

L38 - MR. DEEPAK PAINULY - FPSC CANAL  
ROAD  
55/30, CANAL ROAD, NEAR SHURBHI  
ENCLAVE  
DEHARDUN

Name	: Mr. DAVINDER SINGH	Collected	: 14/2/2022 9:31:00AM
Lab No.	: 327969412	Age: 54 Years	Gender: Male
A/c Status	: P	Ref By : Dr. SELF	Report Status : Interim
		Received	: 14/2/2022 9:47:22AM
		Reported	: 15/2/2022 10:58:16AM

Test Name	Results	Units	Bio. Ref. Interval
Swasthfit Total - Heart Check			
COMPLETE BLOOD COUNT;CBC (Electrical Impedance & Flow)			
Hemoglobin	15.00	g/dL	13.00 - 17.00
Packed Cell Volume (PCV)	47.20	%	40.00 - 50.00
RBC Count	5.35	mill/mm3	4.50 - 5.50
MCV	88.20	fL	83.00 - 101.00
MCH	28.00	pg	27.00 - 32.00
MCHC	31.80	g/dL	31.50 - 34.50
Red Cell Distribution Width (RDW)	13.80	%	11.60 - 14.00
Total Leukocyte Count (TLC)	7.34	thou/mm3	4.00 - 10.00
Differential Leucocyte Count (DLC)			
Segmented Neutrophils	62.50	%	40.00 - 80.00
Lymphocytes	28.20	%	20.00 - 40.00
Monocytes	6.10	%	2.00 - 10.00
Eosinophils	2.50	%	1.00 - 6.00
Basophils	0.70	%	<2.00
Absolute Leucocyte Count			
Neutrophils	4.59	thou/mm3	2.00 - 7.00
Lymphocytes	2.07	thou/mm3	1.00 - 3.00
Monocytes	0.45	thou/mm3	0.20 - 1.00
Eosinophils	0.18	thou/mm3	0.02 - 0.50
Basophils	0.05	thou/mm3	0.02 - 0.10
Platelet Count	159.0	thou/mm3	150.00 - 410.00
Mean Platelet Volume	11.8	fL	6.5 - 12.0

Note



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Test Name	Results	Units	Bio. Ref. Interval
1. As per the recommendation of International council for Standardization in Hematology, the differential leucocyte counts are additionally being reported as absolute numbers of each cell in per unit volume of blood			
2. Test conducted on EDTA whole blood			



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Test Name	Results	Units	Bio. Ref. Interval
LIVER & KIDNEY PANEL, SERUM			
Bilirubin Total (DPD)	0.58	mg/dL	0.30 - 1.20
Bilirubin Direct (DPD)	0.16	mg/dL	<0.30
Bilirubin Indirect (Calculated)	0.42	mg/dL	<1.10
AST (SGOT) (IFCC without P5P)	30	U/L	<50
ALT (SGPT) (IFCC without P5P)	41	U/L	<50
GGTP (GCNA)	20	U/L	<55
Alkaline Phosphatase (ALP) (PNPP)	107	U/L	30 - 120
Total Protein (Biuret)	7.84	g/dL	6.40 - 8.30
Albumin (BCG)	4.62	g/dL	3.50 - 5.20
A : G Ratio (Calculated)	1.43		0.90 - 2.00
Urea (Urease UV)	27.10	mg/dL	17.00 - 43.00
Creatinine (Modified Jaffe)	0.77	mg/dL	0.67 - 1.17
Uric Acid (Uricase)	5.03	mg/dL	3.50 - 7.20



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Test Name	Results	Units	Bio. Ref. Interval
Calcium, Total (Arsenazo III)	10.00	mg/dL	8.80 - 10.60
Phosphorus (Molybdate UV)	3.83	mg/dL	2.40 - 4.40
Sodium (Indirect ISE)	136.10	mEq/L	136.00 - 146.00
Potassium (Indirect ISE)	4.58	mEq/L	3.50 - 5.10
Chloride (Indirect ISE)	101.30	mEq/L	101.00 - 109.00



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Test Name	Results	Units	Bio. Ref. Interval
HbA1c (GLYCOSYLATED HEMOGLOBIN), BLOOD (HPLC)			
HbA1c	6.2	%	4.00 - 5.60
Estimated average glucose (eAG)	131	mg/dL	

**Interpretation**  
HbA1c result is suggestive of at risk for Diabetes (Prediabetes)/ well controlled Diabetes in a known Diabetic

**Note:** Presence of Hemoglobin variants and/or conditions that affect red cell turnover must be considered, particularly when the HbA1C result does not correlate with the patient's blood glucose levels.

