

Pharmacist's advice on appropriate medication use

- ✖ Healthy diet, exercises and weight control are no longer needed after taking cholesterol-lowering medications.
- ✔ Cholesterol-lowering medications can reduce blood cholesterol level, but excessive dietary intake of cholesterol could severely hinder the disease management. Therefore, the combination of medication use, healthy diet, weight control and regular exercise are all essential in reducing cholesterol level.
- ✖ Refuse to use medications because of potential side effects.
- ✔ Not everyone will experience side effects after using the medications. The severity of side effects also differs among individuals. You should not be too worried about the side effects of the medications. If you stop using the medications or change the dose or frequency due to potential side effects, your conditions may get worse. Most common side effects are mild and will subside when your body adapts to them. Consult your doctor or pharmacist if the side effects persist or worsen.
- ✖ Doctor asked me to take two types of cholesterol-lowering medications, but I think one is enough.
- ✔ The type of medications or dosage may vary in different patients according to their conditions and response to medications. Most patients require only one type of cholesterol-lowering medication but some may need additional medications. Do not stop taking your medications without doctor's advice.

- ✖ Reduce the dosage or even stop the medication because I do not have any symptoms.
- ✔ Patients who have high cholesterol level usually do not have any symptoms until blood vessels are significantly narrowed and blood flow is limited. Therefore, do not self-adjust the dosage merely based on your symptoms.

Cholesterol content in food

Food Item	Portion Size	Total Fat (g)	Saturated Fat (g)	Trans Fat (g)	Cholesterol (mg)
Macaroni (cooked)	1 bowl, 150g	1.4	0.3	0	0
Rice	1 bowl, 200g	0.4	0.1	/	0
Apple (with skin)	1 medium, 180g	0.7	0	/	0
Avocado	1 cup, cubes, 150g	22	3.2	/	0
Carrot (raw)	100g	0.2	0	0	0
Choy sum (raw)	100g	0.3	0	/	0
Coconut meat	1 cup, shredded, 80g	26.8	23.8	/	0
Chicken egg	1 extra large egg, 56g	5.6	1.7	/	237
Duck egg	1 egg, 70g	9.6	2.6	/	619
Quail egg	1 egg, 9g	1	0.3	/	76
Beef brisket, separable lean	100g	3.8	1.4	/	41
Beef rib, separable lean and fat	100g	26.1	10.8	/	70
Beef tripe	100g	3.7	1.3	0.15	122

Food Item	Portion Size	Total Fat (g)	Saturated Fat (g)	Trans Fat (g)	Cholesterol (mg)
Chicken breast, with skin	100g	9.3	2.7	0.1	64
Chicken breast, without skin	100g	2.6	0.6	0.01	64
Chicken wing, with skin	100g	16	4.5	0.19	77
Lamb leg, separable lean	100g	5.2	2.1	/	64
Lamb rib, separable lean and fat	100g	24.2	11.9	/	68
Pork belly	100g	53	19.3	/	72
Pork chop, separable lean	100g	6.5	2.2	/	55
Pork kidneys	100g	3.3	1	/	319
Pork liver	100g	3.7	1.2	/	301
Pork, spare ribs, separable lean and fat	100g	23.4	7.5	0.22	80
Clam	100g	1	0.1	/	34
Crab	100g	1.1	0.2	/	78
Cuttlefish	100g	0.7	0.1	/	112
Grouper	100g	1	0.2	/	37
Scallop	100g	0.8	0.1	/	33
Shrimp	100g	1.7	0.3	/	152
Squid	100g	1.4	0.4	/	233
Canned evaporated milk	31.5g	2.4	1.5	/	9
Cheddar cheese	28g	9.3	5.9	/	29
Cottage cheese	28g	1.2	0.5	/	5

