



## **Cholesterol - New Guidelines and Treatment Protocols**

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The New Year brings new opportunities to improve our health. Many of us receive gifts which we can't use because there's too much of us -- pounds -- and too little of the gift -- inches. Many have resolved to start the new year with a new exercise program or with a new weight control program. That is good, but there are few things which will impact your health as much, both because of direct and indirect affects, than the determination to finally get your cholesterol under control.

If you don't know what your cholesterol is, make an appointment with your health care provider and find out. Make sure that you get the following information:

1. Total cholesterol
2. HDL cholesterol (high density, the good stuff)
3. LDL cholesterol (low density, the bad stuff)
4. Triglycerides

New target levels for cholesterol management have recently been published by the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). This report establishes rigorous new standards for cholesterol levels depending on the Framingham Coronary Risk Assessment. At SETMA, the Framingham Risk Assessment is computed electronically and is stored in each patient's electronic medical record. It can be viewed over time, allowing comparison of this year's results with next year's and so on. This allows the monitoring not only of the laboratory value, but also the risk assessment over time.

The cholesterol and triglycerides should be measured for anyone twenty years of age and older and measures taken to reduce elevated levels at the earliest age possible. Changing your LDL can have positive health benefits in your entire life and it is NEVER too late to start controlling the LDL.

**New guidelines for cholesterol levels are:**

LDL Cholesterol

less than 100	optimal
100-129	Near or above optimal
130-159	Borderline e high
160-189	high
greater than 190	very high

Total Cholesterol

less than 200	Desirable
200-239	Borderline high
greater than 240	high

HDL Cholesterol

less than 40	Low
greater than 60	high

In addition to the new rigorous therapeutic blood levels several new features are event in the new treatment protocol. Some of these are:

1. Raises persons with diabetes but without active coronary heart disease, most of whom have multiple risk factors, to the risk level of coronary heart disease risk equivalent.
2. Identifies persons with multiple metabolic risk factors as candidates for intensified therapeutic lifestyle changes.

The new report also recognizes the "metabolic syndrome" as a major risk factor for the premature development of coronary artery disease. The "metabolic syndrome" consists of:

Abdominal obesity  
Triglycerides above 150  
HDL cholesterol below:

Men	40
Woman	50

Systolic blood pressure greater than 130 or diastolic blood pressure greater than 85  
Fasting glucose great than 110

The presence of abdominal obesity is more highly correlated with the metabolic risk factors than is an elevated body mass index (BMI). Therefore, the simple measure of waist circumference is recommended to identify the body weight component of the metabolic syndrome. The reality is that patients who are overweight, with high blood pressure, elevated cholesterol and glucose elevation are at higher risk for the development of coronary artery disease. The reality is also that all of these problems are dealt with by the losing of weight and by the increasing of aerobic exercise, both of which are inexpensive, requiring only personal discipline.

### **Framingham Risk Score**

Risk assessment for determining the 10-year risk for developing CHD is carried out using the Framingham risk scoring for men and for women). The risk factors included in the Framingham calculation of 10-year risk are:

age,  
total cholesterol,  
HDL cholesterol,  
systolic blood pressure,  
treatment for hypertension, and  
cigarette smoking.

The first step is to calculate the number of points for each risk factor. For initial assessment, values for total cholesterol and HDL cholesterol are required. Because of a larger database, Framingham estimates are more robust for total cholesterol than for low density lipoproteins (LDL) cholesterol. However, the LDL cholesterol level remains the primary target of therapy. For calculating the risk, the following guidelines are used:

Total cholesterol and HDL cholesterol values should be the average of at least 2 measurements obtained from lipoprotein analysis.

The blood pressure value used is that obtained at the time of assessment, regardless of whether the person is on antihypertensive therapy. However, if the person is on antihypertensive treatment, an extra point is added beyond points for the blood pressure reading because treated hypertension carries residual risk. The average of several blood pressure measurements, as recommended by the Joint National Committee (JNC), is needed for an accurate measure of baseline blood pressure.

The designation "smoker" means any cigarette smoking in the past month.

The total risk score sums the points for each risk factor. The 10-year risk for myocardial infarction and coronary death (hard CHD) is estimated from total points on the Framingham assessment. Once the level of risk is determined, the LDL goal can be established.

The new guidelines recommend:

For High Risk patients an LDL below 100

For Moderate Risk patients an LDL below 130

For Normal Risk patients an LDL below 160

It must be remembered, it is the LDL which correlates with improvement of risk more than any other single element of cholesterol management.

Once your level of risk is established, a plan of treatment should be instituted. After the first visit to the doctor for cholesterol management, you should begin "lifestyle therapies." This includes:

Reduction of saturated fat (animal fat) and cholesterol intake

Moderate physical activity

Weight reduction

Possible referral to a dietician

After six weeks, the LDL should be repeated. If the LDL goal has not been achieved, the therapy should be intensified to include:

Reinforcement of the steps from visit one

Increased fiber intake

Adding Plant stanols/sterols to diet (Plant sterols and stanols reduce the absorption of cholesterol from the gut and so lower serum concentrations of cholesterol. Plant sterols or stanols that have been esterified to increase their lipid solubility can be incorporated into foods such as margarine in Finland.)

After six more weeks, the LDL should be repeated. If the LDL goal has not been achieved, drug therapy should be considered. The treatment should focus on:

Initiate therapy for metabolic syndrome

Intensify weight management and physical activity

Consider referral to a dietitian

After this third visit, the patient should be seen every four to six months for the monitoring of adherence to therapeutic lifestyle change.

The Therapeutic Lifestyle Changes Diet should have the following nutrient composition:

Saturated fats	less than 7% of total calories
Polyunsaturated fat	up to 10% of total calories
Monounsaturated fat	up to 20% of total calories
Total Fat	25-35% of total calories
Carbohydrates	50-60% of total calories
Fiber	20-30 grams

Protein	15% of total calories
Cholesterol	less than 200 mg per day
Total Calories	Balance energy intake and expenditure to maintain desirable body weight and prevent weight gain

To participate in your own care will require your learning some of the above information. Take this article with you the next time you visit your physician and ask him/her to discuss your coronary risk factors. Ask your healthcare provider to assist you in changing your life style to improve your health.

Remember, it is your life and it is your health.