FACTORS THAT INTERFERE WITH HbA1C MEASUREMENT	FACTORS THAT AFFECT INTERPRETATION OF HbA1C RESULTS
Hemoglobin variants,elevated fetal hemoglobin (HbF) and chemically modified derivatives of hemoglobin (e.g. carbamylated Hb in patients with renal failure) can affect the accuracy of HbA1c measurements	Any condition that shortens erythrocyte survival or decreases mean erythrocyte age (e.g.,recovery from acute blood loss, hemolytic anemia, HbSS, HbCC, and HbSC) will falsely lower HbA1c test results regardless of the assay method used.Iron deficiency anemia is associated with higher HbA1c





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Test Name	Results	Units	Bio. Ref. Interval
GLUCOSE, FASTING (F), PLASMA (Hexokinase)	91.00	mg/dL	70.00 - 100.00
<b>APOLIPOPROTEINS A1 &amp; B, SERUM**</b> (Immunoturbidimetry)			
Apolipoprotein (Apo A1)**	110	mg/dL	105.00 - 175.00
Apolipoprotein (Apo B)**	60	mg/dL	60.00 - 140.00
Apo B / Apo A1 Ratio**	0.55		0.35 - 0.98

**Comments**

Apolipoprotein B is a more powerful independent predictor of Coronary Heart Disease (CAD) than LDL Cholesterol. It is useful in assessing the risk of CAD and to classify Hyperlipidemias. Apolipoprotein studies help in monitoring coronary bypass surgery patients with regard to risk and severity of re-stenosis. They are also useful in assessing risk of re-infarction in patients of Myocardial infarction.

Apolipoprotein A1 is one of the apoproteins of high density lipoproteins (HDL) which is inversely related to the risk of CAD. Individuals with Tangier disease have < 1% of normal Apo A1. Levels <90mg/dL indicate increased risk of Atherosclerotic disease.

As per recommendations of National Cholesterol Education Program (NCEP) the clinical significance of results is as follows:

**Apolipoprotein B**

RESULT IN mg/dL	REMARKS
<23	Abetalipoproteinemia/Hypobetalipoproteinemia
23-45	Hypobetalipoproteinemia
46-135	Normal
>135	Hyperapobetalipoproteinemia/Increased CAD risk

**Apo B to A1 Ratio**

RATIO	REMARKS
0.35-0.98	Desirable
>0.98	Increased CAD risk



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Test Name	Results	Units	Bio. Ref. Interval
VITAMIN B12; CYANOCOBALAMIN, SERUM (ECLIA)	673.10	pg/mL	211.00 - 946.00

#### Notes

1. Interpretation of the result should be considered in relation to clinical circumstances.
2. It is recommended to consider supplementary testing with plasma Methylmalonic acid (MMA) or plasma homocysteine levels to determine biochemical cobalamin deficiency in presence of clinical suspicion of deficiency but indeterminate levels. Homocysteine levels are more sensitive but MMA is more specific
3. False increase in Vitamin B12 levels may be observed in patients with intrinsic factor blocking antibodies, MMA measurement should be considered in such patients
4. The concentration of Vitamin B12 obtained with different assay methods cannot be used interchangeably due to differences in assay methods and reagent specificity

VITAMIN D, 25 - HYDROXY, SERUM (ECLIA)	87.36	nmol/L	75.00 - 250.00
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#### Interpretation

LEVEL	REFERENCE RANGE IN nmol/L	COMMENTS
Deficient	< 50	High risk for developing bone disease
Insufficient	50-74	Vitamin D concentration which normalizes Parathyroid hormone concentration
Sufficient	75-250	Optimal concentration for maximal health benefit
Potential intoxication	>250	High risk for toxic effects

#### Note

- The assay measures both D2 (Ergocalciferol) and D3 (Cholecalciferol) metabolites of vitamin D.
- 25 (OH)D is influenced by sunlight, latitude, skin pigmentation, sunscreen use and hepatic function.
- Optimal calcium absorption requires vitamin D 25 (OH) levels exceeding 75 nmol/L.



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Test Name	Results	Units	Bio. Ref. Interval
	<ul style="list-style-type: none"> <li>It shows seasonal variation, with values being 40-50% lower in winter than in summer.</li> <li>Levels vary with age and are increased in pregnancy.</li> <li>A new test Vitamin D, Ultrasensitive by LC-MS/MS is also available</li> </ul>		

### Comments

Vitamin D promotes absorption of calcium and phosphorus and mineralization of bones and teeth. Deficiency in children causes Rickets and in adults leads to Osteomalacia. It can also lead to Hypocalcemia and Tetany. Vitamin D status is best determined by measurement of 25 hydroxy vitamin D, as it is the major circulating form and has longer half life (2-3 weeks) than 1,25 Dihydroxy vitamin D (5-8 hrs).

