

Name : Mrs. SOWMYA  
PID No. : MED111017140  
SID No. : 78393137  
Age / Sex : 25 Year(s) / Female  
Type : OP  
Ref. Dr : MediWheel

Register On : 12/03/2022 8:53 AM  
Collection On : 12/03/2022 9:27 AM  
Report On : 14/03/2022 7:09 PM  
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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 (Blood/Photometry $\delta$ Cell counter)	<b>11.08</b>	g/dL	12.5 - 16.0
PCV (Packed Cell Volume) / Haematocrit (Blood/Numeric Integration of MCV)	<b>35.62</b>	%	37 - 47
RBC Count (Whole Blood/Electrical Impedance )	04.52	mill/cu.mm	4.2 - 5.4
MCV (Mean Corpuscular Volume) (Blood/Calculated)	78.86	fL	78 - 100
MCH (Mean Corpuscular Haemoglobin) (Blood/Calculated)	<b>24.52</b>	pg	27 - 32
MCHC (Mean Corpuscular Haemoglobin concentration) (Blood/Calculated)	<b>31.09</b>	g/dL	32 - 36
RDW-CV	13.46	%	11.5 - 16.0
RDW-SD	<b>35.12</b>	fL	39 - 46
Total WBC Count (TC) (Whole Blood/Electrical Impedance )	8080	cells/cu.mm	4000 - 11000
Neutrophils (Blood/Impedance and absorbance)	60.30	%	40 - 75
Lymphocytes (Blood/Impedance and absorbance)	31.50	%	20 - 45
Eosinophils (Blood/Impedance and absorbance)	01.40	%	01 - 06
Monocytes (Blood/Impedance and absorbance)	06.60	%	01 - 10

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Basophils (Blood/Impedance and absorbance)	00.20	%	00 - 02
<b>INTERPRETATION:</b> Tests done on Automated Five Part cell counter. All abnormal results are reviewed and confirmed microscopically.			
Absolute Neutrophil count (Blood/Impedance and absorbance)	04.88	10 <sup>3</sup> / $\mu$ l	1.5 - 6.6
Absolute Lymphocyte Count (Blood/Impedance and absorbance)	02.55	10 <sup>3</sup> / $\mu$ l	1.5 - 3.5
Absolute Eosinophil Count (AEC) (Blood/Impedance and absorbance)	00.11	10 <sup>3</sup> / $\mu$ l	0.04 - 0.44
Absolute Monocyte Count (Blood/Impedance and absorbance)	00.53	10 <sup>3</sup> / $\mu$ l	< 1.0
Absolute Basophil count (Blood/Impedance and absorbance)	00.02	10 <sup>3</sup> / $\mu$ l	< 0.2
Platelet Count (Blood/Electrical Impedance )	3.25	lakh/cu.mm	1.4 - 4.5
<b>INTERPRETATION:</b> Platelet count less than 1.5 lakhs will be confirmed microscopically.			
MPV (Blood/Automated Blood cell Counter)	08.19	fL	8.0 - 13.3
PCT	0.25	%	0.18 - 0.28
ESR (Erythrocyte Sedimentation Rate) (Blood/Automated ESR analyser)	35	mm/hr	< 20

  
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**Liver Function Test**

Bilirubin(Total) (Serum/DCA with ATCS)	0.81	mg/dL	0.1 - 1.2
Bilirubin(Direct) (Serum/Diazotized Sulfanilic Acid)	0.20	mg/dL	0.0 - 0.3
Bilirubin(Indirect) (Serum/Derived)	0.61	mg/dL	0.1 - 1.0
SGOT/AST (Aspartate Aminotransferase) (Serum/Modified IFCC)	24.6	U/L	5 - 40
SGPT/ALT (Alanine Aminotransferase) (Serum/Modified IFCC)	23.8	U/L	5 - 41
GGT(Gamma Glutamyl Transpeptidase) (Serum/IFCC / Kinetic)	25.5	U/L	< 38
Alkaline Phosphatase (SAP) (Serum/Modified IFCC)	84.8	U/L	42 - 98
Total Protein (Serum/Biuret)	7.20	gm/dl	6.0 - 8.0
Albumin (Serum/Bromocresol green)	3.83	gm/dl	3.5 - 5.2
Globulin (Serum/Derived)	3.37	gm/dL	2.3 - 3.6
A : G RATIO (Serum/Derived)	1.14		1.1 - 2.2

