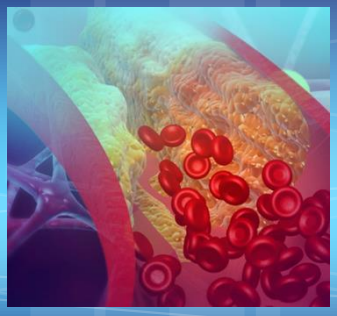

Conquering Cholesterol

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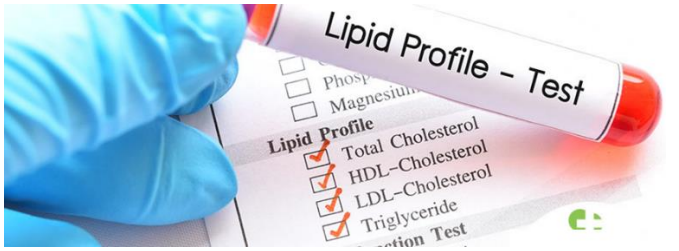
Cholesterol is a lipid or fat molecule that is essential to our health. There is no need to get any from the diet, as the liver manufactures all the cholesterol that the body requires. One of the primary roles of cholesterol is maintaining the cell structure and function. Cholesterol is a key component of cell membranes, providing stability and fluidity. It modulates the fluidity of the membrane, ensuring that it is neither too rigid nor too permeable. This affects the activity of various proteins and enzymes embedded in the membrane, in turn, influencing cell signalling, nutrient transport, and waste removal. Cholesterol is essential for the synthesis of a variety of hormones, including cortisol, aldosterone, oestrogen, progesterone, and testosterone. It plays a crucial role in the synthesis of vitamin D. When the skin is exposed to ultraviolet (UV) rays from sunlight, cholesterol is converted into vitamin D3 (cholecalciferol). Vitamin D. Bile acids are synthesized in the liver from cholesterol and stored in the gallbladder. Cholesterol is a critical component of the myelin sheath, which insulates nerves. When tissues are damaged, cholesterol helps facilitate the repair and regeneration of cells. It is also essential for the production of new cells during growth and development, making it particularly important during childhood and adolescence.

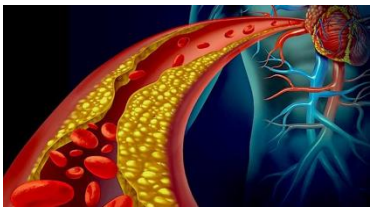


High-Density Lipoprotein (HDL) is known as "good" cholesterol. HDL helps remove excess cholesterol from the bloodstream and artery walls, transporting it back to the liver, where it is processed and eliminated from the body. Although we do call this the good cholesterol, the research suggests that having high levels of HDL does not have a positive effect on the risk of cardiovascular disease. Therefore, it's more accurate to refer to this as neutral rather than good. Low-Density Lipoprotein (LDL) is the one that is a concern as it is the "bad" cholesterol. LDL cholesterol is transported to cells that need cholesterol, but when there is too much LDL, it can lead to atherosclerosis – blockages in the arteries. Triglycerides are the most common type of fat in the body. They store unused calories and provide energy. High levels of triglycerides are linked to an increased risk of cardiovascular diseases, especially when combined with high LDL. It is particularly affected by alcohol, obesity, and excessive sugar and saturated fats in the diet.

Dietary saturated fat, cholesterol and trans fats are the biggest contributors to high blood cholesterol levels.

Saturated fat is found in all types of red or white meat, eggs, dairy, baked goods (pies, biscuits buns and pastries), deep fried foods, coconut and palm oils. Cholesterol is only found in animal foods – there is no cholesterol in any plant-based foods. All types of red and white meat, fish, processed meats, eggs, dairy, deep-fried takeaway foods and baked products contain cholesterol. Trans fats are found naturally found in meat and dairy products. Also, fats and oils that are partially hydrogenated – a process used the solidify liquid vegetables oils – can contain trans fats. This includes deep fried goods, baked goods, take-away foods, and processed foods that list hydrogenated or partially hydrogenated oils on their labels. There is no safe or tolerable upper limit for consumption of any of these lipids, because any intake will increase the bad cholesterol.