### Decreased Levels

- Inadequate exposure to sunlight
- Dietary deficiency
- Vitamin D malabsorption
- Severe Hepatocellular disease
- Drugs like Anticonvulsants
- Nephrotic syndrome

### Increased levels

Vitamin D intoxication





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Test Name	Results	Units	Bio. Ref. Interval
<b>THYROID PROFILE,TOTAL, SERUM (ECLIA)</b>			
T3, Total	1.10	ng/mL	0.80 - 2.00
T4, Total	6.34	µg/dL	5.10 - 14.10
TSH	2.27	µIU/mL	0.27 - 4.20

#### Note

1. TSH levels are subject to circadian variation, reaching peak levels between 2 - 4.a.m. and at a minimum between 6-10 pm . The variation is of the order of 50% . hence time of the day has influence on the measured serum TSH concentrations.
2. Alteration in concentration of Thyroid hormone binding protein can profoundly affect Total T3 and/or Total T4 levels especially in pregnancy and in patients on steroid therapy.
3. Unbound fraction ( Free,T4 /Free,T3) of thyroid hormone is biologically active form and correlate more closely with clinical status of the patient than total T4/T3 concentration
4. Values <0.03 uIU/mL need to be clinically correlated due to presence of a rare TSH variant in some individuals



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Test Name	Results	Units	Bio. Ref. Interval
<b>LIPID SCREEN, SERUM</b> (Spectrophotometry)			
Cholesterol, Total	122.00	mg/dL	<200.00
Triglycerides	90.00	mg/dL	<150.00
HDL Cholesterol	44.50	mg/dL	>40.00
LDL Cholesterol, Calculated	59.50	mg/dL	<100.00
VLDL Cholesterol, Calculated	18.00	mg/dL	<30.00
Non-HDL Cholesterol	78	mg/dL	<130

#### Interpretation

REMARKS	TOTAL CHOLESTEROL in mg/dL	TRIGLYCERIDE in mg/dL	LDL CHOLESTEROL in mg/dL	NON HDL CHOLESTEROL in mg/dL
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

- 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.
- NLA-2014 recommends a complete lipoprotein profile as the initial test for evaluating cholesterol.
- Friedewald equation to calculate LDL cholesterol is most accurate when Triglyceride level is < 400 mg/dL. Measurement of Direct LDL cholesterol is recommended when Triglyceride level is > 400 mg/dL



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4. NLA-2014 identifies Non HDL Cholesterol(an indicator of all atherogeniclipoproteins such as LDL , VLDL, IDL, Lpa, 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 Lipid Association of India 2016

RISK CATEGORY	TREATMENT GOAL		CONSIDER THERAPY	
	LDL CHOLESTEROL (LDL-C) (mg/dL)	NON HDL CHLOESTEROL (NON HDL-C) (mg/dL)	LDL CHOLESTEROL (LDL-C) (mg/dL)	NON HDL CHLOESTEROL (NON HDL-C) (mg/dL)
Very High	<50	<80	>=50	>=80
High	<70	<100	>=70	>=100
Moderate	<100	<130	>=100	>=130
Low	<100	<130	>=130*	>=160*

\*In low risk patient, consider therapy after an initial non-pharmacological intervention for at least 3 months



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Result/s to follow:  
CARDIO C-REACTIVE PROTEIN (hsCRP), SERUM

\*\* Test conducted under NABL scope MC-2113,LPL-NATIONAL REFERENCE LAB at NEW DELHI

IMPORTANT INSTRUCTIONS

•Test results released pertain to the specimen submitted. •All test results are dependent on the quality of the sample received by the Laboratory.

•Laboratory investigations are only a tool to facilitate in arriving at a diagnosis and should be clinically correlated by the Referring Physician. •Sample repeats are accepted on request of Referring Physician within 7 days post reporting. •Report delivery may be delayed due to unforeseen circumstances. Inconvenience is regretted. •Certain tests may require further testing at additional cost for derivation of exact value. Kindly submit request within 72 hours post reporting. •Test results may show interlaboratory variations. •The Courts/Forum at Delhi shall have exclusive jurisdiction in all disputes/claims concerning the test(s) & or results of test(s). •Test results are not valid for medico legal purposes.

•Contact customer care Tel No. +91-11-39885050 for all queries related to test results.

(#) Sample drawn from outside source.

