

Name : Mr. SATHISH H  
PID No. : MED111123255  
SID No. : 422045007  
Age / Sex : 55 Year(s) / Male  
Type : OP  
Ref. Dr : MediWheel

Register On : 28/05/2022 9:55 AM  
Collection On : 28/05/2022 10:50 AM  
Report On : 28/05/2022 5:05 PM  
Printed On : 04/06/2022 1:01 PM



<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/Spectrophotometry)	15.1	g/dL	13.5 - 18.0
Packed Cell Volume(PCV)/Haematocrit (EDTA Blood)	47.0	%	42 - 52
RBC Count (EDTA Blood)	<b>6.02</b>	mill/cu.mm	4.7 - 6.0
Mean Corpuscular Volume(MCV) (EDTA Blood)	78.1	fL	78 - 100
Mean Corpuscular Haemoglobin(MCH) (EDTA Blood)	<b>25.1</b>	pg	27 - 32
Mean Corpuscular Haemoglobin concentration(MCHC) (EDTA Blood)	32.2	g/dL	32 - 36
RDW-CV (EDTA Blood)	13.9	%	11.5 - 16.0
RDW-SD (EDTA Blood)	<b>38.00</b>	fL	39 - 46
Total Leukocyte Count (TC) (EDTA Blood)	5600	cells/cu.mm	4000 - 11000
Neutrophils (EDTA Blood)	56.7	%	40 - 75
Lymphocytes (EDTA Blood)	24.5	%	20 - 45
Eosinophils (EDTA Blood)	<b>7.3</b>	%	01 - 06

  
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Monocytes (EDTA Blood)	9.6	%	01 - 10
Basophils (Blood)	1.9	%	00 - 02
<b>INTERPRETATION:</b> Tests done on Automated Five Part cell counter. All abnormal results are reviewed and confirmed microscopically.			
Absolute Neutrophil count (EDTA Blood)	3.18	10 <sup>3</sup> / $\mu$ l	1.5 - 6.6
Absolute Lymphocyte Count (EDTA Blood)	<b>1.37</b>	10 <sup>3</sup> / $\mu$ l	1.5 - 3.5
Absolute Eosinophil Count (AEC) (EDTA Blood)	0.41	10 <sup>3</sup> / $\mu$ l	0.04 - 0.44
Absolute Monocyte Count (EDTA Blood)	0.54	10 <sup>3</sup> / $\mu$ l	< 1.0
Absolute Basophil count (EDTA Blood)	0.11	10 <sup>3</sup> / $\mu$ l	< 0.2
Platelet Count (EDTA Blood)	302	10 <sup>3</sup> / $\mu$ l	150 - 450
MPV (EDTA Blood)	8.3	fL	7.9 - 13.7
PCT (EDTA Blood/Automated Blood cell Counter)	0.25	%	0.18 - 0.28
ESR (Erythrocyte Sedimentation Rate) (Citratd Blood)	9	mm/hr	< 20

  
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<b><u>BIOCHEMISTRY</u></b>			
<b><u>Liver Function Test</u></b>			
Bilirubin(Total) (Serum/DCA with ATCS)	0.37	mg/dL	0.1 - 1.2
Bilirubin(Direct) (Serum/Diazotized Sulfanilic Acid)	0.14	mg/dL	0.0 - 0.3
Bilirubin(Indirect) (Serum/Derived)	0.23	mg/dL	0.1 - 1.0
SGOT/AST (Aspartate Aminotransferase) (Serum/Modified IFCC)	18.57	U/L	5 - 40
SGPT/ALT (Alanine Aminotransferase) (Serum/Modified IFCC)	13.90	U/L	5 - 41
GGT(Gamma Glutamyl Transpeptidase) (Serum/IFCC / Kinetic)	23.94	U/L	< 55
Alkaline Phosphatase (SAP) (Serum/Modified IFCC)	65.5	U/L	56 - 119
Total Protein (Serum/Biuret)	6.10	gm/dl	6.0 - 8.0
Albumin (Serum/Bromocresol green)	3.68	gm/dl	3.5 - 5.2
Globulin (Serum/Derived)	2.42	gm/dL	2.3 - 3.6
A : G RATIO (Serum/Derived)	1.52		1.1 - 2.2

  
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<b><u>Lipid Profile</u></b>			
Cholesterol Total (Serum/CHOD-PAP with ATCS)	<b>288.97</b>	mg/dL	Optimal: < 200 Borderline: 200 - 239 High Risk: >= 240
Triglycerides (Serum/GPO-PAP with ATCS)	<b>370.48</b>	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)	<b>42.72</b>	mg/dL	Optimal(Negative Risk Factor): >= 60 Borderline: 40 - 59 High Risk: < 40
LDL Cholesterol (Serum/Calculated)	172.2	mg/dL	Optimal: < 100 Above Optimal: 100 - 129 Borderline: 130 - 159 High: 160 - 189 Very High: >= 190
VLDL Cholesterol (Serum/Calculated)	74.1	mg/dL	< 30
Non HDL Cholesterol (Serum/Calculated)	246.3	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)	6.8		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)	8.7		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)	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)	12.7	%	Normal: 4.5 - 5.6 Prediabetes: 5.7 - 6.4 Diabetic: >= 6.5

