

-.VERA DAHLSTROM
RESTORING VITALITY NATUROPATHIC
CLINIC
2 TOROKINA STREET

# CHRISTINE HALE 07-Aug-1953 Female

41 BINGIL BAY ROAD BINGIL BAY QLD 4852

LAB ID : 3988432 UR NO. : 6271472 Collection Date : 21-May-2024 Received Date: 23-May-2024



3988432

Result   Range   Units			BIOCHEMIS	STRY	
Cholesterol         6.1 *H         0.0 - 5.5         mmol/L           Triglycerides         1.1         0.0 - 2.0         mmol/L           LIPID STUDIES         HDL(Protective)         1.5         1.0 - 2.2         mmol/L           Non-HDL Cholesterol         4.62 *H         < 4.0         mmol/L           LDL(Atherogenic)         4.1 *H         0.0 - 3.4         mmol/L           Cholesterol/HDL Ratio         4.1         LDL/HDL RATIO (Risk Factor)         2.8         0.0 - 3.2           Trig/HDL Ratio         0.7         0.5 - 1.7         RATIO           Lipoprotein (a)         360 *H         0.0 - 75.0         nmol/L           LIPOSCREEN LDL Subfractions         Very Low Density Lipoprotein (VLDL)         0.6         0.1 - 0.6         mmol/L           Very Low Density Lipoprotein (VDL-1)         0.5         0.1 - 0.6         mmol/L         mmol/L           Intermediate Density Lipoprotein (IDL-2)         0.4         0.1 - 0.6         mmol/L         mmol/L           Low Density Lipoprotein (LDL-2)         1.05 *H         0.10 - 0.6         mmol/L         mmol/L           Low Density Lipoprotein (LDL-3)         0.15 *O.00 - 0.20         mmol/L         mmol/L           Low Density Lipoprotein (LDL-4)         0.05 *H         0.00 - 0.01	BLOOD - SERUM				
LIPID STUDIES  HDL(Protective)  1.5 1.0 - 2.2 mmol/L  Non-HDL Cholesterol  4.62 *H < 4.0 mmol/L  LDL(Atherogenic)  4.1 *H 0.0 - 3.4 mmol/L  Cholesterol/HDL Ratio  4.1  LDL/HDL RATIO (Risk Factor)  Lipoprotein (a)  Lipoprotein (a)  Mean Particle Size  1.1 0.0 - 2.0 mmol/L  A 0.10 - 0.80 mmol/L  mmol/L  mmol/L  mmol/L  mmol/L  mmol/L  A 0.00 - 0.00 - 0.01 mmol/L  mmol/L  Low Density Lipoprotein (LDL-3)  A 0.05 *H 0.00 - 0.01 mmol/L  mmol/L  Low Density Lipoprotein (LDL-5)  D.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-6)  D.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-7)  A 0.00 - 0.01 mmol/L  Mean Particle Size  268.0 *L > 268.0 A Agstrom	LIPIDS				
LIPID STUDIES  HDL(Protective)  Non-HDL Cholesterol  4.62 *H < 4.0 mmol/L  LDL(Atherogenic)  4.1 *H 0.0 - 3.4 mmol/L  Cholesterol/HDL Ratio  4.1  LDL/HDL RATIO (Risk Factor)  2.8 0.0 - 3.2  Trig/HDL Ratio  0.7 0.5 - 1.7 RATIO  Lipoprotein (a)  360 *H 0.0 - 75.0 mmol/L  LIPOSCREEN LDL Subfractions  Very Low Density Lipoprotein (VLDL)  Intermediate Density Lipoprotein (IDL-1)  Intermediate Density Lipoprotein (IDL-2)  Intermediate Density Lipoprotein (IDL-3)  Low Density Lipoprotein (LDL-2)  Low Density Lipoprotein (LDL-2)  Low Density Lipoprotein (LDL-2)  Low Density Lipoprotein (LDL-3)  O.15 0.00 - 0.20 mmol/L  Low Density Lipoprotein (LDL-4)  Low Density Lipoprotein (LDL-5)  Low Density Lipoprotein (LDL-5)  Low Density Lipoprotein (LDL-6)  Low Density Lipoprotein (LDL-7)  Low Density Lipoprotein (LDL-7)  Low Density Lipoprotein (LDL-7)  O.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-7)  Low Density Lipoprotein (LDL-7)  O.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-7)  O.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-7)  Angstrom	Cholesterol	6.1 *H	0.0 - 5.5	mmol/L	•
HDL(Protective)	Triglycerides	1.1	0.0 - 2.0	mmol/L	•
Non-HDL Cholesterol	LIPID STUDIES				
LDL(Atherogenic)   4.1 *H   0.0 - 3.4   mmol/L	HDL(Protective)	1.5	1.0 - 2.2	mmol/L	