Atherosclerosis is a gradual disease process where plaque, that is made up of cholesterol and a few other things such as calcium, is built up on the inner walls of the arteries. This leads to narrowing and stiffening of the arteries which compromises the blood flow and the delivery of oxygen and nutrients to all the tissues. This leads to terrible consequences – heart attacks, strokes and peripheral vascular disease. Having high LDL cholesterol levels in your blood is the only direct atherosclerotic risk factor. For about four hours after a high-fat/high-cholesterol meal, the cholesterol in the blood continues to climb. There is oxidative stress and inflammation of the arteries, leading to stiffening and poor functioning of the arteries.



The ideal cholesterol gaols:

- Total Cholesterol of <4.0 mmol/L
- LDL cholesterol <2.0 mmol/L
- Triglycerides <2.0 mmol/L

The good news is, as long as there is not an underlying genetic disorder, high cholesterol is largely a lifestyle disease. There are a number of healthy lifestyle measures and natural ways that can be utilised to help lower the LDL cholesterol and triglycerides.

A whole-food plant-based diet has been extensively studied and shown to lower the LDL cholesterol and triglycerides, and prevent atherosclerosis and heart disease. This diet

emphasizes the consumption of minimally processed plant foods while excluding or minimizing animal products and processed foods. It is rich in fruits, vegetables, legumes, nuts, seeds, and whole grains. On average a lacto-ovo vegetarian (who eats eggs and dairy, but no meat) will have a cholesterol level almost 20% lower than a meat eater. In individuals with a complete plant-based diet the cholesterol will be more than 40% lower. Furthermore, even if you remove all fat from an animal product whether it be meat or dairy, the animal proteins alone will increase your cholesterol. This is another incentive to remove the animal products. There are a number of reasons why this diet is great at reducing the blood fat levels.

There are a number of reasons why this whole-food plant-based diet is great at reducing the blood fat levels.

1. It is high in soluble fibre binds to cholesterol in the digestive system, preventing it from being absorbed into the bloodstream. Foods rich in soluble fibre include oats, legumes, barley, flaxseed, chia seeds, psyllium husks, sweet potato, broccoli, brussell sprouts, carrots, apples, pears, citrus and berries. Studies have shown that consuming 5-10 grams of soluble fibre daily can significantly reduce LDL cholesterol levels.
2. Sterols and stanols are also naturally found in plant foods. These special compounds can block the absorption of cholesterol in the intestines. They are naturally present in in wholegrains, nuts, seeds, legumes and avocadoes.
3. Contains no cholesterol and no trans fats
4. WFPB diet, is rich in healthy monounsaturated and polyunsaturated fats, all of which improve the cholesterol levels. Good sources include olives, avocadoes, nuts and seeds.

When it comes to benefiting your LDL cholesterol, avocado is definitely a super food. Eating the avocado in its whole form not only lowers bad large LDL cholesterol, but it also lowers the very dangerous small LDL.

Nuts are also particularly good at lowering the bad cholesterol. The higher the cholesterol reading you start with the greater the overall benefit. Pistachios, macadamias, almonds, and walnuts are good options. Always aim to have a small handful of nuts each day, however eat your nuts raw, not roasted, due to an increase in inflammatory compounds that develop with roasting the nuts. When it comes to lowering cholesterol, Brazil nuts are the king of all the nuts.

They can lower the LDL cholesterol by a significant amount within the same day of eating them, and the beneficial effect can last up to 30 days even if no further Brazil nuts are consumed. Only 4 Brazil nuts are required to get this effect. To get a sustained response, be sure to include a couple of Brazil nuts in your handful of nuts each day.

