

Name : Mr. GANESH MUNGARWADI  
PID No. : MED110764936 Register On : 27/11/2021 10:36 AM  
SID No. : 421090281 Collection On : 27/11/2021 12:28 PM  
Age / Sex : 38 Year(s) / Male Report On : 29/11/2021 5:54 PM  
Type : OP Printed On : 29/11/2021 9:13 PM  
Ref. Dr : MediWheel


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<u>Investigation</u>	<u>Observed Value</u>	<u>Unit</u>	<u>Biological Reference Interval</u>
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## **HAEMATOLOGY**

### **Complete Blood Count With - ESR**


Haemoglobin (EDTA Blood/Electrical Impedance)	16.0	g/dL	13.5 - 18.0
Packed Cell Volume(PCV)/Haematocrit (EDTA Blood/Derived from Impedance)	47.9	%	42 - 52
RBC Count (EDTA Blood/Impedance Variation)	5.47	mill/cu.mm	4.7 - 6.0
Mean Corpuscular Volume(MCV) (EDTA Blood/Derived from Impedance)	88.0	fL	78 - 100
Mean Corpuscular Haemoglobin(MCH) (EDTA Blood/Derived from Impedance)	29.3	pg	27 - 32
Mean Corpuscular Haemoglobin concentration(MCHC) (EDTA Blood/Derived from Impedance)	33.5	g/dL	32 - 36
RDW-CV (EDTA Blood/Derived from Impedance)	14.4	%	11.5 - 16.0
RDW-SD (EDTA Blood/Derived from Impedance)	44.35	fL	39 - 46
Total Leukocyte Count (TC) (EDTA Blood/Impedance Variation)	6570	cells/cu.mm	4000 - 11000
Neutrophils (EDTA Blood/Impedance Variation & Flow Cytometry)	55.18	%	40 - 75
Lymphocytes (EDTA Blood/Impedance Variation & Flow Cytometry)	32.17	%	20 - 45

  
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Eosinophils (EDTA Blood/Impedance Variation & Flow Cytometry)	1.94	%	01 - 06
Monocytes (EDTA Blood/Impedance Variation & Flow Cytometry)	<b>10.60</b>	%	02 - 10
Basophils (Blood/Impedance Variation & Flow Cytometry)	0.11	%	00 - 02
Absolute Neutrophil count (EDTA Blood/Impedance Variation & Flow Cytometry)	3.63	10 <sup>3</sup> / µl	1.5 - 6.6
Absolute Lymphocyte Count (EDTA Blood/Impedance Variation & Flow Cytometry)	2.11	10 <sup>3</sup> / µl	1.5 - 3.5
Absolute Eosinophil Count (AEC) (EDTA Blood/Impedance Variation & Flow Cytometry)	0.13	10 <sup>3</sup> / µl	0.04 - 0.44
Absolute Monocyte Count (EDTA Blood/Impedance Variation & Flow Cytometry)	0.70	10 <sup>3</sup> / µl	< 1.0
Absolute Basophil count (EDTA Blood/Impedance Variation & Flow Cytometry)	0.01	10 <sup>3</sup> / µl	< 0.2
Platelet Count (EDTA Blood/Impedance Variation)	304.8	10 <sup>3</sup> / µl	150 - 450
MPV (EDTA Blood/Derived from Impedance)	<b>7.87</b>	fL	7.9 - 13.7
PCT (EDTA Blood/Automated Blood cell Counter)	0.24	%	0.18 - 0.28
ESR (Erythrocyte Sedimentation Rate) (Citratd Blood/Manual Westergren Method)	14	mm/hr	0 - 15

  
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## **BIOCHEMISTRY**

### **Liver Function Test**

Bilirubin(Total) (Serum/Diazotized Sulfanilic Acid)	0.6	mg/dL	0.1 - 1.2
Bilirubin(Direct) (Serum/Diazotized Sulfanilic Acid)	0.2	mg/dL	0.0 - 0.3
Bilirubin(Indirect) (Serum/Derived)	0.40	mg/dL	0.1 - 1.0
Total Protein (Serum/Biuret)	7.6	g/dL	6.0 - 8.0
Albumin (Serum/Bromocresol green)	4.2	g/dL	3.5 - 5.0
Globulin (Serum/Derived)	3.40	g/dL	2.3 - 3.5
A : G Ratio (Serum/Derived)	1.24		1.1 - 2.4
SGOT/AST (Aspartate Aminotransferase) (Serum/Modified IFCC without P5P)	23	U/L	5 - 40
SGPT/ALT (Alanine Aminotransferase) (Serum/Modified IFCC without P5P)	25	U/L	5 - 41
Alkaline Phosphatase (SAP) (Serum/Modified IFCC)	100	U/L	53 - 128
GGT(Gamma Glutamyl Transpeptidase) (Serum/Modified IFCC)	20	U/L	< 55