Food Item	Portion Size	Total Fat (g)	Saturated Fat (g)	Trans Fat (g)	Cholesterol (mg)
Skimmed milk	1 cup, 245g	0.2	0.1	/	5
Whipping cream	29g	10.4	6.7	0.23	32
Whole milk	1 cup, 257g	9.5	4.6	0.23	36
Butter	100g	81	52	2.6	240
Coconut oil	100g	100	86.5	/	0
Hard margarine	100g	80	14	11	1
Lard	100g	100	38	0.75	95
Soft margarine	100g	75	17	1.5	5
Vegetable oils (e.g. peanut oil, corn oil, olive oil)	100g	100	14.4	/	0
Barbecued pork puff pastry	1 piece, 39g	11.3	3.9	0.08	32
Deep-fried meat dumpling	1 piece, 45g	7.2	2	0.02	7
Mini-sized sticky rice wrapped in lotus leaf	1 piece, 96g	7	2.3	/	27
Pan-fried turnip cake	1 piece, 84g	4.8	0.8	/	7
Siu mai	1 piece, 29g	3.8	1.1	/	22
Spring roll	1 piece, 35g	7.4	1.3	0.03	12
Steamed barbecued pork bun	1 piece, 55g	4	1	/	9
Steamed beef ball with bean curd sheet	1 piece, 49g	6.9	1.4	/	11
Assorted cake	1 piece, 76g	13.7	6.8	0.3	76
Cheese cake	1 piece, 126g	23.9	15.1	0.57	164
Chiffon cake	1 piece, 77g	16.9	8.5	0.2	77

Food Item	Portion Size	Total Fat (g)	Saturated Fat (g)	Trans Fat (g)	Cholesterol (mg)
Cocktail bun	1 piece, 103g	19.6	9.1	0.42	28
Curry puff	1 piece, 70g	18.2	8.4	0.64	47
Egg tart	1 piece, 70g	11.9	4.3	/	65
Muffin	1 piece, 81g	16.2	3.8	0.1	52
Pineapple bun	1 piece, 97g	12.6	4.7	0.07	26
Sausage bun	1 piece, 96g	12.5	3.6	0.04	43
Wheat bread	1 slice, 47g	2.4	0.8	/	4

(Referenced from Centre for Food Safety)
"/" means that relevant nutrient data for that particular food item is not available.

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Medications for the Heart
Cholesterol-lowering Medications



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What is cholesterol



Cholesterol is a type of fat that is produced by the liver or absorbed from food. Normally, our bodies can regulate the cholesterol level. However, when this regulation is not functioning or there is an excessive intake of cholesterol, the blood cholesterol level may be raised.

Cholesterol is found in every cell of the body and has important functions in hormones and bile production, and cell membrane formation. However, excessive intake of cholesterol is harmful to our health. Persistent high cholesterol level leads to the formation of thick, hard deposits (plaques) that can cause hardening and narrowing or even clogging of blood vessels. Most commonly seen is the occlusion of the coronary arteries which can lead to chest pain, heart attack or even sudden death. Other risk factors for coronary heart disease include smoking, diabetes mellitus and high blood pressure. They would worsen the accumulation of plaques on inner walls of the arteries. It is therefore important to keep your blood pressure, cholesterol and blood sugar level within the optimal range to reduce the risk of developing cardiovascular diseases. You can check your cholesterol level by taking a blood test.

Moreover, it is important to control the amount of lipoprotein in our blood. Lipoproteins are substances that transport cholesterol around our body. They are classed into “good” and “bad” lipoproteins. High-density lipoprotein (HDL) cholesterol is considered as “good” cholesterol because it helps to protect the arteries so it is desirable to have a high HDL level. On the other hand, low-density lipoprotein (LDL) and very low-density lipoprotein (VLDL) cholesterol are considered as “bad” cholesterol because they contribute to the formation of plaque. As a result, the LDL and VLDL levels should be kept at a healthy range.

Having a good control of cholesterol level can reduce the risk of developing cardiovascular diseases.

In general, high cholesterol level should be managed by lifestyle changes before starting medication therapy.

Precautions on lifestyle

- ♥ Monitor and record blood pressure, blood lipid and blood sugar levels regularly.
- ♥ Have a balanced diet. Eat food with fewer calories, less salt, less fat and less cholesterol. Eat plenty of vegetables and fruits.
- ♥ Quit smoking. Limit consumption of alcohol.
- ♥ Exercise regularly.
- ♥ Maintain an appropriate body weight, especially for overweight and obese patients.
- ♥ Take enough rest, manage stress and maintain a positive attitude.

