total blood cholesterol, but this effect is less important than that of saturated fatty acids."

WHAT IS A HEALTHY DIET?

A healthy diet should contain a variety of foods and this "Balance of Good Health" plate shows the four main groups of food in healthy proportions for adults and older children. Bread, pasta, rice and other cereals, vegetables and fruit are the basis of a healthy diet, together with lower fat dairy products, lean meat, eggs and fish. The fifth, smallest, group contains foods rich in fats and sugars and the advice here is moderation!

Also try to avoid eating too much salt and drinking too much alcohol. Too much of both can contribute to high blood pressure and therefore increase the risk of heart disease.