Dealing with high cholesterol

Cholesterol is a waxy fat carried through the bloodstream by lipoproteins.

HDL High-density lipoproteins "Good cholesterol"

LDL Low-density lipoproteins "Bad cholesterol"

"Good" cholesterol (HDL) is stable and carries "bad" cholesterol (LDL) away from the arteries. "Bad" cholesterol (LDL) sticks to artery walls and contributes to plaque build-up.

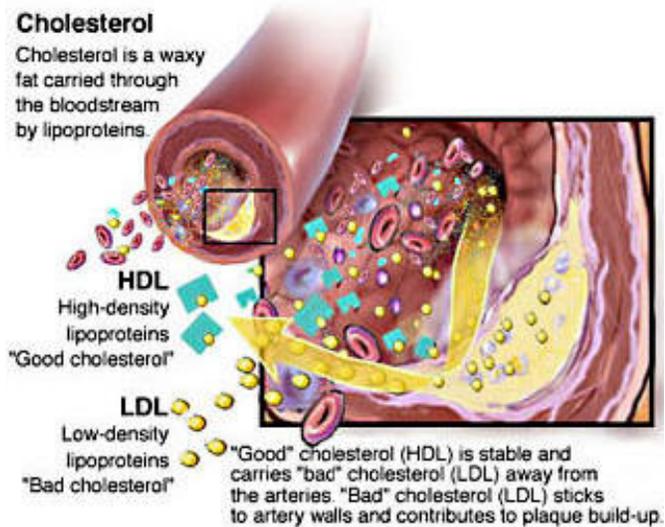**What is cholesterol?**

Cholesterol is a waxy fat that is carried through the blood by lipoprotein (lipid-protein) molecules. The lipoproteins carry a combination of cholesterol and triglycerides (a compound of 3 fatty acids) to our body's tissues where they are used as fuel. There are two types of lipoproteins which help shuttle our cholesterol: Light density lipoprotein (LDL) and high density lipoprotein (HDL).

LDL plays a very important role in our health. It shuttles cholesterol and triglycerides to our body tissues to provide fuel for our cells. However, if there is too much LDL in the blood circulation it can form deposits or "atherosclerosis" in our blood vessels. Atherosclerosis can increase blood pressure and risk of heart disease. HDL is has a higher protein content and density, its job is the reverse of LDL, it picks up excess cholesterol in our blood and tissues and takes it to the liver to be processed. LDL and HDL both play important roles in maintaining healthy cholesterol levels, however too much LDL or too little HDL can become problematic.

Good vs. bad fats

- Bad fats which raise LDL include saturated and trans fats.
  - o Saturated fats are typically more stable and solid at room temperature but can also cause more problems for our heart and circulatory system.
  - o Trans fats are oils that undergo a process called hydrogenation, like saturated fats, a diet too high in trans fats can cause increased risk for health problems.
- Good fats lower LDL and are liquid at room temperature. They include monounsaturated & polyunsaturated fats (PUFAs) .
  - o Polyunsaturated fats are considered essential nutrients because they are vital to the function of our body which can't make polyunsaturated fats. Two types of PUFAs are omega 3 and omega 6 oils.
  - o Monounsaturated fats have been found to have similar benefits as polyunsaturated fats in that they have both been found to decrease total cholesterol and LDL levels.

> An easy way to tell good fats from bad fats; good fats tend to be liquid while bad fats are more solid at room temperature.

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Tips to improve cholesterol:

1. Reduce consumption of foods that contain saturated or trans fats which increase.
2. Cook your own foods so that you can choose to add healthier oils to your meals.
3. Eat breakfast and regular, small meals throughout the day. Skipping breakfast and eating irregularly has been found to increase total cholesterol and LDL.
4. Avoid cholesterol containing foods that have been oxidized as they are more likely to clog your blood vessels and increase heart disease. These foods include dried egg products, powdered milk, grated cheese, French fries, processed meats, butter oil or heated butter and lard.

> A great way to burn at least 150 calories per day and lower cholesterol is a brisk-paced walk for a distance of 1.5 miles each day.

5. Consume more omega 3, raw omega 6 and monounsaturated fats which have been shown to help decrease total cholesterol and LDL and prevent LDL oxidation.

6. EXERCISE: even moderate exercise substantially reduces the incidence of coronary events. Aerobic exercise helps to lower triglycerides and raise HDL in addition to lowering blood pressure, body fat, blood sugar and the blood's tendency to clot. Moderate to vigorous activity for 20-30 minutes per day is recommended.

GOOD FATS	BAD FATS

Polyunsaturated fats
 • Omega 3 fatty acids
   - fresh fish (salmon, trout, mackerel, sardines, herring)
   - walnuts
   - flaxseed
   - canola oil
 • Omega 6 fatty acids
   - vegetable
   - safflower oil
   - soybean oil
   - sunflower oil
   - walnut
 Monounsaturated fats
   - olive oil
   - avocado oil
   - canola oil
   - most nuts (walnuts, almonds, pistachios, hazelnuts, macadamia nuts)
	Saturated fats
	   - dairy (whole milk, butter, cheese, ice cream)
	   - fatty or marbled meat
	 Trans fats
	   - vegetable shortening
	   - margarine
	   - baked goods (cookies, cake, crackers, muffins)
	   - partially hydrogenated cooking oils
	   - fried foods

GOOD FOODS	**BAD FOODS**
- Sesame - Soluble fibre (psyllium, ground flaxseed, oat bran) - Low glycemic index carbs (brown rice, bulgur wheat, lentils, oatmeal, whole fruits, whole grains) - Whole soybeans or products made from whole soybeans, and beans in general - Grapefruit	- Foods high in fructose and sucrose - Low fibre foods - High glycemic foods (potatoes, white bread, refined cereals, soft drinks, sugar, honey) - Foods high in cholesterol (fried chicken, hamburger, chocolate cake, frankfurter)