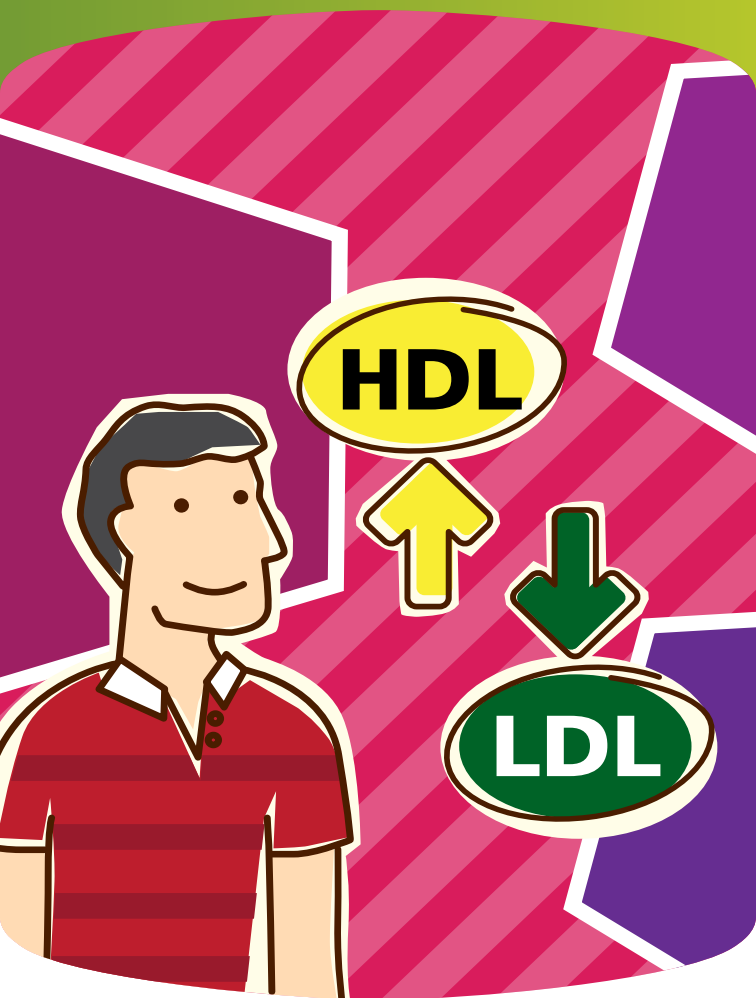


Managing Hyperlipidemia (High Cholesterol)



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What is Hyperlipidemia or “High Cholesterol”?

Hyperlipidemia refers to increased levels of lipids (fats) in the blood, including cholesterol and triglycerides. It can significantly increase your risk of developing coronary heart disease.

Cholesterol in our blood comes mainly from our diet and liver production. Cholesterol is a fat-like substance that is naturally present everywhere in the cell walls or membranes of our body. Our body uses cholesterol to produce hormones, vitamin D and bile acids to help digest fats. However, only a small amount of cholesterol in our blood is required to meet these needs.

As blood is watery, and cholesterol is fatty, the two do not mix. Cholesterol is circulated in the bloodstream in small packages called lipoproteins, which are made of fat (lipid) on the inside and proteins on the outside. These lipoproteins include high-density lipoproteins (HDL), also known as ‘good cholesterol’, and low-density lipoproteins (LDL), also known as ‘bad cholesterol’.

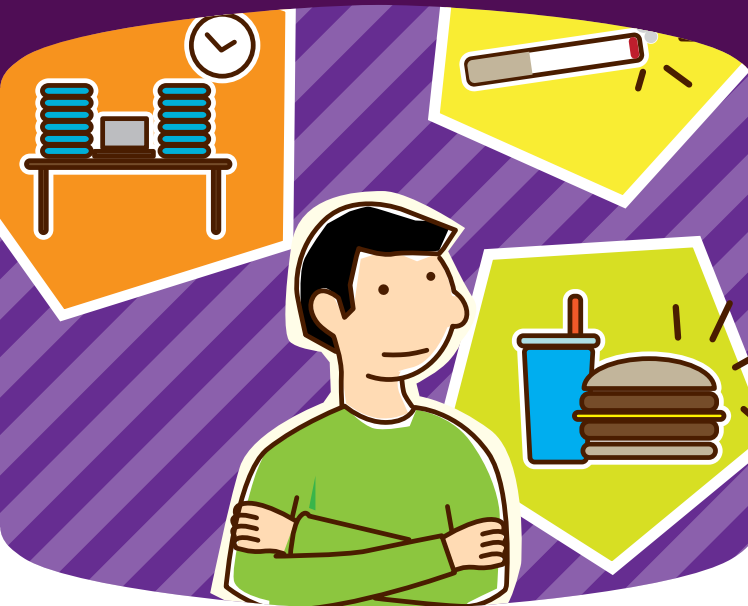
While a high level of ‘good cholesterol’ can protect our heart, a high level of “good” cholesterol and “bad” cholesterol together, or just ‘bad cholesterol’ can heighten your risk of heart problems and stroke.