  
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<b><u>Lipid Profile</u></b>			
Cholesterol Total (Serum/Cholesterol oxidase/Peroxidase)	159	mg/dL	Optimal: < 200 Borderline: 200 - 239 High Risk: >= 240
Triglycerides (Serum/Glycerol phosphate oxidase / peroxidase)	124	mg/dL	Optimal: < 150 Borderline: 150 - 199 High: 200 - 499 Very High: >= 500

**INTERPRETATION:** The reference ranges are based on fasting condition. Triglyceride levels change drastically in response to food, increasing as much as 5 to 10 times the fasting levels, just a few hours after eating. Fasting triglyceride levels show considerable diurnal variation too. There is evidence recommending triglycerides estimation in non-fasting condition for evaluating the risk of heart disease and screening for metabolic syndrome, as non-fasting sample is more representative of the usual circulating level of triglycerides during most part of the day.

HDL Cholesterol (Serum/Immunoinhibition)	40	mg/dL	Optimal(Negative Risk Factor): >= 60 Borderline: 40 - 59 High Risk: < 40
LDL Cholesterol (Serum/Calculated)	94.2	mg/dL	Optimal: < 100 Above Optimal: 100 - 129 Borderline: 130 - 159 High: 160 - 189 Very High: >= 190
VLDL Cholesterol (Serum/Calculated)	24.8	mg/dL	< 30
Non HDL Cholesterol (Serum/Calculated)	119.0	mg/dL	Optimal: < 130 Above Optimal: 130 - 159 Borderline High: 160 - 189 High: 190 - 219 Very High: >= 220

  
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**INTERPRETATION:** 1.Non-HDL Cholesterol is now proven to be a better cardiovascular risk marker than LDL Cholesterol.  
 2.It is the sum of all potentially atherogenic proteins including LDL, IDL, VLDL and chylomicrons and it is the "new bad cholesterol" and is a co-primary target for cholesterol lowering therapy.

Total Cholesterol/HDL Cholesterol Ratio (Serum/Calculated)	4		Optimal: < 3.3 Low Risk: 3.4 - 4.4 Average Risk: 4.5 - 7.1 Moderate Risk: 7.2 - 11.0 High Risk: > 11.0
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Triglyceride/HDL Cholesterol Ratio (TG/HDL) (Serum/Calculated)	3.1		Optimal: < 2.5 Mild to moderate risk: 2.5 - 5.0 High Risk: > 5.0
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LDL/HDL Cholesterol Ratio (Serum/Calculated)	2.4		Optimal: 0.5 - 3.0 Borderline: 3.1 - 6.0 High Risk: > 6.0
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<b><u>Glycosylated Haemoglobin (HbA1c)</u></b>			
HbA1C (Whole Blood/HPLC)	5.4	%	Normal: 4.5 - 5.6 Prediabetes: 5.7 - 6.4 Diabetic: $\geq$ 6.5

**INTERPRETATION:** If Diabetes - Good control : 6.1 - 7.0 % , Fair control : 7.1 - 8.0 % , Poor control  $\geq$  8.1 %

Estimated Average Glucose 108.28 mg/dL  
(Whole Blood)

**INTERPRETATION: Comments**

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


Conditions that prolong RBC life span like Iron deficiency anemia, Vitamin B12 & Folate deficiency, hypertriglyceridemia, hyperbilirubinemia, Drugs, Alcohol, Lead Poisoning, Asplenia can give falsely elevated HbA1C values.

Conditions that shorten RBC survival like acute or chronic blood loss, hemolytic anemia, Hemoglobinopathies, Splenomegaly, Vitamin E ingestion, Pregnancy, End stage Renal disease can cause falsely low HbA1c.



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## IMMUNOASSAY

### THYROID PROFILE / TFT

T3 (Triiodothyronine) - Total (Serum/CMIA)	1.01	ng/mL	0.7 - 2.04
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#### **INTERPRETATION:**

##### **Comment :**

Total T3 variation can be seen in other condition like pregnancy, drugs, nephrosis etc. In such cases, Free T3 is recommended as it is Metabolically active.

T4 (Thyroxine) - Total (Serum/CMIA)	8.80	µg/dL	4.2 - 12.0
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#### **INTERPRETATION:**

##### **Comment :**

Total T4 variation can be seen in other condition like pregnancy, drugs, nephrosis etc. In such cases, Free T4 is recommended as it is Metabolically active.