Alcohol is a toxin, a direct carcinogen, and an addictive substance. With regards to cholesterol, non-drinkers have lower LDL cholesterol and triglycerides levels, less thickening of the artery walls, and no risk of the alcoholic cardiomyopathy. The French Paradox was a term coined in the 1980's. It referred to the observations that despite the high saturated fat and cholesterol intake in the French diet, they had lower rates of cardiovascular disease than the rest of the western nations. It was also observed that they had high red wine consumption, so it was assumed that that red wine was preventing the ill-health effects of the saturated fat and cholesterol in the diet. However, it turned out to be a

False French Paradox. In the 1980's, the research did not take into account that the dietary habits of the French had only recently moved from a Mediterranean basis (low in fat and rich in unprocessed fruits, vegetables, grains and nuts) to the unhealthy westernised diet which introduced a lot more animal products, rich in saturated fats and cholesterol. Furthermore, French physicians were greatly under-reporting deaths from cardiovascular disease in the population. Taking these aspects into account, decades later, the research now reveals that these poor dietary habits are causing the same rates of escalating chronic diseases in France, as seen in the rest of the world. There are no protective benefits in the consumption of red wine or any other form of alcohol.

Taking a lesson out of this false French paradox, I'd like to address the false theory of the immortal soul, a doctrine taught by Plato – a Greek philosopher who lived a few hundred years BC. Plato taught that the physical body was separate from a soul or mind. Furthermore, he theorized that the body could die, but the soul was immortal and imperishable and could never be destroyed. This was theory then entered into Christianity under Tertullian around the 3rd century AD, but only adopted as an official doctrine in the catholic church in 1513 AD. Subsequently, most Christian churches today have adopted this theory into their own doctrinal beliefs, despite it being against Bible teaching. The idea that there are some disembodies immortal souls that have separated from the bodies at death has led to a complete invasion of the occult into our culture. Everywhere, people are trying to speak and communicate with those who

have passed away, not realizing that they are actually being deceived by Satan and his evil angels who are very capable of impersonating dead relatives and others. So how does the Bible define a soul? Going right back to the creation of Adam and Eve – we can see the simple mathematics of the Body + Breath = Soul: Genesis 2: 7 *And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul*. There is no body distinct from the soul.

To totally refute the notion of an immortal soul: Ezekiel 18: 20 *The soul who sins shall die…* In fact, the Bible refers to the soul more than 1500 times and never does it use "immortal soul". Now that it is established that we have mortal souls, what actually happens when we die? Jesus Himself identified death as a sleep before He raised Lazarus from the dead: John 11: 11-14 *"After He said this, He said to them, "Our friend Lazarus has fallen asleep. But I am going that I may awaken him from sleep." Then His disciples said, "Lord, if he is sleeping, he will be well." Jesus had spoken of his death. But they thought that He was speaking of getting rest through sleep. So then Jesus plainly told them, "Lazarus is dead."* Ecclesiastes also explains what happens: Ecclesiastes 12: 7 *The dust returns to the earth where it was, and the spirit returns to God who gave it.* Before you assume that the "spirit" means a separate "soul" read this next Bible verse: Job 27: 3 *All the while my breath is in me, and the spirit of God is in my nostrils - the word spirit can be used interchangeably with breath.* Furthermore, the Bible makes it very clear in Ecclesiastes 9:5 that *"The living know that they will die, but the dead know nothing…"* The psalmist tells us that in death, the thoughts perish and they are not able to praise God (so the so called "immortal soul" is not in heaven): Psalms 146: *4 His breath goes forth, he returns to his earth; in that very day his thoughts perish*, Psalms 115: 17 *The dead do not praise the Lord, nor do any who go down into*

silence. Death is the absence of all life. The dead are indeed resting in peace. If believers are now resting in peace, and not in heaven as disembodied spirits, when will the heaven experience occur? The Bible gives us the answer to this. It's the second coming of Jesus Christ: 1 Thessalonians 4: 16-17 *For the Lord himself shall descend from heaven with a shout, with the voice of the archangel, and with the trump of God: and the dead in Christ shall rise first: Then we which are alive and remain shall be caught up together with them in the clouds, to meet the Lord in the air: and so shall we ever be with the Lord.* Only at the second coming does the Bible say that we will finally meet the Lord.