High cholesterol levels can be due to a variety of factors including a family history of the condition, diet and lifestyle.

High Cholesterol in Singapore

According to the National Health Survey 2010, 17.4% of the total number of people suffers from Hyperlipidemia. Alarmingly, approximately 1 out of 4 people between the age of 50 – 69 has Hyperlipidemia.

Statistically, males have a higher chance of developing Hyperlipidemia than females, and it is more prevalent in Malays, followed by Chinese and Indians.



Who is likely to develop Hyperlipidemia?

Certain risk factors increase the chance of developing Hyperlipidemia.

You are at a higher risk if you:

- are obese
- are a smoker
- are male (however, risk increases rapidly in females after menopause)
- have a family history of coronary heart diseases
- have a stressful lifestyle
- are of an advanced age
- are physically inactive
- have diet high in saturated fats and cholesterol
- suffer from conditions such as Diabetes and Hypertension

Signs & Symptoms

Hyperlipidemia on its own does not cause any symptoms, so many sufferers are unaware that their cholesterol and lipid levels are too high until it is too late.

However, some telling signs of high levels of bad cholesterol and lipids are the accumulation of fats under the eyelid, fingers and elbow or knee tendons. These fat deposits can also occur in the trunk, back and buttocks if triglyceride (a type of fat found in your blood) levels are very high.



Complications

Cholesterol can build up in the walls of your arteries (blood vessels that carry blood from the heart to other parts of the body). This build-up of cholesterol, known as plaque, will cause the narrowing of arteries over time. This is called atherosclerosis, or hardening of the arteries.

If left untreated or inadequately treated, it can cause other problems.

Effects on the brain:

May result in stroke, as blood flow to the brain is disrupted due to atherosclerosis.

Effects on the heart:

Hardening and narrowing of blood vessels in the heart lead to angina, heart attacks and even heart failure.

There is an added risk of complications for those who smoke, have diabetes, high blood pressure and are obese.

Diagnosis

Hyperlipidemia can be diagnosed with a blood test before which you will be required to fast for 10 – 12 hours. This will ensure that all food is properly digested and will not affect the test results. From your blood test, the amount of LDL, HDL, triglycerides and total cholesterol are measured. Your doctor will decide on your treatment goals based on your test results and numbers of risk factors for developing heart diseases.

Treatment for Hyperlipidemia

Treatment Goals

The main goal of maintaining a healthy lipid profile is to reduce the risk of atherosclerosis and its accompanying complications as stated in Page 5.

Generally, the primary goal of Hyperlipidemia therapy is to lower LDL (bad cholesterol) levels.

Your doctor will set LDL treatment goals for you - from less than 100 mg/dL to less than 160 mg/dL, depending on your pre-existing risk for developing coronary heart disease. This is achieved through a combination of lifestyle modifications and medications.

Lifestyle Modifications

- Stop smoking.
- Maintain a healthy weight and a healthy Body Mass Index (BMI) of between 18.5kg/m² and 22.9kg/m². Your BMI can be calculated by the following formula:

$$\text{BMI} = \frac{\text{Your Weight (kg)}}{\text{Height (metres)} \times \text{Height (metres)}}$$

A slow, gradual weight loss rather than rapid weight loss is recommended. Weight loss should not exceed 1 kg per week.



Exercise Regularly

- Exercising not only helps you to maintain a healthy lipid profile but also helps control blood pressure and blood glucose level.
- As recommended by the Health Promotion Board, do at least 150 minutes of moderate intensity aerobic exercises once a week. Eg. 30 minutes a day, five times a week. Each session should be at least 10 minutes in duration.
- Do not use lack of time as an excuse to avoid exercise.
- Brisk walking, leisure cycling or even taking the stairs instead of using the lift are good exercise regimes.

Adopt Sensible Drinking Limits

- Limit alcoholic drinks to 1 standard drink per day for women and 2 per day for men.
- A standard alcoholic drink is defined as 2/3 can (220 ml) regular beer, 1 glass (100 ml) wine or 1 nip (30 ml) spirits.