Cholesterol/HDL Ratio  LDL/HDL RATIO (Risk Factor)  2.8  0.0 - 3.2  Trig/HDL Ratio  0.7  0.5 - 1.7  RATIO  Lipoprotein (a)  360 *H  0.0 - 75.0  nmol/L  LIPOSCREEN LDL Subfractions  Very Low Density Lipoprotein (VLDL)  Intermediate Density Lipoprotein (IDL-1)  Intermediate Density Lipoprotein (IDL-2)  Intermediate Density Lipoprotein (IDL-3)  Intermediate Density Lipoprotein (LDL-1)  Intermediate Density Lipoprotein (LDL-2)  Intermediate Density Lipoprotein (LDL-3)  Intermediate Density Lipoprotein (LDL-3)  Intermediate Density Lipoprotein (LDL-4)  Intermediate Density Lipoprotein (LDL-4)  Intermediate Density Lipoprotein (LDL-6)  Intermediate Density	Non-HDL Cholesterol	4.62 *H	< 4.0	mmol/L	•
LDL/HDL RATIO (Risk Factor)   2.8   0.0 - 3.2	LDL(Atherogenic)	4.1 *H	0.0 - 3.4	mmol/L	•
Trig/HDL Ratio         0.7         0.5 - 1.7         RATIO           Lipoprotein (a)         360 *H         0.0 - 75.0         nmol/L           LIPOSCREEN LDL Subfractions         Very Low Density Lipoprotein (VLDL)         0.6         0.1 - 0.6         mmol/L           Intermediate Density Lipoprotein (IDL-1)         0.5         0.1 - 0.6         mmol/L           Intermediate Density Lipoprotein (IDL-2)         0.4         0.1 - 0.4         mmol/L           Intermediate Density Lipoprotein (IDL-3)         0.6         0.1 - 0.6         mmol/L           Low Density Lipoprotein (LDL-1)         1.46         0.10 - 1.50         mmol/L           Low Density Lipoprotein (LDL-2)         1.05 *H         0.10 - 0.80         mmol/L           Low Density Lipoprotein (LDL-3)         0.15         0.00 - 0.20         mmol/L           Low Density Lipoprotein (LDL-4)         0.05 *H         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-5)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-6)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Cholesterol/HDL Ratio	4.1			
Lipoprotein (a) 360 *H 0.0 - 75.0 nmol/L  LIPOSCREEN LDL Subfractions  Very Low Density Lipoprotein (VLDL) 0.6 0.1 - 0.6 mmol/L  Intermediate Density Lipoprotein (IDL-1) 0.5 0.1 - 0.6 mmol/L  Intermediate Density Lipoprotein (IDL-2) 0.4 0.1 - 0.4 mmol/L  Intermediate Density Lipoprotein (IDL-3) 0.6 0.1 - 0.6 mmol/L  Low Density Lipoprotein (LDL-1) 1.46 0.10 - 1.50 mmol/L  Low Density Lipoprotein (LDL-2) 1.05 *H 0.10 - 0.80 mmol/L  Low Density Lipoprotein (LDL-3) 0.15 0.00 - 0.20 mmol/L  Low Density Lipoprotein (LDL-4) 0.05 *H 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-5) 0.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-6) 0.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-7) 0.00 0.00 - 0.01 mmol/L  Mean Particle Size 268.0 *L > 268.0 Angstrom	LDL/HDL RATIO (Risk Factor)	2.8	0.0 - 3.2		•
Very Low Density Lipoprotein (VLDL)  Intermediate Density Lipoprotein (IDL-1)  Intermediate Density Lipoprotein (IDL-2)  Intermediate Density Lipoprotein (IDL-3)  Intermediate Density Lipoprotein (I	Trig/HDL Ratio	0.7	0.5 - 1.7	RATIO	•
Very Low Density Lipoprotein (VLDL)         0.6         0.1 - 0.6         mmol/L           Intermediate Density Lipoprotein (IDL-1)         0.5         0.1 - 0.6         mmol/L           Intermediate Density Lipoprotein (IDL-2)         0.4         0.1 - 0.4         mmol/L           Intermediate Density Lipoprotein (IDL-3)         0.6         0.1 - 0.6         mmol/L           Low Density Lipoprotein (LDL-1)         1.46         0.10 - 1.50         mmol/L           Low Density Lipoprotein (LDL-2)         1.05 *H         0.10 - 0.80         mmol/L           Low Density Lipoprotein (LDL-3)         0.15         0.00 - 0.20         mmol/L           Low Density Lipoprotein (LDL-4)         0.05 *H         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-5)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-6)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-7)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Lipoprotein (a)	360 *H	0.0 - 75.0	nmol/L	•
Intermediate Density Lipoprotein (IDL-1)	LIPOSCREEN LDL Subfractions				
