

Patient Name : SRAJAN GARG
Age/Gender : 28 Years/M
UHID/MR No : LSHHI2906640
Visit ID : 022502010066
Ref By : Dr.SELF
IP/OP NO :

Collected : 01/Feb/2025 11:13AM
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Status : Final Report
Panel Name : CASH (DC)
Barcode : 0200029669



DEPARTMENT OF CLINICAL BIOCHEMISTRY & IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
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HbA1c GLYCOSYLATED HEMOGLOBIN , EDTA WHOLE BLOOD (HPLC - ION-EXCHANGE)

HbA1c	5.1	%	
ESTIMATED AVERAGE GLUCOSE	99.67	mg/dL	
Calculated			

Comment:

As per American Diabetes Association (ADA)	
Reference Group	HbA1c in %
Non diabetic adults ≥ 18 years	< 5.7
At risk (Prediabetes)	$5.7 - 6.4$
Diagnosing Diabetes	≥ 6.5
Therapeutic goals for glycemic control	Age > 19 years Goal of therapy: < 7.0 Action suggested: > 8.0 Age < 19 years Goal of therapy: < 7.5

Note:

1. Since HbA1c reflects long term fluctuations in the blood glucose concentration, a diabetic patient who is recently under good control may still have a high concentration of HbA1c. Converse is true for a diabetic previously under good control but now poorly controlled.

2. Target goals of < 7.0 % may be beneficial in patients with short duration of diabetes, long life expectancy and no significant cardiovascular disease. In patients with significant complications of diabetes, limited life expectancy or extensive co-morbid conditions, targeting a goal of < 7.0 % may not be appropriate.

HbA1c provides an index of average blood glucose levels over the past 8 - 12 weeks and is a much better indicator of long term glycemic control as compared to blood and urinary glucose determinations.

ADA criteria for correlation between HbA1c & Mean plasma glucose levels	
HbA1c(%)	Mean Plasma Glucose (mg/dL)
6	126
7	154
8	183
9	212
10	240
11	269
12	298



Dr. Naincy Neha
 Consultant Pathologist
 M.B.B.S. D.N.B.(Pathology)
 DMC NO.: 110853

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DEPARTMENT OF CLINICAL BIOCHEMISTRY & IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
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THYROID PROFILE, TOTAL (T3,T4 & TSH) , Serum

T3 (Tri Iodothyronine) CLIA	1.06	ng/mL	0.60 - 1.81
T4 (Thyroxine) CLIA	9.3	µg/dL	3.2 - 12.6
Thyroid Stimulating Hormone (TSH) CLIA	3.12	µIU/ mL	0.35 - 5.50

Comment:

Age	Total T3 Ref Range (ng/mL)
1st Trimester	0.80 - 1.90
2nd Trimesters	1.00 - 2.60
3rd Trimesters	1.00 - 2.60

Age	Total TSH Ref Range (µIU/ mL)
1st Trimester	0.1 - 2.5
2nd Trimester	0.2 - 3.0
3rd Trimester	0.3 - 3.0

- TSH levels are subjected to circadian variation, hence time of the day has influence on the measured serum TSH concentrations.
- Total T3 and Total T4 levels are profoundly affected by altered concentration of thyroid binding protein espically during pregnancy and Patients on steroid therapy.
- Unbound fraction of thyroid hormone is biologically active form and correlate more closely with clinical status of patient than Total T3/Total T4 concentration.

Neha.

Dr. Neha Tyagi
 HOD & Senior Pathologist
 M.B.B.S. M.D.
 DMC NO.: 52020

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DEPARTMENT OF CLINICAL BIOCHEMISTRY & IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
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VITAMIN B12 CYANOCOBALAMIN , Serum

Vitamin B12 Assay CLIA	524	pg/mL	211 - 911
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Comment:

Vitamin B12 belongs to the family of cobalamins and serves as a cofactor for two important reactions in humans. As methylcobalamin, it is a cofactor for methionine synthetase in the conversion of homocysteine to methionine, and as adenosylcobalamin for the conversion of methylmalonyl-coenzyme A (CoA) to succinyl-CoA. All vitamin B12 comes from diet and is present in all foods of animal origin. Severe prolonged vitamin B12 deficiency may cause megaloblastic anemia and/or neurological degeneration.

