Blood Cholesterol: How Important is it to You?

Recent studies have shown that relatively simple lifestyle health changes can reduce the incidence of cardiovascular (CV) disease in adults by as much as 80%. The major CV risk factors include smoking, diabetes, hypertension, obesity and cholesterol. Much popular attention has been directed to cholesterol levels in the blood stream as an indicator of the likelihood of serious health outcomes.

The easily measurable clinical outcomes influenced by blood cholesterol levels include heart attack, cardiac death, stroke and hospitalization. Such CV disease is the leading cause of death in the USA, accounting for over a million deaths per year. Importantly, individuals should look globally at a larger group of several risk factors, including cholesterol, to determine their actual CV risk. No single risk factor necessarily means that clinically identifiable CV disease will occur. The influence of genetic predisposition and environmental hazards are also influential.

Cholesterol is a type of protein which is important to body structure and function. It is ingested in dietary form and synthesized by the liver. The detrimental property of this fat-associated protein is that it is also atherogenic or associated with the build up of fatty deposits or plaques in arteries throughout the body. The most important arteries that are attacked by this process are the coronary arteries which supply blood to the heart muscle and the carotid arteries which supply blood to the brain. When plaque is present in arteries, it can often grow to obstruct the blood flow in the vessel or develop "cracks" which encourage blood clot formation and subsequent inflammation. Both of these events can lead to potentially life threatening conditions.

The National Cholesterol Education Program (NCEP) and its physician scientists set national guidelines for acceptable lipid or fat blood levels and appropriate correction therapy. Traditionally, total cholesterol is described in two major components: high density lipoprotein (HDL-C) and low density lipoprotein (LDL-C). In common usage, the HDL-C is often referred to as the "good cholesterol" and the LDL-C is referred to as the "bad cholesterol."

The following blood values describe the levels of lipoprotein abnormalities. Total cholesterol is considered high if greater than 200mg/dl, but very high if greater than 240mg/dl. An LDL-C greater than 130mg/dl is considered high and greater than 160mg/dl is very high. The general recommendation for controlling lipid values is to work under the direction of your doctor to lower LDL-D to less than 100mg/dl. A body of evidence suggests that this primary target lowering of LDL-C is the most important goal in all of cholesterol treatment efforts. In fact, high-intensity LDL-C lowering to levels that approach 60mg/dl (a very low "bad guy" value) has recently been shown to be even more effective in reducing adverse CV outcomes such as heart attack and sudden cardiac death.

In the framework of "good guy" cholesterol, blood level of HDL-C less than 40mg/dl is abnormally low. There is evidence that this finding represents a major independent risk factor for CV disease. However, in contrast to the importance of lowering an elevated LDL-C, the elevation of a low HDL-C has not yet been absolutely accepted as clinically beneficial for people. Nevertheless, the preponderance of recent evidence suggests that raising low HDL-C levels is useful in atherosclerosis prevention.

Unfortunately, it has been shown that while the public is often aware of CV risk factors such as abnormal cholesterol, only about 15-20% of those who know of such a problem are motivated to attain improved risk factor control. There remains a large gap between awareness of cholesterol abnormalities and achieving treatment goal standards. At early stages, CV risk factors are silent, only becoming a threat to our lives when considerable disease has accumulated in our bodies. Our goal is to be aware of potential CV risk factors and to act aggressively and properly to take the necessary steps to reduce that risk.