

# INFORMATION ON CHOLESTEROL, FATS AND NUTRITION

This is an information sheet about cholesterol and the fats in our diet. It gives you some basic information about the types of fats in our diet and some practical tips to help you establish healthy dietary habits.

## What is cholesterol?

Cholesterol is a type of fat found in your blood. It is made by the liver and helps the body build up cells and tissues and also make hormones (e.g. oestrogen, testosterone) and vitamin D. We can also get it from eating certain foods.

Fat and cholesterol are transferred in the body packed with other molecules into what we call lipoproteins. The most important of those are the following:

- Low-Density Lipoproteins (**LDL**), also known as “**bad cholesterol**”, takes cholesterol to the body cells but if that is in excess, it can start building up creating problems (see below).
- High-Density Lipoprotein (**HDL**), or the “**good cholesterol**”, takes the excess of cholesterol away from the body cells and back to the liver so it can be broken down and removed from the body, so it has a protective role.
- **Triglycerides** make up most of the fat that we take from the food and it is the main way the fats get to the cells, but if in excess can be unhealthy.



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## What should my blood cholesterol level be?

Generally, you would like your total cholesterol <math>< 5\text{mmol/l}</math>, your non-HDL cholesterol <math>< 4\text{mmol/l}</math>, LDL <math>< 3</math>, fasting triglycerides <math>< 1.7</math>, non-fasting triglycerides <math>< 2.3</math> and HDL >math>1.0</math> (for men)/ >math>1.2</math> (women). If you already have heart disease or other high risk factors, those levels might be stricter for you and your doctor would be able to advise you on this.

**In general, the lower your LDL and triglycerides and the higher your HDL the better chances of reducing your risk of heart disease, vascular disease, stroke and type 2 diabetes**

## What causes high cholesterol and who develops it?

Risk factors related to developing high cholesterol include:

- ❖ Eating too much saturated fat
- ❖ Drinking too much alcohol
- ❖ Chronic stress
- ❖ Being overweight or obese
- ❖ Having Type 2 Diabetes
- ❖ Menopause
- ❖ Carrying extra weight around the waist
- ❖ Having an underactive thyroid
- ❖ South Asian background
- ❖ Not being physically active
- ❖ Having certain liver or kidney conditions
- ❖ Having a genetic condition (Familial Hypercholesterolaemia)
- ❖ Smoking
- ❖ Certain medication



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## What are the risks when someone has high blood cholesterol?

When cholesterol builds up, then you are at high risk of having narrowing of your arteries which can lead to coronary heart disease, heart attack, stroke and peripheral vascular disease. This risk is even higher as you grow older and if you are already diagnosed with Type 2 diabetes or high blood pressure. Also, when fat accumulates in the body organs (pancreas, liver – ‘fatty liver’), then there is an increased risk to develop Type 2 diabetes.

## Should I avoid foods high in cholesterol?

Some foods contain cholesterol but interestingly they don't make a big difference in the blood cholesterol levels. Cholesterol is mostly made in the liver and is also found in animal-derived foods, like eggs, meat, dairy products, etc.

**Saturated fats rather than cholesterol consumption has a greater effect on blood cholesterol levels**

## So what are the types of fat?

We all need some fat in our diet, as there are some essential fats that our body can not make and some that are needed to help absorb some fat-soluble vitamins (vitamins A, D, E, K).

On the one side there are some beneficial fats, called unsaturated and they are divided into polyunsaturated (PUFA) and monounsaturated (MUFA). On the other side there are the harmful fats, known as saturated fats and a subtype of those, called trans fats.

## Unsaturated fats (think beneficial!)

They are in liquid form when in room temperature and are beneficial for your health.

MUFA are found in high levels in olive and canola oils, avocados, nuts (almonds, hazelnuts) and seeds (pumpkin, sesame).

PUFA are found in high levels in sunflower and flaxseed oils, walnuts, flaxseeds and oily fish.

**Omega-3 fats** are an important type of PUFA that the body can not make. They are particularly beneficial in reducing the triglycerides, maintaining healthy arteries and normal blood pressure. Those are found in seeds, walnuts, seed oils (e.g. flaxseed oil) and oily fish.