What if I miss a dose



- ♥ Use the missed dose as soon as you remember. Skip the missed dose if it is almost time for your next scheduled dose.
- ♥ Do not double the dose.
- ♥ Please consult your doctor or pharmacist for missed dose of alirocumab or evolocumab.

Precautions on medication use

- ♥ Use the medications as directed. Do not stop using the medications or change the dose or frequency unless directed by your doctor.
- ♥ Use the medications preferably at the same time every day.
- ♥ If you have history of drug allergy, consult your doctor or pharmacist before using the medications.
- ♥ Tell your doctor and pharmacist if you are pregnant, planning to become pregnant or breastfeeding.
- ♥ Consult your doctor or pharmacist before using any other medications, including health supplements, Traditional Chinese Medicines, Proprietary Chinese Medicines and over-the-counter medications.
- ♥ Please consult your doctor or pharmacist if you encounter any difficulties in using the medications.
- ♥ Please consult your doctor if symptoms persist or worsen after using the medications.

How to store



- ♥ Store in a cool and dry place away from direct heat and light or otherwise store as directed.
- ♥ Keep out of reach of children.
- ♥ Discard all medications that have expired or are no longer required.
- ♥ Do not share the medications with other people.

Cholesterol-lowering medications

Classes of medications	Common side effects	Precautions
Statins Atorvastatin, Rosuvastatin, Simvastatin	Headache, stomach upset, muscle pain	※ Do not take antacid at the same time with rosuvastatin. If you are taking an antacid, take it at least 2 hours after taking rosuvastatin. ※ Simvastatin should be taken in the evening. ※ Avoid in pregnancy or breastfeeding. ※ Contact your doctor immediately if you experience any unexplained muscle pain or weakness, loss of appetite, nausea, vomiting, dark urine, yellow skin or eyes, etc. ※ Avoid grapefruit or grapefruit juice while taking simvastatin.
Fibrates Fenofibrate, Gemfibrozil	Stomach pain, abdominal pain, skin rash	※ Fenofibrate: Swallow with water, do not chew. ※ Gemfibrozil: Take 30 minutes before meal. ※ Contact your doctor immediately if you experience any unexplained muscle pain or weakness, loss of appetite, nausea, vomiting, dark urine, yellow skin or eyes, etc.
Cholesterol absorption inhibitors Ezetimibe	Headache, tiredness, abdominal pain, stomach upset, flatulence, nausea	※ Contact your doctor immediately if you experience any unexplained muscle pain or weakness, loss of appetite, nausea, vomiting, dark urine, yellow skin or eyes, etc.
Bile acid sequestrants Cholestyramine	Constipation, gas or bloating, stomach upset	※ Do not take the medication in its dry powder form. It must be mixed with fluids and is more palatable if mixed with juices. ※ Side effects can be reduced by eating more high fibre-containing food (like vegetables) and drinking more fluids. ※ Any other medications should be taken at least 1 hour before or 4 hours after cholestyramine as this may prevent other medications from being absorbed by the body.
PCSK9 inhibitors Alirocumab, Evolocumab	Injection site reaction (redness, pain, bruising), influenza, inflammation of the nose and throat, upper respiratory tract infection, muscle pain, nausea	※ Store in a refrigerator (2-8°C), do not freeze; protect from light. ※ For subcutaneous use only. ※ Discard unused portion. ※ Do not shake.
Small interfering RNA-based therapy Inclisiran	Injection site reaction (redness, pain, rash), bronchitis, joint pain	※ Intended for administration by a healthcare professional. ※ For subcutaneous use only.
※ If you experience sleepiness, dizziness or blurred vision after taking the medications, avoid driving or activities requiring mental alertness or coordination. Avoid alcohol as it may increase the side effects.		
※ If you notice any allergic reactions like skin itchiness, face or hand swelling, breathing difficulty, etc., consult your doctor immediately.		