- Causes of vitamin B12 deficiency
- Dietary deficiency (strict vegetarians)
- Decreased production of intrinsic factor
- Pernicious anemia
- Gastrectomy
- Helicobacter pylori infection
- Competition for vitamin B12 in gut
- Blind loop syndrome
- Fish tapeworm
- Pancreatic insufficiency
- Decreased ileal absorption of vitamin B12
- Surgical resection
- Crohn disease
- Transcobalamin II deficiency



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DEPARTMENT OF HEMATOLOGY & COAGULATION

Test Name	Result	Unit	Bio. Ref. Interval
CBC: COMPLETE BLOOD COUNT With ESR , EDTA WHOLE BLOOD			
Haemoglobin	16.9	g/dL	13.0 - 17.0
Cyanide free SLS-Hemoglobin Method			
Total WBC Count (TLC)	7.21	$10^3/\mu\text{L}$	4.0 - 10.0
Flow Cytometry using Semi-Conductor Laser			
Red Blood Cells Count	6.26	$10^6/\mu\text{L}$	4.5 - 5.5
Hydrodynamically focused DC Detection Method			
Hematocrit (PCV)	51.3	%	40 - 50
RBC Pulse Height Detection			
Differential Count Fluorescent Flow Cytometry			
Neutrophils	53	%	40 - 80
Lymphocytes	37	%	20 - 40
Monocytes	07	%	2 - 10
Eosinophils	03	%	1 - 6
Basophils	00	%	0 - 1
Absolute Counts Fluorescent Flow Cytometry/Calculated			
Absolute Neutrophil Count	3.82	$10^3/\mu\text{L}$	2 - 7
Absolute Lymphocyte Count	2.67	$10^3/\mu\text{L}$	1 - 3
Absolute Monocyte Count	0.5	$10^3/\mu\text{L}$	0.2 - 1.0
Absolute Eosinophil Count	0.22	$10^3/\mu\text{L}$	0.02 - 0.5
Red cell indices Hydrodynamically focused DC Detection Method			
MCV	81.9	fL	81 - 101
MCH	27	pg	27 - 32
MCHC	32.9	g/dl	31.5 - 34.5
Platelet Count	334	$10^3/\mu\text{L}$	150 - 410
Hydrodynamically focused DC Detection Method			
MPV	8.3	fL	9.7-11.9
Hydrodynamically focused DC Detection method			



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DEPARTMENT OF HEMATOLOGY & COAGULATION

Test Name	Result	Unit	Bio. Ref. Interval
RDW - CV Derived from RBC Histogram	12	%	12.0 - 14.6
Erythrocyte Sedimentation Rate Modified - Westergren Method	2	mm/hr	0 - 10

Comment (CBC)

Erythrocytosis

Adv: Clinical correlation

Comment:

Complete hemogram includes a series of test which includes complete blood count (CBC, also known as a complete blood cell count) along with Erythrocyte sedimentation rate (ESR). CBC is a test that provides information about blood cells like Red Blood Cells (RBC), White Blood Cells (WBC) and platelets. It is routinely performed to provide an overview of a patient's general health status. ESR is done to find out if any condition is causing inflammation in the body.



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DEPARTMENT OF CLINICAL BIOCHEMISTRY & IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
LIPID PROFILE, BASIC , Serum			
Cholesterol Total	168	mg/dL	< 200
CHO-POD			
Triglycerides	93	mg/dL	< 150
Enzymatic with glycerol Blank			
HDL Cholesterol	41	mg/dL	> 40
Direct enzymatic, calorimetric			
VLDL Cholesterol	18.6	mg/dL	< 30
Calculated			
LDL/HDL Ratio	2.88	Ratio	
Calculated			
Total Cholesterol/HDL Cholesterol Ratio	4.1	Ratio	
Calculated			
LDL Cholesterol	118	mg/dL	< 100
Direct measure			

Comment:

NATIONAL LIPID ASSOCIATION RECOMMENDATIONS (NLA-2014)	TOTAL CHOLESTEROL in mg/dL	TRIGLYCERIDE in mg/dL	LDL CHOLESTEROL in mg/dL
Optimal	<200	<150	<100
Above Optimal	-	-	100- 129
Borderline High	200-239	150-199	130-159
High	> =240	200-499	160-189
Very High	-	> =500	> =190

*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.

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

*Indians tend to have higher triglyceride levels & Lower HDL cholesterol combined with small dense LDL particles, a pattern known as atherogenic dyslipidemia.

* Non HDL Cholesterol comprises the cholesterol carried by all atherogenic particles, including LDL, IDL, VLDL & VLDL remnants, Chylomicron remnants & Lp(a).

* LAI recommends LDL cholesterol as primary target and Non HDL cholesterol as co-primary treatment target 6. Apolipoprotein B is an optional, secondary lipid target for treatment once LDL & Non HDL goals have been achieved.