TSH (Thyroid Stimulating Hormone) (Serum/Chemiluminescent Microparticle Immunoassay(CMIA))	1.33	µIU/mL	0.35 - 5.50
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#### **INTERPRETATION:**

Reference range for cord blood - upto 20

1 st trimester: 0.1-2.5

2 nd trimester 0.2-3.0

3 rd trimester : 0.3-3.0

(Indian Thyroid Society Guidelines)

##### **Comment :**

1.TSH reference range during pregnancy depends on Iodine intake, TPO status, Serum HCG concentration, race, Ethnicity and BMI.

2.TSH Levels are subject to circadian variation, reaching peak levels between 2-4am and at a minimum between 6-10PM.The variation can be of the order of 50%,hence time of the day has influence on the measured serum TSH concentrations.

3.Values<math>0.03 \mu\text{IU/mL}</math> need to be clinically correlated due to presence of rare TSH variant in some individuals.

  
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## **CLINICAL PATHOLOGY**

### **PHYSICAL EXAMINATION**

Colour (Urine)	Pale Yellow		
Volume (Urine)	30	mL	
Appearance (Urine)	Clear		Clear

### **CHEMICAL EXAMINATION**

pH (Urine)	7.0		4.6 - 8.0
Specific Gravity (Urine)	1.015		1.003 - 1.030
Protein (Urine)	Negative		Negative
Glucose (Urine)	Negative		Negative
Ketones (Urine)	Negative		Negative
Leukocytes (Urine)	Negative		Negative
Nitrite (Urine)	Negative		Negative
Bilirubin (Urine)	Negative		Negative


  
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Blood (Urine)	Negative		Negative
Urobilinogen (Urine)	0.1	mg/dL	0.1 - 1.0
<b><u>Urine Microscopy Pictures</u></b>			
Pus Cells (Urine)	2-3	/hpf	0 - 2
Epithelial Cells (Urine)	0-2	/hpf	0 - 2
RBCs (Urine)	Nil	/hpf	0 - 1
Others (Urine)	Nil		Nil
Casts (Urine)	Nil		0 - 1
Crystals (Urine)	Nil		NIL
Bacteria	Nil		

  
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**IMMUNOHAEMATOLOGY**

BLOOD GROUPING AND Rh TYPING  
(EDTA Blood/Agglutination)

'AB' 'Positive'

  
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**BIOCHEMISTRY**

BUN / Creatinine Ratio	8.4		
Glucose Fasting (FBS) (Plasma - F/GOD- POD)	91	mg/dL	Normal: < 100 Pre Diabetic: 100 - 125 Diabetic: >= 126

**INTERPRETATION:** Factors such as type, quantity and time of food intake, Physical activity, Psychological stress, and drugs can influence blood glucose level.

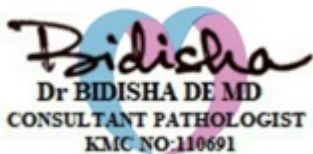
Urine Glucose - Fasting (Urine - F/GOD - POD)	Negative		Negative
Glucose Postprandial (PPBS) (Plasma - PP/GOD - POD)	82	mg/dL	70 - 140

**INTERPRETATION:** Factors such as type, quantity and time of food intake, Physical activity, Psychological stress, and drugs can influence blood glucose level. Fasting blood glucose level may be higher than Postprandial glucose, because of physiological surge in Postprandial Insulin secretion, Insulin resistance, Exercise or Stress, Dawn Phenomenon, Somogyi Phenomenon, Anti- diabetic medication during treatment for Diabetes.

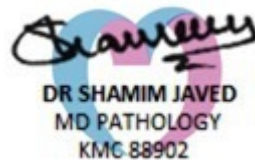
Blood Urea Nitrogen (BUN) (Serum/Urease-GLDH)	8	mg/dL	7.0 - 21
Creatinine (Serum/Modified Jaffe)	1.0	mg/dL	0.9 - 1.3

**INTERPRETATION:** Elevated Creatinine values are encountered in increased muscle mass, severe dehydration, Pre-eclampsia, increased ingestion of cooked meat, consuming Protein/ Creatine supplements, Diabetic Ketoacidosis, prolonged fasting, renal dysfunction and drugs such as cefoxitin ,cefazolin, ACE inhibitors ,angiotensin II receptor antagonists,N-acetylcyteine , chemotherapeutic agent such as flucytosine etc.

Uric Acid (Serum/Uricase/Peroxidase)	5.6	mg/dL	3.5 - 7.2
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-- End of Report --