

What is Cholesterol?



Cholesterol --- a topic of conversation often discussed at dinner parties, recreational activities or staff rooms--- is a word commonly spoken in conjunction with the adjective “high”. It is a word regularly associated to diet, heart disease, stroke, depression and statin drugs.

Cholesterol is not a fearful deadly poison but rather a waxy organic compound found in mammals including humans. Cholesterol is essential to sustain life. It is the primary compound to all cell membranes.

As a waxy substance, it “sticks” to cell walls to repair and prevent further cell damage. It acts as an antioxidant to prevent free radical damage to cell membranes.

Cholesterol for the most part is metabolized in the liver. It manufactures bile acid and all sterol hormones including progesterone, estrogen and testosterone.

Cholesterol is neither a lipid nor fat but rather an alcohol. Its numerous carbon and hydrogen atoms are assembled in such an intricate three-dimensional network making it impossible to dissolve in water. This innate quality is used most cleverly by the body as it makes cells waterproof. This is especially critical for the normal functioning of the nerves and nerve cells; therefore, the highest concentration of cholesterol is found in the brain and other parts of the nervous system.

As cholesterol is insoluble, it is transported in the blood within particles of fats (lipids) and protein called lipoproteins. These “carriers” are categorized according to their density; the most famous being HDL (High Density Lipoprotein) otherwise know as “Good Cholesterol” and LDL

(Low Density Lipoprotein) otherwise known as “Bad Cholesterol”.

The LDL transports cholesterol from the liver to the peripheral tissues including blood vessel walls. When damage occurs and cells need cholesterol to repair cell walls, the body responds asking the LDL carriers to deliver. The greater the damage due to oxidation from such causes as cigarette smoking, chemical toxins or aging, the need to repair is amplified and more cholesterol is summoned.

The primary function of HDL is to transport cholesterol from the peripheral tissues, including arterial walls back to the liver. Here the liver either excretes the cholesterol as bile or uses it for other functions.

Between 60 to 80 percent of cholesterol in the blood is transported by LDL. Only 15 to 20 percent is transported by HDL. (There are other types of lipoproteins carrying an additional small percentage.)

Cholesterol is transported by different lipoproteins in opposite directions, therefore, “Why call it “Good” or “Bad”?”

The answer is, some studies have shown a greater risk of Coronary Heart Disease with a low HDL/LDL ratio, however, studies may not always include all “patient specific” factors, therefore, “risk” is not the same as “cause”.

Knowing that to be true, the question becomes, “*Is “High Cholesterol” a primary cause of Heart Disease?*” Some studies say no.

Cholesterol,,, if you wish to discuss your concerns, I am here to listen and suggest.