*Additional testing for Apolipoprotein B, hsCRP, Lp(a) & LP-PLA2 should be considered among patients with moderate risk for ASCVD for risk refinement.



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Risk Stratification of ASCVD by Lipid Association of India 2016

Major ASCVD Risk Factors

- Age ≥ 45 years in males and ≥ 55 years females.
- Family h/o premature ASCVD(< 55 years of age in a male first degree relative or < 65 years of age in a female first degree relative).
- Current Cigarette smoking or tobacco use.
- High blood pressure.
- Low HDL

ASCVD Risk Categories

Risk Category	Conventional Risk markers	Non-Conventional Risk markers (Optional)
Very High Risk	1. Established ASCVD 2. Diabetes with 2 or more major ASCVD risk factors and/or evidence of end organ damage 3. Familial Homozygous hypercholesterolemia	None
High Risk	1. ≥ 3 major ASCVD risk factors 2. Diabetes with 0-1 major risk factor and no evidence of end organ damage. 3. CKD stage 3 B or 4 4. Familial Hypercholesterolemia(other than Familial Homozygous hypercholesterolemia). 5. Extreme of a single factor e.g. LDL Cholesterol > 190 mg/dL, Heavy smoker, strong family h/o premature ASCVD.	1. Coronary artery calcium, CAC score ≥ 300 AU. 2. Lp(a) ≥ 50 mg/dL 3. Non stenotic carotid plaque
Moderate risk	Any 2 major ASCVD risk factors.	1. Coronary artery calcium, CAC score 100-299 AU. 2. Lp(a) 20-49 mg/dL. 3. Metabolic syndrome.
Low risk	0-1 major ASCVD risk factors	None

Treatment Goals as per Lipid Association of India 2016

RISK CATEGORY	CONSIDER THERAPY	TREATMENT GOAL
	LDL CHOLESTEROL (LDL-C)(mg/dL)	LDL CHOLESTEROL (LDL-C)(mg/dL)
Very High	≥ 50	< 50
High	≥ 70	< 70



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Test Name	Result	Unit	Bio. Ref. Interval
Moderate	> = 100	< 100	
Low	> = 130 *	< 100	

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



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Test Name	Result	Unit	Bio. Ref. Interval
LFT BASIC-LIVER PANEL BASIC , SERUM			
Total Bilirubin	1.17	mg/dL	0.2 - 1.0
Diazotization			
Conjugated Bilirubin	0.16	mg/dL	0.0 - 0.2
Diazotization			
Indirect Bilirubin	1.01	mg/dL	0.2 - 1.0
Calculated			
Total Protein	8.2	g/dL	6.4 - 8.2
Biuret			
Albumin	4.4	g/dL	3.4 - 5.0
Bromocresol purple (BCP)			
Globulin	3.8	g/dL	2.0 - 3.5
Calculated			
A/G Ratio	1.16	Ratio	> 1
Calculated			
SGPT (ALT)	57	U/L	10 - 40
IFCC with P5P			
SGOT(AST)	26	U/L	18 - 54
IFCC with P5P			
Alkaline Phosphatase	50	U/L	50 - 116
PNPP, AMP Buffer IFCC			
Gamma Glutamyl Transferase	35	U/L	15 - 85
IFCC			

Comment:

The clinical suspicion of liver disease usually leads to the measurement of the liver function tests (LFT) which include measurement of several enzymes, serum bilirubin and albumin. These parameters may point to an underlying pathological process and direct further investigation.

The aims of investigation in patients with suspected liver disease are:

- To detect hepatic abnormality
- Measurement of severity of liver damage
- Identify the specific cause & Investigate possible complications



Dr. Naincy Neha
 Consultant Pathologist
 M.B.B.S. D.N.B.(Pathology)
 DMC NO.: 110853

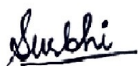
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DEPARTMENT OF CLINICAL PATHOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
Urine Routine Examination , Urine			
PHYSICAL EXAMINATION (Visual)			
Colour	PALE YELLOW	NA	PALE YELLOW
Appearance	CLEAR	NA	CLEAR
Volume (Urine)	25	mL	
CHEMICAL EXAMINATION (Automated Strip)			
pH Urine	7.0	NA	4.6 - 8.0
Double Indicator			
Specific Gravity	1.005	NA	1.001 - 1.035
pKa change			
Proteins	NEGATIVE	NA	NEGATIVE
Protein-Errors-Indicator			
Glucose	NEGATIVE	NA	NEGATIVE
Enzymatic			
Ketone Bodies	NEGATIVE	NA	NEGATIVE
Nitroprusside			
Blood	NEGATIVE	NA	NEGATIVE
Peroxidase			
Leukocyte Esterase	NEGATIVE	NA	NEGATIVE
Estrase			
Urobilinogen	NORMAL	NA	NORMAL
Ehrlich Reaction			
Bilirubin	NEGATIVE		NEGATIVE
Coupling Reaction			
Nitrite	NEGATIVE	NA	NEGATIVE
Griess Principle			
MICROSCOPIC EXAMINATION(Microscopy)			
WBC	1-2	/hpf	1 - 2
RBCs	NIL	/hpf	NIL