**INTERPRETATION:** If Diabetes - Good control : 6.1 - 7.0 % , Fair control : 7.1 - 8.0 % , Poor control >= 8.1 %

Estimated Average Glucose 317.79 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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## IMMUNOASSAY

### THYROID PROFILE / TFT

T3 (Triiodothyronine) - Total (Serum/ECLIA)	0.675	ng/ml	0.4 - 1.81
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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 (Tyroxine) - Total (Serum/ECLIA)	6.75	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/ECLIA)	2.49	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

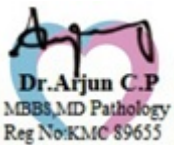
(Indian Thyroid Society Guidelines)

##### **Comment :**

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

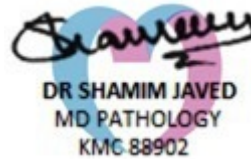
2.TSH Levels are subject to circadian variation, reaching peak levels between 2-4am and at a minimum between 6-10PM.The variation can be of the order of 50%,hence time of the day has influence on the measured serum TSH concentrations.

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 (URINE COMPLETE)**

Colour (Urine)	Pale Yellow		Yellow to Amber
Appearance (Urine)	Clear		Clear
Volume(CLU) (Urine)	20		

**CHEMICAL EXAMINATION (URINE COMPLETE)**

pH (Urine)	5.5		4.5 - 8.0
Specific Gravity (Urine)	1.025		1.002 - 1.035
Ketone (Urine)	Negative		Negative
Urobilinogen (Urine)	Normal		Normal
Blood (Urine)	Negative		Negative
Nitrite (Urine)	Negative		Negative
Bilirubin (Urine)	Negative		Negative
Protein (Urine)	Negative		Negative

  
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Glucose (Urine/GOD - POD)	Negative		Negative
Leukocytes(CP) (Urine)	Negative		

**MICROSCOPIC EXAMINATION**  
**(URINE COMPLETE)**

Pus Cells (Urine)	<b>2-3</b>	/hpf	NIL
Epithelial Cells (Urine)	<b>0-2</b>	/hpf	NIL
RBCs (Urine)	Nil	/hpf	NIL
Others (Urine)	Nil		

**INTERPRETATION:**Note: Done with Automated Urine Analyser & Automated urine sedimentation analyser. All abnormal reports are reviewed and confirmed microscopically.

Casts (Urine)	Nil	/hpf	NIL
Crystals (Urine)	Nil	/hpf	NIL

  
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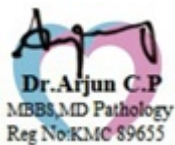


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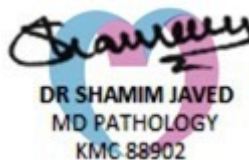
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**IMMUNOHAEMATOLOGY**  
BLOOD GROUPING AND Rh TYPING  
(EDTA Blood/Agglutination)

'O' Positive'



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<b><u>BIOCHEMISTRY</u></b>			
BUN / Creatinine Ratio	12.8		6.0 - 22.0
Glucose Fasting (FBS) (Plasma - F/GOD-PAP)	<b>153.91</b>	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/GOD - POD)	Negative		Negative
Glucose Postprandial (PPBS) (Plasma - PP/GOD-PAP)	<b>231.24</b>	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 UV / derived)	13.7	mg/dL	7.0 - 21
Creatinine (Serum/Modified Jaffe)	1.07	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/Enzymatic)	5.25	mg/dL	3.5 - 7.2
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**IMMUNOASSAY**

Prostate specific antigen - Total(PSA) (Serum/Manometric method)	6.96	ng/ml	Normal: 0.0 - 4.0 Inflammatory & Non Malignant conditions of Prostate & genitourinary system: 4.01 - 10.0 Suspicious of Malignant disease of Prostate: > 10.0
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**INTERPRETATION:** Analytical sensitivity: 0.008 - 100 ng/mL

PSA is a tumor marker for screening of prostate cancer. Increased levels of PSA are associated with prostate cancer and benign conditions like bacterial infection, inflammation of prostate gland and benign hypertrophy of prostate/ benign prostatic hyperplasia (BPH). Transient elevation of PSA levels are seen following digital rectal examination, rigorous physical activity like bicycle riding, ejaculation within 24 hours.

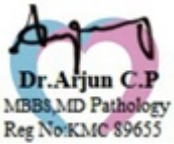
PSA levels tend to increase in all men as they age.

Clinical Utility of PSA:

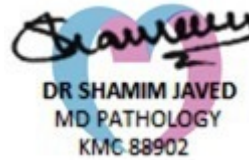
ÉIn the early detection of Prostate cancer.

ÉAs an aid in discriminating between Prostate cancer and Benign Prostatic disease.

ÉTo detect cancer recurrence or disease progression.



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-- End of Report --