

**Patient Details**

Ms Sample Report  
Parkgate House  
356 West Barnes Lane  
New Malden  
Surrey  
KT3 6NB

Client ID No: **IWX500220**  
Accession No:  
Patients DOB: 20/03/1975  
Sample Date:  
Date Of Report: 06/02/2009

**Practitioner Details**

Genova Diagnostics ( Europe )  
Parkgate House  
356 West Barnes Lane  
New Malden  
Surrey  
KT3 6NB

**Lipid Markers**

Analyte	Result	Reference Range
Triglycerides	0.55	<=1.69 mmol/L
Total Cholesterol	5.20 H	3.9 - 5.17 mmol/L
LDL Cholesterol	3.00 H	<=2.59 mmol/L
HDL Cholesterol	1.60	>=1.55 mmol/L

**Independent CV Factors**

Analyte	Result	Reference Range
Hb A1c	4.50	4.3 - 6.1 % of Hb
Homocysteine	4.34	3 - 10 µmol/L
hs-CRP	1.22 H	<=1.00 mg/L
Fibrinogen	8.76	5.3- 10.3 µmol/L

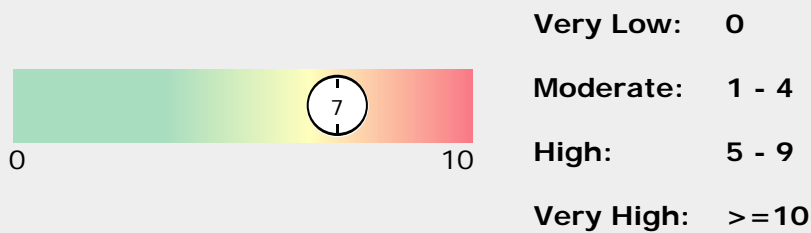
**Lipoprotein Markers**

Analyte	Result	Reference Range
Apo A-1	1.68	1.25 - 2.15 g/L
Apo B	0.91	0.55 - 1.25 g/L
Lp (a)	0.39	<=1.14 µmol/L

**Ratios**

Analyte	Result	Reference Range
Total Cholesterol / HDL	3.25	<=3.7
Triglycerides / HDL	0.79	<=3.0
Apo B / Apo A-1	0.54	0.30 - 0.90

**Cardiovascular Risk Index**



Reported By: NRA

### Commentary

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

Total Cholesterol Levels		HDL-Cholesterol Levels	
Less than 5.17 mmol/L	"Desirable" level that puts you at lower risk for heart disease. A cholesterol level of 5.17 mmol/L or greater increases your risk.	Less than 1.03 mmol/L	A major risk factor for heart disease.
5.17 to 6.18 mmol/L	"Borderline High"	1.03 to 1.54 mmol/L	The higher your HDL, the better.
6.21 mmol/L and above	"High" blood cholesterol. A person with this level has more than 2X the risk of heart disease compared to someone whose cholesterol is below 5.17 mmol/L.	1.55 mmol/L and above	An HDL of 1.55 mmol/L and above is considered protective against heart disease.
LDL-Cholesterol Levels		Triglyceride Levels	
Less than 2.59 mmol/L	Optimal	Less than 1.69 mmol/L	Normal
2.59 to 3.35 mmol/L	Near Optimal/Above Optimal	1.69 to 2.25 mmol/L	Borderline High
3.36 to 4.13 mmol/L	Borderline High	2.26 to 5.63 mmol/L	High
4.14 to 4.89 mmol/L	High	5.64 mmol/L or above	Very High
4.90 mmol/L and above	Very High	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 MODERATE risk range for this individual. Although cholesterol does have important structural and metabolic roles, levels in this range indicate a potential need for cholesterol reduction. Generally speaking, the higher the cholesterol, the higher the cardiovascular risk, particularly with younger-aged people. Exercise and dietary influences on total cholesterol are substantial and may be key areas to consider.

**HDL cholesterol** is within the DESIRABLE range. Generally acknowledged as the protective form of cholesterol, optimal HDL levels confer a degree of cardioprotection. HDL appears to act as a cholesterol "scavenger," removing it from peripheral cells and transporting it to the liver. Optimal HDL levels are beneficial even with elevated total cholesterol or LDL levels.

**LDL cholesterol** is in the MODERATE RISK range. Elevated LDL is a general indicator of increased cardiovascular risk; including MI, atherosclerotic changes and coronary arterial disease. Moderately elevated LDL levels are important to address in the context of other risk factors and may be modified via nutritional, lifestyle and pharmacological strategies.

### Commentary

**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 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.

**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.

**Highly sensitive C-reactive protein (hs-CRP)** is ABOVE the OPTIMAL range. hs-CRP is an independent risk factor for cardiovascular disease. Elevated levels of hs-CRP are associated with an increased risk of myocardial infarction and stroke, as well as in periodontal disease, systemic inflammatory diseases, and dementia. Acute elevations of hs-CRP can occur with fever, inflammation and viral or bacterial infections, so these factors should be noted at the time of sample collection. Components of chronic inflammatory processes include: IL-6 polymorphisms and chronic infections from Chlamydia pneumoniae, CMV, nanobacteria and Helicobacter pylori.

**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.

**Haemoglobin A1C or HbA1C** is WITHIN the REFERENCE range. In the blood Glucose sticks to haemoglobin to make a 'glycosylated haemoglobin' molecule. The more glucose in the blood, the more haemoglobin A1C or HbA1C will be present in the blood. Red cells live for 8 -12 weeks before they are replaced. By measuring the HbA1C it can tell you how high your blood glucose has been on average over the last 8-12 weeks.

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.

**Triglyceride–high-density lipoprotein (HDL) ratio** is WITHIN the OPTIMAL range. This is a good surrogate marker for identifying insulin resistance in overweight patients. Research has found that the higher your TG/HDL ratio, the more likely you would be to have a heart attack. How much more likely? In one study, those with the highest ratio had sixteen times the risk of those with the lowest ratio.

There are multiple factors that influence the risk of the development and the progression of cardiovascular disease. The **Cardiovascular risk index** developed by Genova Diagnostics is designed to reflect only the markers demonstrated in this profile. The number presentation on the bar graph does not reflect actual cardiac risk, this is a Relative Risk Index and is for educational purposes only.