

Name	: DUMMY	Age	: 30 Years
Lab No.	: 439854467	Gender	: Male
Ref By	: U	Reported	: 16/5/2023 1:36:25PM
Collected	: 14/5/2023 11:03:00AM	Report Status	: Final
A/c Status	: P	Processed at	: LPL-NATIONAL REFERENCE LAB
Collected at	: LPL-ROHINI (NATIONAL REFERENCE LAB) National Reference laboratory, Block E, Sector 18, ROHINI DELHI 110085		: National Reference laboratory, Block E, Sector 18, Rohini, New Delhi -110085



Test Report

Test Name	Results	Units	Bio. Ref. Interval
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SwasthFit Super 4

COMPLETE BLOOD COUNT;CBC

Hemoglobin (Photometry)	15.00	g/dL	13.00 - 17.00
Packed Cell Volume (PCV) (Calculated)	45.00	%	40.00 - 50.00
RBC Count (Electrical Impedence)	4.50	mill/mm3	4.50 - 5.50
MCV (Electrical Impedence)	90.00	fL	83.00 - 101.00
MCH (Calculated)	32.00	pg	27.00 - 32.00
MCHC (Calculated)	33.00	g/dL	31.50 - 34.50
Red Cell Distribution Width (RDW) (Electrical Impedence)	14.00	%	11.60 - 14.00
Total Leukocyte Count (TLC) (Electrical Impedence)	8.00	thou/mm3	4.00 - 10.00
Differential Leucocyte Count (DLC) (VCS Technology)			
Segmented Neutrophils	60.00	%	40.00 - 80.00
Lymphocytes	30.00	%	20.00 - 40.00
Monocytes	5.00	%	2.00 - 10.00
Eosinophils	5.00	%	1.00 - 6.00
Basophils	0.00	%	<2.00
Absolute Leucocyte Count (Calculated)			
Neutrophils	4.80	thou/mm3	2.00 - 7.00
Lymphocytes	2.40	thou/mm3	1.00 - 3.00
Monocytes	0.40	thou/mm3	0.20 - 1.00
Eosinophils	0.40	thou/mm3	0.02 - 0.50
Basophils	0.00	thou/mm3	0.02 - 0.10
Platelet Count (Electrical impedence)	200	thou/mm3	150.00 - 410.00
Mean Platelet Volume (Electrical Impedence)	10.0	fL	6.5 - 12.0



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Note

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			
Creatinine (Modified Jaffe,Kinetic)	0.90	mg/dL	0.70 - 1.30
GFR Estimated (CKD EPI Equation 2021)	118	mL/min/1.73m2	>59
GFR Category (KDIGO Guideline 2012)	G1		
Urea (Urease UV)	20.00	mg/dL	13.00 - 43.00
Urea Nitrogen Blood (Calculated)	9.34	mg/dL	6.00 - 20.00
BUN/Creatinine Ratio (Calculated)	10		
Uric Acid (Uricase)	5.00	mg/dL	3.50 - 7.20
AST (SGOT) (IFCC without P5P)	11.0	U/L	15.00 - 40.00
ALT (SGPT) (IFCC without P5P)	21.0	U/L	10.00 - 49.00
GGTP (IFCC)	11.0	U/L	0 - 73
Alkaline Phosphatase (ALP) (IFCC-AMP)	150.00	U/L	30.00 - 120.00
Bilirubin Total (Oxidation)	0.20	mg/dL	0.30 - 1.20
Bilirubin Direct (Oxidation)	0.10	mg/dL	<0.3
Bilirubin Indirect (Calculated)	0.10	mg/dL	<1.10
Total Protein (Biuret)	7.00	g/dL	5.70 - 8.20
Albumin (BCG)	4.00	g/dL	3.20 - 4.80
A : G Ratio (Calculated)	1.33		0.90 - 2.00
Globulin(Calculated)	3.00	gm/dL	2.0 - 3.5
Calcium, Total (Arsenazo III)	8.00	mg/dL	8.70 - 10.40