Dr. Surbhi Kansal .
 Consultant Microbiologist
 M.B.B.S. M.D. (Microbiology)
 DMC NO.: 52660

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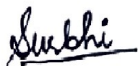


DEPARTMENT OF CLINICAL PATHOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
Epithelial Cells	1-2	/hpf	1 - 2
Crystals	NOT SEEN		NIL
Casts	NOT SEEN	/lpf	NIL
Bacteria	NEGATIVE	/hpf	NEGATIVE
Others	NIL	/HPF	NOT DETECTED

Comment:

Urine routine and microscopic examination involves checking the appearance, concentration and content of urine. It is the most common screening laboratory procedures for the early detection for renal or urinary tract diseases as well as for the monitoring and evaluation for the systemic diseases of extra-genitourinary tract system.



Dr. Surbhi Kansal .
 Consultant Microbiologist
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 DMC NO.: 52660

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Test Name	Result	Unit	Bio. Ref. Interval
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VITAMIN D 25-HYDROXY , Serum

25-HYDROXY VITAMIN D CLIA	98.01	nmol/L	See below
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Comment:

Level	Reference range in nmol/L	Comments
Deficient	< 50	High risk for developing bone disease
Insufficient	50- 75	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

- 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.
- It shows seasonal variation, with values being 40-50% lower in winter than in summer.
- Levels vary with age and are increased in pregnancy.
- The recommended test for evaluation of 25 Hydroxy Vitamin D is by LC-MS/MS

Decreased Levels	Increased levels
<ul style="list-style-type: none"> •Inadequate exposure to sunlight •Dietary deficiency •Vitamin D malabsorption •Severe Hepatocellular disease •Drugs like Anticonvulsants •Nephrotic syndrome 	<ul style="list-style-type: none"> •Vitamin D intoxication

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).

Neha.

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Test Name	Result	Unit	Bio. Ref. Interval
GLUCOSE, FASTING (F) , Fl. Plasma			
Glucose Fasting Hexokinase	93	mg/dl	70 - 100

Comment:

Blood glucose determinations are the most frequently performed clinical chemistry laboratory procedures, commonly used as an aid in the diagnosis and treatment of diabetes. Elevated glucose levels (hyperglycemia) may also occur with pancreatic neoplasm, hyperthyroidism, and adrenal cortical hyperfunction as well as other disorders. Decreased glucose levels (hypoglycemia) may result from excessive insulin therapy or various liver diseases.

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Test Name	Result	Unit	Bio. Ref. Interval
APOLIPOPROTEINS A1 & B , Serum			
APOLIPOPROTEIN-A1 Nephelometry	1.16	g/L	0.8 - 1.7
APOLIPOPROTEIN-B Nephelometry	0.912	g/L	0.4 - 1.1
APOLIPOPROTEIN-B/APOLIPOPROTEIN-A1 0.79 Calculated		NA	0.35 - 0.98

Comment:

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 g/L	REMARKS
<0.23	Abetalipoproteinemia/Hypobetalipoproteinemia
0.23 - 0.45	Hypobetalipoproteinemia
0.46 - 1.35	Normal
>1.35	Hyperapobetalipoproteinemia/Increased CAD risk

Apo B to A1 Ratio

RATIO	REMARKS
0.35-0.98	Desirable
>0.98	Increased CAD risk

Neha.

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CRP: C-REACTIVE PROTEIN , Serum

C-Reactive Protein Immunoturbidimetry	0.21	mg/dL	<0.3
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Comment:

CRP is used mainly as a marker of inflammation. Hypertension and cardiovascular disease. Elevations of CRP in the absence of clinically significant inflammation can occur in renal failure. CRP level is an independent risk factor for atherosclerotic disease. Patients with high CRP concentrations are more likely to develop stroke, myocardial infarction, severe peripheral vascular disease, inflammatory bowel disease (IBD), including Crohn's disease and ulcerative colitis.



