

Cholesterol

Cholesterol is used in the body for the following:

Making cell membranes

Conduction channels through the heart

Precursor for sex hormones

For skin and new regrowth

Is used in inflammation

The types of Cholesterol in your body are:

Cholesterol or lipids (fats) are transported around the body on protein molecules called Lipoproteins. An increased in blood cholesterol (particularly LDL and triglycerides) has been associated with a greater risk of heart disease. In Australia, Lipid lowering drugs are currently the highest expenditure of all drugs. Modifying cholesterol does at times need medicating, however lifestyle and diet can play a dramatic role keeping it low.

HDL – *high density lipoproteins* are cardioprotective (protect your heart) and focus can be on raising these

LDL – *low density lipoproteins* are have a higher fat:protein ratio and are considered bad cholesterol

Triglyceride – fat ingested from diet, is considered to be bad cholesterol and is often elevated in diabetics.

(There are other forms of cholesterol, however the 3 mentioned above are the most commonly measured in blood tests.)

National Heart Foundation (2001) recommends:

	Low risk	High risk
LDL	< 4.0 mmols/L	< 2.5 mmols/L
HDL	> 1.0 mmols/L	> 1.0 mmols/L
Triglycerides	< 2.0 mmols/L	< 2.0mmols/L
Total Cholesterol	< 6.0 mmols/L	< 4.0 mmols/L

Lowering Cholesterol

Exercise: Exercising should be part of the person weekly routine -Walking or low impact exercise min. 3 times/week will increase HDL significantly

Weight loss

Stress Management

Anxiety control

Dietary Key points

- **Fats** Our bodies need fat! RDI = 30% of total diet. Butter is better than margarine (cis fatty acids vs trans fatty acids)

Good sources of fat are:

Flaxseed, linseed and olive oils

- ✓ Fish oils are one of the best interventions a person can employ. Supplementation with Omega 3 oils or eating fish 3-4 times/week has been shown to assist with cholesterol portfolios and decrease platelet aggregate times. Fish must be from the cold deep sea where they produce fatty layer around their body (this is rich in omega 3s which our Western diet is usually lacking).
- ✓ Nuts (in particular almonds, walnuts, brazil nuts)
- ✓ Avocados
- ✓ Organic or free range eggs

Bad fats are:

Butter

- ✗ Take away foods (eg Kentucky Fried Chicken)
- ✗ Saturated fats (usually coming from animals eg pork crackle)
- ✗ Palm and coconut oils are high in saturated fats and should be minimised

- **Carbohydrates**

- ✓ Vegies are good (although there is a distinction b/t high glycaemic index vegies such as potato that should be eaten in low quantities vs low glycaemic index vegies which are fine)
- ✓ Fruit OK (1 –2 pieces/day)
- ✓ Pastas, grains, cereals in moderation. I usually say to a maximum of ½ cup per meal, unless they are following this up with exercise. Australian are currently eating too many **carbohydrates, hence the increase in BMIs, diabetes and CVD and cholesterol!**

- **Fibre**

Fibre in the diet has been proven to actively assist with the excretion of LDL.

RDIs are 30g/day, most people have approx. 10 – 15g/day.

- ✓ Good sources of fibre are: porridge, other cereals, bran, grains, fresh fruit and vegies, psyllium
- ✓ Lecithin 1tbs/day will dramatically improve LDL and triglycerides

- **Proteins**

Proteins don't adversely affect cholesterol management. Infact studies are now proving that a diet containing 25-30% protein is cardio protective and can assist with Type 1 and Type II diabetes.

- **Other Cholesterol lowering foods**

- ✓ Garlic – 1 clove /day will assist in lowering cholesterol
- ✓ Plant sterols (new margarines) claim to lower cholesterol significantly. Some skepticism as it is a trans fatty acid and whether this out weighs the benefit or not is debatable.
- ✓ Sugar Cane Wax has been proven to lower cholesterol
- ✓ Isoflavanones (soy products, linseed, red clover, some vegies) will lower bad cholesterol and raise HDL