Intermediate Density Lipoprotein (IDL-2) 0.4 0.1 - 0.4 mmol/L  Intermediate Density Lipoprotein (IDL-3) 0.6 0.1 - 0.6 mmol/L  Low Density Lipoprotein (LDL-1) 1.46 0.10 - 1.50 mmol/L  Low Density Lipoprotein (LDL-2) 1.05 *H 0.10 - 0.80 mmol/L  Low Density Lipoprotein (LDL-3) 0.15 0.00 - 0.20 mmol/L  Low Density Lipoprotein (LDL-4) 0.05 *H 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-5) 0.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-6) 0.00 0.00 - 0.01 mmol/L  Low Density Lipoprotein (LDL-7) 0.00 0.00 - 0.01 mmol/L  Mean Particle Size 268.0 *L > 268.0 Angstrom	Very Low Density Lipoprotein (VLDL)	0.6	0.1 - 0.6	mmol/L	•
Intermediate Density Lipoprotein (IDL-3)	Intermediate Density Lipoprotein (IDL-	1) 0.5	0.1 - 0.6	mmol/L	
Low Density Lipoprotein (LDL-1)  Low Density Lipoprotein (LDL-2)  Low Density Lipoprotein (LDL-3)  Low Density Lipoprotein (LDL-3)  Low Density Lipoprotein (LDL-4)  Low Density Lipoprotein (LDL-4)  Low Density Lipoprotein (LDL-5)  Low Density Lipoprotein (LDL-6)  Low Density Lipoprotein (LDL-6)  Low Density Lipoprotein (LDL-7)  Low Density Lipoprotein (LDL-7)  Low Density Lipoprotein (LDL-7)  Mean Particle Size  1.46  0.10 - 1.50  mmol/L  mmol/L  mmol/L  mmol/L  mmol/L  mmol/L  Angstrom	Intermediate Density Lipoprotein (IDL-	·2) 0.4	0.1 - 0.4	mmol/L	•
Low Density Lipoprotein (LDL-2)         1.05 *H         0.10 - 0.80         mmol/L           Low Density Lipoprotein (LDL-3)         0.15         0.00 - 0.20         mmol/L           Low Density Lipoprotein (LDL-4)         0.05 *H         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-5)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-6)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-7)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Intermediate Density Lipoprotein (IDL-	· <b>3</b> ) 0.6	0.1 - 0.6	mmol/L	•
Low Density Lipoprotein (LDL-3)       0.15       0.00 - 0.20       mmol/L         Low Density Lipoprotein (LDL-4)       0.05 *H       0.00 - 0.01       mmol/L         Low Density Lipoprotein (LDL-5)       0.00       0.00 - 0.01       mmol/L         Low Density Lipoprotein (LDL-6)       0.00       0.00 - 0.01       mmol/L         Low Density Lipoprotein (LDL-7)       0.00       0.00 - 0.01       mmol/L         Mean Particle Size       268.0 *L       > 268.0       Angstrom	Low Density Lipoprotein (LDL-1)	1.46	0.10 - 1.50	mmol/L	•
Low Density Lipoprotein (LDL-4)         0.05 *H         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-5)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-6)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-7)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Low Density Lipoprotein (LDL-2)	1.05 *H	0.10 - 0.80	mmol/L	•
Low Density Lipoprotein (LDL-5)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-6)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-7)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Low Density Lipoprotein (LDL-3)	0.15	0.00 - 0.20	mmol/L	•
Low Density Lipoprotein (LDL-6)         0.00         0.00 - 0.01         mmol/L           Low Density Lipoprotein (LDL-7)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Low Density Lipoprotein (LDL-4)	0.05 *H	0.00 - 0.01	mmol/L	
Low Density Lipoprotein (LDL-7)         0.00         0.00 - 0.01         mmol/L           Mean Particle Size         268.0 *L         > 268.0         Angstrom	Low Density Lipoprotein (LDL-5)	0.00	0.00 - 0.01	mmol/L	
Mean Particle Size 268.0 *L > 268.0 Angstrom   ●	Low Density Lipoprotein (LDL-6)	0.00	0.00 - 0.01	mmol/L	
	Low Density Lipoprotein (LDL-7)	0.00	0.00 - 0.01	mmol/L	
LDL Phenotype Pattern Type A- Normal	Mean Particle Size	268.0 *L	> 268.0	Angstrom	•
	LDL Phenotype Pattern Ty	pe A- Nor	mal		