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IRON STUDIES COMPREHENSIVE PANEL , Serum			
IRON Ferene	101	µg/dL	65 - 175
Total Iron Binding Capacity (IBCT) Ferene	400	µg/dL	250 - 450
Ferritin Chemiluminescence Immunoassay	53.6	ng/mL	39.3 - 439.4
Transferrin Immunoturbidimetry	293	mg/dL	200 - 360

Comment:

Iron is an essential trace mineral element which forms an important component of hemoglobin, metallocompounds and Vitamin A. Deficiency of iron, leads to microcytic hypochromic anemia. The toxic effects of iron are deposition of iron in various organs of the body and hemochromatosis.

Total Iron Binding capacity (TIBC) is a direct measure of the protein Transferrin which transports iron from the gut to storage sites in the bone marrow. In iron deficiency anemia, serum iron is reduced and TIBC increases.

Transferrin Saturation occurs in Idiopathic hemochromatosis and Transfusional hemosiderosis where no unsaturated iron binding capacity is available for iron mobilization. Similar condition is seen in congenital deficiency of Transferrin.

Ferritin appears to be in equilibrium with tissue ferritin and is a good indicator of storage iron in normal subjects and in most disorders. In patients with some hepatocellular diseases, malignancies and inflammatory diseases, serum ferritin is a disproportionately high estimate of storage iron because serum ferritin is an acute phase reactant. In such disorders iron deficiency anemia may exist with a normal serum ferritin concentration. In the presence of inflammation, persons with low serum ferritin are likely to respond to iron therapy.



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 DMC NO.: 110853

Patient Name : SRAJAN GARG
Age/Gender : 28 Years/M
UHID/MR No : LSHHI2906640
Visit ID : 022502010066
Ref By : Dr.SELF
IP/OP NO :

Collected : 01/Feb/2025 11:13AM
Reported : 01/Feb/2025 04:02PM
Status : Final Report
Panel Name : CASH (DC)
Barcode : 0200029669



DEPARTMENT OF CLINICAL BIOCHEMISTRY & IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval
KIDNEY PANEL KFT BASIC , Serum			
Urea	32.1	mg/dL	12.84 - 42.80
Calculated			
Creatinine Serum	0.94	mg/dL	0.8 - 1.3
Modified Jaffe Kinetic			
Uric Acid	4.68	mg/dL	3.5 - 7.2
Uricase/Peroxidase			
Potassium	4.7	mEq/L	3.5 - 5.1
ISE Indirect			
Sodium	136	mEq/L	136 - 145
ISE Indirect			
Chloride	97	mEq/L	98 - 107
ISE Indirect			
Blood Urea Nitrogen	15	mg/dL	6.0 - 20.0
Urease GLDH			
Calcium, Total	10.3	mg/dL	9.1 - 10.4
O-cresolphthalein complexone			

Comment:

- As markers of renal function creatinine, urea, uric acid and electrolytes are for routine analysis.
- Plasma urea or creatinine should be done as a guide to check the progression and disease prognosis if there is severe renal damage or obstruction.
- Examination of urine is most important initial test for suspected renal damage, particularly glomerular diseases.

*** End Of Report ***

[Click here to Access Comparative Reports](#)

Please Note: These comparative reports are based on your PatientID .



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CONDITIONS OF REPORTING



- ▶ In case of alarming or unexpected test results, you are advised to contact the laboratory immediately for further discussions and action. Laboratory results are meant to be correlated with patient's clinical history.
- ▶ Reporting of test results will be as per defined laboratory turn around time for each test.
- ▶ Test results and reference ranges vary depending on the technology and methodology used.
- ▶ Rarely a second sample may be requested for an indeterminate result or any other pre-analytical/ analytical reason.
- ▶ Reports will be sent via whats app/sms/e-mail on the number/email-id provided by you. Only reports with no pending payments are mailed, uploaded, or dispatched.
- ▶ Home collection sample facility is provided with prior appointment. Request for the same to be given on 011-41183838.
- ▶ To maintain confidentiality, certain reports may not be mailed at the discretion of the management.
- ▶ In case of any queries pertaining to your test results or to provide feedback/ suggestions, please call 011-41183838 & email at info@mahajanimaging.com.
- ▶ Test results are not valid for medico legal purposes.
- ▶ The Courts (forums) at Delhi shall have exclusive jurisdiction in all disputes/ claims concerning the tests and/ or results of the tests.
- ▶ For any change in timings, please visit our website www.mahajanimaging.com.



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FOR HOME COLLECTION 011-4118 3838