

( for Adults)

<b>LIPID PROFILE, BASIC</b> <b>SERUM</b> (Spectrophotometry, Calculated)		
Cholesterol, Total	mg/dL	<200
Triglycerides	mg/dL	<150
HDL Cholesterol	mg/dL	
LDL Cholesterol	mg/dL	<100
VLDL Cholesterol	mg/dL	<30
Non HDL Cholesterol	mg/dL	<130

<b>HDL Cholesterol</b>	<b>Gender</b>
>50	Females
>40	Males

#### Interpretation

<b>NATIONAL LIPID ASSOCIATION RECOMMENDATIONS (NLA-2014)</b>	<b>TOTAL CHOLESTEROL in mg/dL</b>	<b>TRIGLYCERIDE in mg/dL</b>	<b>LDL CHOLESTEROL in mg/dL</b>	<b>NON HDL CHOLESTEROL in mg/dL</b>
Optimal	<200	<150	<100	<130
Above Optimal	-	-	100-129	130 - 159
Borderline High	200-239	150-199	130-159	160 - 189
High	>=240	200-499	160-189	190 - 219
Very High	-	>=500	>=190	>=220

#### Note:

1. Measurements in the same patient can show physiological & analytical variations. Three serial samples 1 week apart are recommended for Total Cholesterol, Triglycerides, HDL & LDL Cholesterol.
2. As per NLA-2014 guidelines, all adults above the age of 20 years should be screened for lipid status. Selective screening of children above the age of 2 years with a family history of premature cardiovascular disease or those with at least one parent with high total cholesterol is recommended.
3. Low HDL levels are associated with increased risk for Atherosclerotic Cardiovascular disease (ASCVD) due to insufficient HDL being available to participate in reverse cholesterol transport, the process by which cholesterol is eliminated from peripheral tissues.
4. NLA-2014 identifies Non HDL Cholesterol (an indicator of all atherogenic lipoproteins such as LDL, VLDL, IDL, Lp(a), Chylomicron remnants) along with LDL-cholesterol as co-primary target for

cholesterol lowering therapy. Note that major risk factors can modify treatment goals for LDL & Non HDL.

5. Apolipoprotein B is an optional, secondary lipid target for treatment once LDL & Non HDL goals have been achieved

6. Additional testing for Apolipoprotein B, hsCRP, Lp(a) & LP-PLA2 should be considered among patients with moderate risk for ASCVD for risk refinement

#### Treatment Goals as per NLA 2014

RISK CATEGORY	NON HDL CHOLESTEROL (NON HDL-C) (mg/dL)	LDL CHOLESTEROL (LDL-C)(mg/dL)	APOLIPOPROTEIN B (mg/dL)
Low/Moderate/High	<130	<100	<90
Very High	<100	<70	<80

( for Children)

LIPID PROFILE, BASIC SERUM(Spectrophotometry, Calculated)		
Cholesterol, Total	mg/dL	<170
Triglycerides	mg/dL	<150
HDL Cholesterol	mg/dL	40-60
LDL Cholesterol	mg/dL	<110
VLDL Cholesterol	mg/dL	<30
Non HDL Cholesterol	mg/dL	

#### Interpretation

NCEP RECOMMENDATIONS	TOTAL CHOLESTEROL in mg/dL	TRIGLYCERIDE in mg/dL	LDL CHOLESTEROL in mg/dL
Optimal	<170	<150	<110
Borderline High	171-199	150-199	111-129
High	>=200	200-499	>=130
Very High	-	>=500	-

#### Note:

1. Measurements in the same patient can show physiological & analytical variations. Three serial samples 1 week apart are recommended for Total Cholesterol, Triglycerides, HDL & LDL Cholesterol.

2. As per NCEP guidelines, all adults above the age of 20 years should be screened for lipid status. Selective screening of children above the age of 2 years with a family history of premature cardiovascular disease or those with at least one parent with high total cholesterol is recommended.

3. NCEP identifies elevated Triglycerides as an independent risk factor for Coronary Heart Disease (CHD).

4. Low HDL levels are associated with Coronary Heart Disease due to insufficient HDL being available to participate in reverse cholesterol transport, the process by which cholesterol is eliminated from peripheral tissues.

5. ATP III guidelines uses LDL Cholesterol as the primary target for cholesterol lowering therapy. Note that major risk factors can modify LDL goals.

### NON HDL CHOLESTEROL

RISK CATEGORY	LDL GOAL ( mg/dL)	NON HDL GOAL ( mg/dL)
CHD & CHD risk equivalent ( 10 year risk for CHD > 20 %)	< 100	< 130
Multiple ( 2+) Risk Factors and 10 year risk < or = 20%	< 130	< 160
0-1 Risk factor	< 160	<190

### Comments

1. ATP III suggested the addition of Non HDL Cholesterol (Total Cholesterol – HDL Cholesterol) as an indicator of all atherogenic lipoproteins ( mainly LDL & VLDL). The Non HDL Cholesterol is used as a secondary target of therapy in persons with triglycerides  $\geq 200$  mg/dL. The goal for Non HDL Cholesterol in those with increased triglyceride is 30 mg/dL above that set for LDL Cholesterol.
2. For calculation of CHD risk, history of smoking, any medication for hypertension & current blood pressure levels are required.