

# Ldl cholesterol

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## LDL Cholesterol Goals and FRS Risk Scores      LDL Cholesterol Goals

Cholesterol is an organic compound categorized as a fat steroid. Although the compound is important for health, it poses a health challenge whenever it exceeds optimal levels. Cholesterol levels significantly influence the probability of getting heart problems. Cholesterol has the ability to build up within arteries and cause constrictions that restrict blood flow. The slowed or blocked blood flow denies the heart the oxygen it needs to function appropriately. As such, it is a significant risk factor in coronary heart diseases (CHD). However, cholesterol causes no negative symptoms. Therefore, it is not easy for anyone to know whether they are in danger or not. As a matter of caution, people are advised to have their cholesterol levels assessed regularly. These checks are conducted through 'lipoprotein profile' blood tests (National Cholesterol Education Program, 2005).

The total level of cholesterol is significant in determining the risk of CHD in any individual. The total cholesterol level is computed by adding bad (LDL cholesterol), good cholesterol (HDL) and triglycerides. The difference between LDL and HDL is that LDL contributes to the build up and blockage of arteries, whereas; HDL prevents cholesterol build within arteries.

Comprehensive assessment of cholesterol levels requires a lipoprotein profile test. However, where this is not possible one can still get a general idea on the probable level of their cholesterol and risk level. Cholesterol measures are done in milligrams (mg) per deciliter of blood (dL), and any levels above 200mg/dL or below 40mg/dL require that a lipoprotein profile be conducted (National Cholesterol Education Program, 2005).

The levels of HDL should be preferably higher (at least 60 mg/dL) because of

the positive role of protecting against CHD. However, levels below 40 mg/dL should be worrying because this level is below minimum and could be a risk because it increases chances of CHD (National Cholesterol Education Program, 2005).

The level of triglycerides may also influence chances of getting CHD. Levels of triglycerides that are higher than 200 mg/dL may pose a significant threat. In fact, such levels may require treatment.

LDL cholesterol goal based on the FRS risk

The risk of getting CHD is determined by multiple factors including cholesterol levels, lifestyle and pre-existent conditions such as diabetes (National Cholesterol Education Program, 2005). The risk of developing CHD is determined by considering the risk factors, which are scored against the scale established in the Framingham Risk Score (FRS). The FRS is made up of a number of scoring systems for determining the probability of an individual to get CHD.

The first step entails assessing the number of risk factors that an individual possesses. Each risk factor has a score and all scores from the risk factors are summed up to determine the percentage probability of getting CHD within the next 10 years. The considered risk factors include, cigarette smoking, high blood pressure, HDL levels, age, total cholesterol and family history on CHD (National Cholesterol Education Program, 2005).

In order to understand how the FRS system works tables showing computation on men's risk computation will be used below as an illustration. In the computation an ideal individual will be used. The ideal individual is male, aged 33 and he smokes cigarettes. His total cholesterol level is 205

mg/dL, his HDL level is 49 mg/dL and his systolic blood pressure is 128 and untreated. The ideal individual's risk will be determined by the tables below which show the scoring based on the individual's data. The scoring forms the second step of determining the risk level of getting CHD in a 10-year period (National Cholesterol Education Program, 2005).

10-Year Risk Estimate for Men: FRS Point Scores based on Age.

(National Cholesterol Education Program, 2005)

The individual's risk factor depending on age stands at negative -9.

FRS Scores based on Age and Total Cholesterol

(National Cholesterol Education Program, 2005)

The individual's FRS score based on total cholesterol (205 mg/dL) and age group is 7.

Framingham Point Scores by Age and Smoking Status

(National Cholesterol Education Program, 2005)

The individual's FRS score based on age and smoking habits is 8 because he smokes.

Framingham Point Scores by HDL Level

(National Cholesterol Education Program, 2005)

The individual's FRS score based on HDL level (49 mg/dL) is -1.

Framingham Point Scores by Systolic Blood Pressure and Treatment Status

(National Cholesterol Education Program, 2005)

The individual's FRS score based on systolic blood pressure (128) stands at 0.

The individual's total score from the FRS assessment based on all considered risk factors is 5.  $\{-9+7+8+ (-1) + 0 = 5\}$

10-Year CHD risk level based on the FRS scores

(National Cholesterol Education Program, 2005)

The ideal individual under review has a 2% percent risk of acquiring CHD within the next 10 years.

Step three entails determining the risk category based on pre-existent conditions or risk factors. This step entails the consideration of medical history, risk scores and risk factors. The risk category is determined according to the table below:

(National Cholesterol Education Program, 2005)

The LDL Cholesterol Goal based on the FRS Score

The solution to countering higher risk levels of CHD is by ensuring that LDL levels are as low as possible so as to reduce the risk of getting CHD (National Cholesterol Education Program, 2005). Therefore, the higher the risk on the FRS scale, the lower the LDL level should be. The LDL goals are set depending on the risk category determined for an individual using the framework highlighted above. The goals determine the level of LDL that should be maintained using a combination of diet, lifestyle and pharmacologic treatments. The basis of recommendations is based on the lower set limits of LDL highlighted in the table below.

(National Cholesterol Education Program, 2005)

In conclusion, the management of cholesterol is a significant element in controlling the risk of CHD. The management of this risk considers a number of risk factors that predispose individuals to CHD. These risk factors include medical history (genetics), age, blood pressure, good and bad cholesterol levels as well as lifestyle (smoking, physical activities). All these factors

contribute to VHD risk and they have to be considered collectively and their optimal levels attained as per FRS recommendations so as to lower CHD risk levels.

#### References

National Cholesterol Education Program (2005). High Blood cholesterol: What you need to know. Retrieved from <http://www.nhlbi.nih.gov/health/public/heart/chol/wyntk.htm>