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Test Name	Results	Units	Bio. Ref. Interval
Phosphorus (Molybdate UV)	4.00	mg/dL	2.40 - 5.10
Sodium (Indirect ISE)	140.00	mEq/L	136.00 - 145.00
Potassium (Indirect ISE)	5.00	mEq/L	3.50 - 5.10
Chloride (Indirect ISE)	101.00	mEq/L	98.00 - 107.00

Note

- Estimated GFR (eGFR) calculated using the 2021 CKD-EPI creatinine equation and GFR Category reported as per KDIGO guideline 2012.
- eGFR category G1 or G2 does not fulfil the criteria for CKD, in the absence of evidence of kidney damage
- The BUN-to-creatinine ratio is used to differentiate prerenal and postrenal azotemia from renal azotemia. Because of considerable variability, it should be used only as a rough guide. Normally, the BUN/creatinine ratio is about 10:1

LIPID SCREEN, SERUM

Cholesterol, Total (CHO-POD)	105.00	mg/dL	<200.00
Triglycerides (GPO-POD)	130.00	mg/dL	<150.00
HDL Cholesterol (Enzymatic Immunoinhibition)	46.00	mg/dL	>40.00
LDL Cholesterol, Calculated (Calculated)	33.00	mg/dL	<100.00
VLDL Cholesterol, Calculated (Calculated)	26.00	mg/dL	<30.00
Non-HDL Cholesterol (Calculated)	59	mg/dL	<130

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.
- 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
- Lipid Association of India (LAI) recommends screening of all adults above the age of 20 years for



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Test Name	Results	Units	Bio. Ref. Interval
Atherosclerotic Cardiovascular Disease (ASCVD) risk factors especially lipid profile. This should be done earlier if there is family history of premature heart disease, dyslipidemia, obesity or other risk factors			
4.	Indians tend to have higher triglyceride levels & Lower HDL cholesterol combined with small dense LDL particles, a pattern known as atherogenic dyslipidemia		
5.	Non HDL Cholesterol comprises the cholesterol carried by all atherogenic particles, including LDL, IDL, VLDL & VLDL remnants, Chylomicron remnants & Lp(a)		
6.	LAI recommends LDL cholesterol as primary target and Non HDL cholesterol as co-primary treatment target		
7.	Apolipoprotein B is an, secondary lipid target for treatment once LDL & Non HDL goals have been achieved		
8.	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 2020

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)
Extreme Risk Group Category A	<50 (Optional goal ≤30)	<80 (Optional goal ≤60)	≥50	≥80
Extreme Risk Group Category A	≤30	≤60	>30	>60
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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Test Name	Results	Units	Bio. Ref. Interval
HbA1c (GLYCOSYLATED HEMOGLOBIN), BLOOD (HPLC, NGSP certified)			
HbA1c	5.3	%	4.00 - 5.60
Estimated average glucose (eAG)	105	mg/dL	

Interpretation

HbA1c result is suggestive of non diabetic adults (≥ 18 years)/ well controlled Diabetes in a known Diabetic

Interpretation as per American Diabetes Association (ADA) Guidelines

Reference Group	Non diabetic adults ≥ 18 years	At risk (Prediabetes)	Diagnosing Diabetes	Therapeutic goals for glycemic control
HbA1c in %	4.0-5.6	5.7-6.4	≥ 6.5	< 7.0

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 (GOD POD)			
Glucose Fasting	90.00	mg/dL	70 - 100

THYROID PROFILE,TOTAL, SERUM (CLIA)			
T3, Total	2.00	ng/mL	0.60 - 1.81
T4, Total	4.00	µg/dL	5.01 - 12.45
TSH	4.00	µIU/mL	0.550 - 4.780

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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VITAMIN B12; CYANOCOBALAMIN, SERUM (CLIA)	280.00	pg/mL	211.00 - 911.00

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 (CLIA)	85.00	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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<ul style="list-style-type: none"> It shows seasonal variation, with values being 40-50% lower in winter than in summer. Levels vary with age and are increased in pregnancy. A new test Vitamin D, Ultrasensitive by LC-MS/MS is also available 			

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

