Comprehensive Cardiovascular Assessment

GENOVA DIAGNOSTICS

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Patient: **SAMPLE PATIENT**
Age:
Sex:
MRN:

CV Factors

		Optimal Range
Triglycerides	75	<= 149 mg/dL
Total Cholesterol	175	150-199 mg/dL
LDL Cholesterol	75	<= 99 mg/dL
Apo B	75	55-140 mg/dL

Independent CV Factors

		Optimal Range
Lp(a)	15	<= 32 mg/dL
Homocysteine	7.50	3.00-10.00 umol/L
hs-CRP	0.50	<= 1.00 mg/L
Fibrinogen	300.0	180.0-350.0 mg/dL

Protective Factors

		Optimal Range
HDL Cholesterol	75	>= 40 mg/dL
Apo A-1	200	110-205 mg/dL

Ratios

		Optimal Range
Total Cholesterol / HDL	2.3	1.0-4.8
Apo B / Apo A-1	0.38	0.35-1.00

Commentary

National Cholesterol Education Program Guidelines (NIH Publication No. 01-3670, May 2001)

TOTAL CHOLESTEROL LEVELS	
Less than 200 mg/dL	"Desirable" level that puts you at lower risk for heart disease. A cholesterol level of 200 mg/dL or greater increases your risk.
200 to 239 mg/dL	"Borderline High"
240 mg/dL and above	"High" blood cholesterol. A person with this level has more than twice the risk of heart disease compared to someone whose cholesterol is below 200 mg/dL.

HDL-CHOLESTEROL LEVELS	
Less than 40 mg/dL	A major risk factor for heart disease
40-59 mg/dL	The higher your HDL, the better
60 mg/dL and above	An HDL of 60 mg/dL and above is considered protective against heart disease

LDL-CHOLESTEROL LEVELS	
Less than 100 mg/dL	Optimal
100 to 129 mg/dL	Near Optimal/Above Optimal
130 to 159 mg/dL	Borderline High
160 to 189 mg/dL	High
190 mg/dL and above	Very High

TRIGLYCERIDE LEVELS	
Normal	Less than 150 mg/dL
Borderline High	150-199 mg/dL
High	200-499 mg/dL
Very High	500 mg/dL or above

Note: The HDL, LDL and Total Cholesterol categories apply to adults age 20 and above.

Commentary is provided to the practitioner for educational purposes, and should not be interpreted as diagnostic or treatment recommendations. Diagnosis and treatment decisions are the responsibility of the practitioner.

The **Triglyceride** level is WITHIN the REFERENCE range. Since triglycerides are a strong risk factor, normal levels are associated with decreased risk of cardiovascular disease and reflect a protective status of this patient's lipid and biochemical make-up.

Total **Cholesterol** is in the OPTIMAL range. This represents a beneficial, cardioprotective situation and should be maintained through diet, exercise and other means. As cholesterol has important antioxidant, structural and hormonal functions in the body, optimal levels are associated with protective effects and balanced synthesis in the liver and intestines via reasonable dietary intake and normal metabolism.

HDL cholesterol is found to be in the PROTECTIVE range. This elevated HDL reflects a degree of cardioprotection. This is due to an enhanced ability for scavenging of excess cholesterol from the cells, thus preventing accumulation in the vascular smooth muscle or endothelium. High HDL exerts a positive influence even with moderate elevations in LDL or total cholesterol levels.

Apolipoprotein A-1 is WITHIN the REFERENCE range. As a component of HDL cholesterol, Apo A-1 is associated with a protective effect regarding cardiovascular risk. Levels of this marker typically correlate with the HDL level, so

Commentary

any variation from this pattern may be of note. Normal Apo A-1 is particularly auspicious in adolescents with a family history of MI or other cardiovascular disease, as low levels have been shown to be good predictors of future risk.

Apolipoprotein B is WITHIN the REFERENCE range. Since Apo B is a key component of LDL cholesterol, normal levels denote a good dietary and metabolic control of LDL activity. Levels of this marker typically correlate with the LDL level, so any variation from this pattern may be of note. Apo B can be a good predictor of premature atherosclerotic processes, so that a normal level provides a measure of confidence that these processes are not proceeding in an accelerated manner.

LDL Cholesterol is within the OPTIMAL range. Since LDL is one of the most significant risk factors for cardiovascular disease, optimal levels are highly desirable. This normal LDL level suggests good metabolic control and efficient clearing of this lipoprotein from the circulation.

Lipoprotein(a) [Lp(a)] is WITHIN the OPTIMAL range for this individual. Low levels of Lp(a) are desirable and translate into a decreased cardiovascular risk. Genetic factors related to Lp(a) appear to be a positive influence on this person's cardiovascular profile. Lp(a) levels are generally independent of various lifestyle factors involved in cardiovascular health such as smoking, exercise, obesity, and diet. The methodology utilized for Lp(a) detection on this profile produces accurate and reproducible results. The comprehensive cardiovascular 2.0 methodology offers increased sensitivity for Lp(a) detection.

Homocysteine is WITHIN the REFERENCE range. As elevated homocysteine is a factor which increases cardiovascular risk, normal levels are highly desirable and beneficial. Continued attention to nutritional influences such as vitamin B6, B12 and folic acid will help maintain this level.

hs C-Reactive Protein (CRP) is within the reference range. hs-CRP has been shown to be a useful predictor of cardiovascular disease, indicating the presence of chronic inflammation. Normal levels of hs-CRP therefore indicate normal inflammatory processes which may otherwise influence cardiovascular risk.

Fibrinogen is WITHIN the REFERENCE range. Fibrinogen is one of the participants in the clotting process and is manufactured by the liver. As fibrinogen is associated with increased cardiovascular risk via enhancement of coagulation and increased blood viscosity, such normal levels are desirable to maintain.

The **ratio of Total Cholesterol to HDL cholesterol** is within the OPTIMAL range. This ratio is part of the larger picture relating to cardiovascular risk, and implies a measure of cardioprotective influence.

Apo B / Apo A-1 ratio is in the OPTIMAL range, suggesting cardioprotection. This ratio is regarded as an important component of cardiovascular risk, the apolipoproteins being a more refined gauge of risk than HDL & LDL levels.

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