  
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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 glycaemic 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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<b><u>Lipid Profile</u></b>			
Cholesterol Total (Serum/Cholesterol oxidase/Peroxidase)	132	mg/dL	Optimal: < 200 Borderline: 200 - 239 High Risk: >= 240
Triglycerides (Serum/Glycerol-phosphate oxidase/Peroxidase)	110	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/Direct Detergent)	<b>31.94</b>	mg/dL	Optimal(Negative Risk Factor): >= 60 Borderline: 50 - 59 High Risk: < 50
LDL Cholesterol (Serum/Calculated)	78.1	mg/dL	Optimal: < 100 Above Optimal: 100 - 129 Borderline: 130 - 159 High: 160 - 189 Very High: >= 190
VLDL Cholesterol (Serum/Calculated)	22	mg/dL	< 30

  
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Non HDL Cholesterol (Serum/Calculated)	100.1	mg/dL	Optimal: < 130 Above Optimal: 130 - 159 Borderline High: 160 - 189 High: 190 - 219 Very High: >= 220

**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)	4.1		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)	3.4		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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## IMMUNOASSAY

### THYROID PROFILE / TFT

T3 (Triiodothyronine) - Total (Serum/Chemiluminescent Immunometric Assay (CLIA))	1.05	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/Chemiluminescent Immunometric Assay (CLIA))	7.0	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/Chemiluminescence)	4.63	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&amplt;0.03 µIU/mL 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/Physical examination)	Pale Yellow		Yellow to Amber
Appearance (Urine/Physical examination)	clear		
Volume(CLU)	40 ml		

**CHEMICAL EXAMINATION**

Leukocytes(CP)	Negative		
pH (Urine/Double Indicator )	6.0		4.5 - 8.0
Specific Gravity (Urine/Ionic concentration )	1.015		1.002 - 1.035
Ketone (Urine/Dip Stick Reagent strip Method / Rothera's mixture.)	Negative		Negative
Urobilinogen (Urine/Dipstick 6"Reagent strip method / Ehrlich's Reaction)	Normal		Within normal limits
Blood (Urine/Dip-Stick Method Peroxidase like activity of HB)	Negative		Negative
Nitrite (Urine/Dip Stick 6"Reagent strip method.)	Negative		Negative
Bilirubin (Urine/Dip Stick 6" Diazotized Dichloro aniline/Fouchets method.)	Negative		Negative

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Protein (Urine/Dipstick-Error of indicator/ Sulphosalicylic acid method )	Negative		Negative
Glucose (Urine/Dip Stick Method / Glucose Oxidase - Peroxidase / Benedict's semi quantitative method.)	Negative		Negative
<b><u>Urine Microscopy Pictures</u></b>			
RBCs (Urine/Microscopy exam of urine sediment)	Nil	/hpf	Nil
Pus Cells (Urine/Microscopy exam of urine sediment)	4-5	/hpf	NIL
Casts (Urine/Microscopy exam of urine sediment)	Nil	/hpf	NIL
Epithelial Cells (Urine/Microscopy exam of urine sediment)	3-5	/hpf	Nil
Urine Crystals (Stool)	Nil	/hpf	NIL
Others (Urine)	Nil		Nil

**INTERPRETATION:**Note: Done with Automated Urine Analyser & microscopy

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**HAEMATOLOGY**

BLOOD GROUPING AND Rh TYPING  
(Blood/Agglutination)

'O' Positive'

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<b><u>BIOCHEMISTRY</u></b>			
BUN / Creatinine Ratio	23.26		6.0 - 22.0
Glucose Fasting (FBS) (Plasma - F/Glucose oxidase/Peroxidase)	86	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.

Glucose, Fasting (Urine) (Urine - F)	Negative		Negative
Glucose Postprandial (PPBS) (Plasma - PP/Glucose oxidase/Peroxidase)	103	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.

Urine Glucose(PP-2 hours) (Urine - PP)	Negative		Negative
Blood Urea Nitrogen (BUN) (Serum/Urease UV / derived)	11.4	mg/dL	7.0 - 21
Creatinine (Serum/Jaffe $\delta$ "Alkaline Picrate)	0.79	mg/dL	0.6 - 1.1
Uric Acid (Serum/Enzymatic)	3.8	mg/dL	2.6 - 6.0

  
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