Back to some healthy lifestyle principles to help lower the cholesterol!

Regular physical activity has a positive impact on cholesterol management. Exercise:

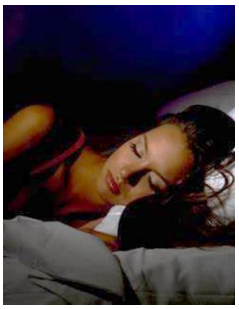
- Lowers LDL cholesterol
- Reduces triglycerides
- Decreases inflammation
- Improves inner blood vessel wall function

There are two types of exercise that are particularly useful for achieving heathy blood fats.

1. Aerobic exercise is the exercise that makes you huff and puff, and includes activities such as walking, cycling, and swimming. The recommendation is half-an-hour each day
2. Resistance Training are the strength training exercises that includes training with small weights or resistance bands for example. It is recommended that you do 2-3 sessions each week.

Excess weight, particularly around the abdomen, can negatively impact blood lipid levels. Losing and maintaining a healthy weight can help reduce LDL cholesterol and triglycerides.

It is well established that smoking has major effects of cardiovascular risk and detrimental effects of the blood fats. Smokers have significantly higher LDL cholesterol and triglycerides than non-smokers. Nicotine and other chemicals in cigarette smoke increase the oxidation of LDL cholesterol, making it more likely to build up plaques in arteries. Smoking also induces a state of chronic inflammation and oxidative stress, further exacerbating lipid abnormalities and promoting the formation of atherosclerosis. This translates into a very high risk of coronary artery disease, stroke and peripheral artery disease. The benefits of quitting start occurring quite quickly, the LDL cholesterol and TGs will start to come down and within one year, the risk of heart disease is halved. After 15 years of abstinence, the risk of heart disease is that of a non-smoker.



There is a bidirectional relationship between blood fats and sleep. Low fibre intake and high saturated fat and sugar intake, which contributes to high cholesterol, is also associated with lighter, less restorative sleep. On the other hand, poor sleep patterns can disrupt lipid metabolism, leading to higher cholesterol levels. Getting an appropriate amount of sleep helps to maintain the balance of enzymes and hormones involved in lipid regulation, lower LDL cholesterol, and reduce triglycerides. The ideal window is 7-8 hours each night. Try to get a decent amount in before midnight to get the benefits from the deeper restorative stages of sleep.

Sunlight exposure is the primary source of vitamin D for most people. When ultraviolet B rays from the sun strike the skin, they trigger the synthesis of vitamin D, which plays a vital role in lipid metabolism. Vitamin D receptors are present in various tissues, including the liver, where cholesterol synthesis and metabolism occur. Adequate levels of vitamin D can help improve the body's ability to process and clear lipids from the bloodstream. With the Vitamin D modulating lipid metabolism in the liver, this reduces the production of LDL cholesterol. Vitamin D plays a role in insulin sensitivity, which is crucial for regulating triglyceride levels. Additionally, vitamin D can influence the activity of an enzyme that breaks down triglycerides in the blood.

Managing stress is always essential for so many health reasons, even when it comes to the regulation of blood fats. It has been known for many years that chronic stress can lead to adverse changes in lipids and it does this by stimulating the release of stress hormones such as cortisol and adrenaline. Over time, this leads to significant adverse changes to the blood fats. Effective stress management will reduce the stress hormones, inflammation, and the cholesterol and triglycerides. It can also promote healthier eating habits and regular physical activity, which contribute to improved lipid profiles.

There are some herbs that can help to reduce the blood fats:

- Amla: 500mg daily
- Fenugreek seed: 2 teaspoons 3 times each day
- Globe artichoke leaf: 3-6g daily
- Hawthorn Berry: 1-3g daily (caution – this can interact with some heart medications)
- Garlic: 2-4g dried powder daily
- Bergamot Orange: 1000mg daily
- Barberry bark: 3g daily (not to use in pregnancy)