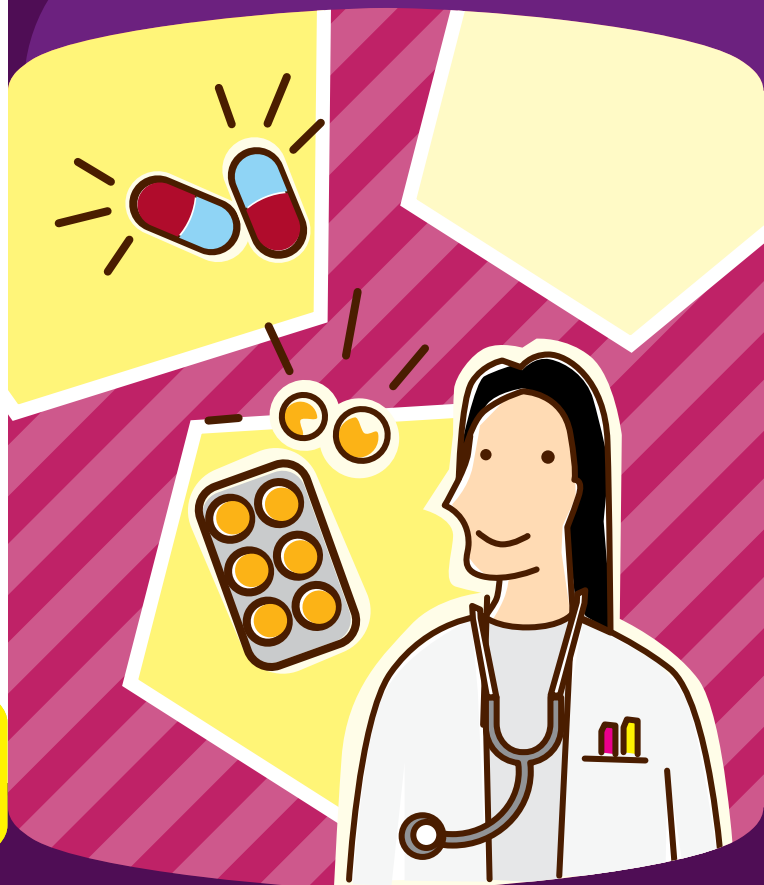
Maintain a Balanced and Healthy Diet

- Reduce your intake of saturated and trans fats which are high in LDL (bad cholesterol). These include animal fats, ghee, coconut oil, palm oil, butter and hard cheese.
- Increase your intake of unsaturated fats by changing your regular cooking oil to olive oil, sunflower oil, corn oil or canola oil. Other sources of unsaturated fats include: nuts and seeds, avocados and oily fish such as tuna and salmon.
- Increase your fibre intake as fibre binds to cholesterol and lower cholesterol absorption. Eat whole grain bread and brown rice instead of white bread and rice. Include more vegetables, fruits and oat cereals into your diet. Eat 2 servings of fruits and 2 servings of vegetables daily.
- Choose healthier meat such as salmon or tuna fish. They are high in omega -3 fatty acids that can protect your heart. You can also replace meat with soy-based products which are also a good source of protein.



- Look out for **'The Healthier Choice'** symbol on packaged food products as they indicate that the food item contains lower trans fats, saturated fats, sugar or salt.
- Steam, grill or boil your food instead of frying.
- Restrict your caffeine consumption to less than 5 cups a day.
- Reduce your intake of salt by switching to pan salt or experimenting with herbs and spices. Do not take more than 6g (0.2oz or 1 teaspoonful) of salt a day as it increases your blood pressure.

Talk to a pharmacist or dietitian to get more information about planning a balanced and healthy diet.



Medication for Hyperlipidemia

Depending on your lipid profile and co-existing health conditions, your doctor may prescribe a suitable lipid lowering drug for you. You have to take your medications over a long period of time to effectively improve your cholesterol levels and lower your risk of stroke or heart attack. You should inform your doctor if you experience any side effects with the medications instead of stopping or adjusting the dose of the medications yourself.

Some groups of medications for Hyperlipidemia include: Statins, Resins, Niacin, Fibrates and Ezetimibe.

Please consult your pharmacist for more information regarding your medications.

Supplements for Healthy Cholesterol Levels

- Fish oils contain polyunsaturated omega 3 fatty acids. Taking fish oil supplements in moderation can help to bring down triglycerides levels significantly by 30% to 60%.
- Red yeast rice is a substance used traditionally in Chinese medicine and is highly valued for its ability to lower cholesterol. It contains monacolins, which are compounds known to inhibit the production of cholesterol.
- Ispaghula supplements provide soluble fibre that reduces the reabsorption of bile acids in our body. This stimulates the conversion of cholesterol into bile acids to replace the lost bile acids in our body, which reduces our cholesterol levels.
- Some studies indicate that garlic slightly lowers blood cholesterol levels, especially in the short-term. However, the results are not very conclusive.

Note that these supplements may interact with some of your medications, or may not be suitable for you if you have pre-existing medical conditions. Talk to your pharmacist for more information.

*Written by Unity's pharmacist:
Lim Zhi Ying, B.Sc (Pharm) Hons*

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