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#### **LIPOSCREEN Comments**

#### RESULT INTERPRETATION

The Liposcreen LDL Subractions test provides a superior indicator for Coronary Artery Disease (CAD) risk than other conventionally available lipid profiles.

Many individuals with normal LDL and HDL cholesterol levels remain at risk from CAD as these conventional tests do not convey the detail of the CAD risk. Liposcreen additionally quantifies the different subfractions.

Liposcreen clearly identifies a patient's LDL phenotype profile;

This patient has a profile indicative of Type A, which is deemed normal.

However, please note the presence of small dense LDLs (LDL3 and LDL4).

Please note the raised Lipoprotein (a) levels.

Also of note is the borderline LDL Mean Particle size of 268 Angstrom, which may indicate the presence of LDLs of a size capable of penetrating the endothelial lining and causing the development of atheromatous plaques.

#### Lipoprotein Pattern Characteristics:

(Patient may have some or all of these present)

Type A Deemed a normal profile.

Predominance of large/buoyant (less atherogenic) LDL

subclasses ( LDL 1 and 2).

Mean Particle Size of > 263 Angstrom (A).

Elevated Cholesterol, Normal Triglycerides, Elevated Apo B

Type B Deemed an ABNORMAL profile.

Predominance of small/dense (more atherogenic) LDL

subclasses (LDL3, 4, 5, 6, 7).

Mean Particle Size of < 258 Angstrom (A).

Raised Cholesterol, Raised Triglycerides, Raised VLDL, Low HDLC

This profile is the designated atherogenic lipoprotein

phenotype, consistent with an increased risk of CAD. It is also It is also characteristically prevalent in insulin-resistant states such as Metabolic Syndrome and Type 2 Diabetes mellitus.

Follow up Liposcreen testing, for this patient, is recommended in 12 months.



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#### **Lipid Profile Comment**

Target Levels for the general population and the National Vascular Disease Prevention Alliance (NVDPA) treatment target levels for high-risk people (known coronary heart and other arterial diseases, diabetes, chronic renal failure, Aboriginal and Torres Strait Islander peoples and familial hyperlipidaemic conditions) are:

Tot. Cholesterol LDL-Cholesterol HDL-Cholesterol

General population: <5.5 mmol/L <3.0 mmol/L M: >=1.0, F: >=1.0 mmol/L

At risk individuals: <4.0 mmol/L <2.5 mmol/L

At risk:

Fasting Triglycerides: <2.0 mmol/L Non-HDL Cholesterol: <3.3 mmol/L

National guidelines generally specify specific targets, refer to www.cvdcheck.org.au

#### CHOLESTEROL ELEVATED:

Elevated levels are associated with an increased risk of coronary artery disease in all age groups. The cause may be primary (familial hypercholesterolaemia and other genetic disorders) or secondary (associated with e.g., biliary obstruction, hypothyroidism, nephrotic syndrome).

#### **ELEVATED LDL-CHOLESTEROL:**

LDL Cholesterol >6.5 mmol/L indicates an Increased risk of Familial Hypercholesterolaemia.

A LDL Subfractions test may be considered in patients with intermediate risk and/or when there appears to be discordance between clinical presentation and lipid measurements.

#### ELEVATED NON-HDL CHOLESTEROL LEVEL:

Non-HDL cholesterol surpasses LDL cholesterol as a risk factor for CVD. Increased non-HDL Cholesterol is a significant marker for subclinical atherosclerosis.

Non-HDL Cholesterol >7.5mmol/L indicates an Increased risk of Familial Hypercholesterolaemia.

### LIPOPROTEIN(a) ELEVATED:

Consists of an LDL bound to Apolipoprotein component. Causes atherothrombogenesis and strongly associated with peripheral and coronary events.

#### Consider the following possible causes:

Genetic predisposition, Excessive intake of partially hydrogenated oils/fats, low-fibre, low vegetable-based diet, Hypothyroidism, Post-Menopausal elevation, Diabetes, particularly with central obesity, Chronic renal insufficiency, Simvistatin Therapy, Compounded likelihood of CVD if also high LDL and/or total Cholesterol.

### Consider the following actions:

Aerobic Exercise, Dietary modification, 1 g TID Niacin OR inositol hexaniacinate (non-flush if availalable), CoQ10, L-lysine, proline, HRT if indicated, Magnesium,



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Coronary vasodilator therapy - as elevated Lp(a) may impair normal vasodilation mechanisms.

Vitamin C, L-Lysine and Vitamin E are also beneficial.

Increased HDL levels appear to reduce the threat posed by high levels of Lp(a).

#### Lp(a) COMMENT:

For Lp(a) levels > 75 nmol/L the relative risk of MI is 1.75 compared to patients with Lp(a) below this level. Lp(a) is an acute phase reactant and the level is elevated in acute illness.

### SPECIMEN RECEPTION

BLOOD - SERUM Result Range **Test Verification** 

PLEASE NOTE:

The results for this episode that are out of range have been verified through repeat testing of the specimen.

Tests ordered: BioPEI,CFee,FATS,GOG135,LIP,LIPOSCRN,VERIF