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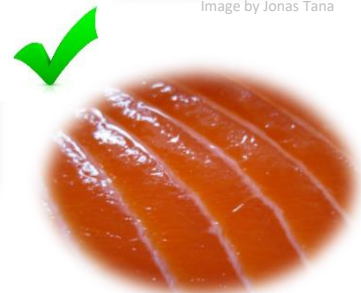


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## Saturated fats (think harmful!)

As a Nation, we still eat a lot of saturated fats. They are usually solid in room temperature. Foods that are high in saturated fats are: butter, ghee, lard, hard margarines and foods made from these (e.g. cakes, biscuits, puddings, pies, pastries, etc), dairy (full cream milk, cheese, full fat yoghurt, crème fraiche, etc), fatty meats and meat products (sausages, burgers, salami), coconut and palm oils.



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## Trans fats (think harmful!)

Most of those are made artificially during an industrial process converting oils into solid fats (hydrogenation).

\*\*In the UK there is no trans fats ban and despite an agreement to reduce those in supermarkets/ fast food chains, we need to be vigilant as consumers.



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## What can I do to improve my fat consumption quality and my blood cholesterol levels?

There are many things that you can do in your day-to-day life that can have a significant impact in improving your cholesterol levels and reducing the risk of cardiovascular disease. Remember to look at your dietary choices as a whole and remember the following:

**The biggest impact on blood cholesterol levels is the mix of fats and carbohydrates in your diet.**

**Having a healthy balance of fats in your nutrition can help to reduce the quantity of blood cholesterol but also improve the quality.**

- ❖ **Reduce** the amount of **saturated fats** in your diet as they can increase your total cholesterol. These are found mostly in red/ processed meats, full-fat dairy products, animal-derived spreads, cakes and biscuits.
- ❖ **Eliminate trans fats**, as they increase your LDL and decrease your HDL. They are mostly found in processed foods and takeaways.
- ❖ When cutting back on foods like red meat and butter, ensure you replace them with **oily fish, beans, nuts, healthy oils** instead of refined carbohydrates or too much dairy.
- ❖ If high fat consumption is replaced by high refined carbohydrate use, **the excess of sugar will be converted into fat in the body.**
- ❖ **Increase** the amount of **fibre** in your diet (vegetables, fruits, beans, nuts, wholegrains).
- ❖ Replace saturated with unsaturated fats.
- ❖ **Eat foods rich in omega-3 fatty acids** (seed oils, walnuts, oily fish).
- ❖ **Reduce alcohol** consumption – think of alcohol as liquid fat.
- ❖ When choosing a spread, opt in for a **vegetable oil based** one or even consider the cholesterol-lowering ones that are rich in stanols which help with cholesterol regulation.
- ❖ When baking, opt in for fats and oils that are mainly unsaturated.
- ❖ When thinking about salad dressing, it is best to make your own with drizzling some olive/nut oil and vinegar, rather than choosing a ready-made creamy one. When using mayonnaise, opt in for the light option.
- ❖ A special note regarding **coconut oil**. It has been very popular and promoted as heart healthy, but it is actually **high in saturated fats** (highest of all oils!) and increases LDL cholesterol, so best to avoid.
- ❖ **Eliminate** the consumption of **palm oil**. Ensure the products you buy do not have this in the ingredients. Sometimes they will mention “palm oil – free” very clearly.
- ❖ Cooking methods can also affect the quality of fats consumed. Remember when cooking in high temperature, you need to use more **‘stable’ oils** – those high in MUFA (e.g. olive oil, canola oil, sunflower oil, flaxseed oil, avocado oil). Do not use the oil more than once and avoid frying, deep frying, grilling.
- ❖ Think about your habits around meals. Ready meals at work? Frequent chip shop visits? Eating out regularly? Takeaways a few times a week? In those scenarios, it is quite common that you regularly consume high quantities of harmful fats, refined sugars, multiple times-used oils and potentially palm and coconut oil as well. Try and increase **home made meals** where you can control what types of fats and other nutrients you consume.



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