

**Patient Name :** MR. MAYANK MADHUR

**Age / Gender :** 20 years / Male

**Mobile No. :** -

**Patient ID :** 3385

**Source :** CARE PATHOLOGY 106 C - SECTOR  
 INDRAPURI, BHOPAL, MP 462023 cont.  
 6264847967

Scan to Validate



**Referral :** SELF

**Collection Time :** Feb 03, 2023, 12:00 p.m.

**Receiving Time :** Feb 03, 2023, 12:00 p.m.

**Reporting Time :** Feb 03, 2023, 01:40 p.m.

**Sample ID :**



000803423

Test Description	Value(s)	Reference Range	Unit(s)
<b>COMPLETE BLOOD COUNT; CBC</b>			
Hemoglobin (Hb)	14.3	13-17	g/dl
Erythrocyte (RBC) Count	5.22	4.5-5.5	mill/cu mm
Packed Cell Volume (PCV)	48.7	40-50	%
Mean Cell Volume (MCV)	93	83-101	fl
Mean Cell Haemoglobin (MCH)	27.4	27-32	pg
Mean Corpuscular Hb Conc'n. (MCHC)	31.9	31.5-34.5	%
Red Cell Distribution Width (RDW)	13.2	11.6-14	%
Total Leucocytes (WBC) Count	5800	4000-10000	/ cu mm
Neutrophils	60	40 - 80	%
Lymphocytes	30	20-40	%
Monocytes	06	0-10	%
Eosinophils	04	0-6	%
Basophils	00	0-2	%
Absolute Neutrophil Count	3480	2000 - 7000	/c.mm
Absolute Lymphocyte Count	1740	1000 - 3000	/c.mm
Absolute Monocyte Count	348	200 - 1000	/c.mm
Absolute Eosinophil Count	232	20 - 500	/c.mm
Absolute Basophils Count	0	20 - 100	/c.mm
PCT	0.167	0.19-0.39	%
Platelet Count	1.96	1.50 - 4.50	Lacs/cu mm
Mean Platelet Volume (MPV)	8.5	6.5-12	fl
PDW	16.8	9.6-15.2	fl
Comment's			

\*\*END OF REPORT\*\*

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 Pathologist

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<b>Glycosylated Hemoglobin(HbA1C)</b>			
<b>HbA1c (GLYCOSYLATED HEMOGLOBIN), (HPLC)</b>	5.4	4.6% to 6.2% HbA1c 5.7 to 6.4% HbA1c( % High risk group) Above 6.5% HbA1c (Diabetics)	
<b>BLOOD</b>			
Method : HPLC METHOD			
Estimated Average Glucose :	108.28	-	mg/dL

**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.

Graph

**\*\*END OF REPORT\*\***

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Test Description	Value(s)	Reference Range	Unit(s)
<b>LIPID PROFILE</b>			
CHOLESTEROL Method : CHOD /POD	172.2	Desirable: <200 Borderline-high : 200 - 239 High : $\geq 240$	mg/dL
TRIGLYCERIDES Method : CHOD /POD	77.75	Normal : <150 Border line : 151 – 199 High : 200-499 Very High > 500	mg/dL
HDL Method : CHOD /POD	72.59	Desirable Level : > 60 Optimal : 40 - 59 Undesirable < 40	mg/dL
LDL Cholesterol, Calculated Method : Calculation	84.06	Optimal <100 Near Optimal : 100 - 129	mg/dL
VLDL Cholesterol, Calculated Method : Calculation	15.55	< 30	mg/dL
CHOL / HDL Ratio Method : Calculation	2.37	Low Risk: 3.3 - 4.4 Average Risk : 4.5 - 7.1 Moderate Risk : 7.2 - 11.0	
LDL Cholesterol / HDL Cholesterol Ratio	1.16	Desirable Level: 0.5 - 3.0 Borderline Risk: 3.0 - 6.0 High Risk: > 6.0	
NON HDL Method : Calculation	99.61	< 130	

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Test Description	Value(s)	Reference Range	Unit(s)
<b>RFT &amp; LFT Test</b>			
Urea	21.5	10 - 50	mg/dl
Creatinine	1.01	0.6 - 1.30	mg/dl
Sodium	146.0	136 - 149	mmol/L
Potassium	4.5	3.8 - 5.0	mmol/L
Chlorides	103	101 - 109	mmol/L
Total Protein	7.09	6.0 - 8.0	g/dL
Albumin	4.54	3.2 - 5.2	
Globulin	2.55	1.80 - 3.60	g/dL
A/G Ratio	1.78	-	
Uric Acid	5.79	2.6 - 6.0	mg/dl
Calcium	9.63	8.4 - 10.2	mg/dl
Phosphorus (Inorganic)	3.97	2.3 - 4.7	mg/dl
Bilirubin - Total	0.82	0.3 - 1.2	mg/dL
Bilirubin - Direct	0.30	<0.2	mg/dL
Bilirubin - Indirect	0.52	0.1 - 1.0	mg/dL
SGPT	15.7	<49	U/L
SGOT	22.2	< 35	U/L
Alkaline Phosphatase	89.0	80 - 306	U/L

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Test Description	Value(s)	Reference Range	Unit(s)
<b>VITAMIN B12, SERUM</b>			
<b>VITAMIN B12; CYANOCOBALAMIN</b>	290.6	200 - 1100	pg/mL

Method : Serum, ECLIA

#### Note

To differentiate vitamin B12 & folate deficiency, measurement of Methyl malonic acid in urine & serum Homocysteine level is suggested

#### Comments

Vitamin B12 performs many important functions in the body, but the most significant function is to act as coenzyme for reducing ribonucleotides to deoxyribonucleotides, a step in the formation of genes. Inadequate dietary intake is not the commonest cause for cobalamine deficiency. The most common cause is malabsorption either due to atrophy of gastric mucosa or diseases of terminal ileum. Cobalamine deficiency leads to Megaloblastic anemia and demyelination of large nerve fibres of spinal cord. Normal body stores are sufficient to last for 3-6 years. Sources of Vitamin B12 are liver, shellfish, fish, meat, eggs, milk, cheese & yogurt.

#### Decreased Levels

##### ? Lack of Intrinsic factor:

Total or partial gastrectomy, Atrophic gastritis, Intrinsic factor antibodies

? **Malabsorption:** Regional ileitis, resected bowel, Tropical Sprue, Celiac disease, pancreatic insufficiency, bacterial overgrowth & achlorhydria

? **Loss of ingested vitamin B12:** fish tapeworm

? **Dietary deficiency:** Vegetarians

? **Congenital disorders:** Orotic aciduria & transcobalamine deficiency

? **Increased demand:** Pregnancy specially last trimester

#### Increased Levels

Chronic renal failure, Congestive heart failure, Acute & Chronic Myeloid Leukemia, Polycythemia vera, Carcinomas with liver metastasis, Liver disease, Drug induced cholestasis & Protein malnutrition

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Test Description	Value(s)	Reference Range	Unit(s)
<b>IRON, TIBC &amp; SATURATION %, SERUM</b>			
<b>Iron</b>	142.0	59-158	µg/dL
Method : Colorimetric, Ferene			
<b>UIBC</b>	126	110 - 370	ug/dl
<b>Total Iron Binding Capacity</b>	268	250 - 450	µg/dL
Method : Serum, Ferene			
<b>Transferrin Saturation</b>	-	13-45	%
Method : Calculated			

#### Comments

**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.

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Test Description	Value(s)	Reference Range	Unit(s)
<b>THYROID PROFILE, TOTAL (T3, T4, TSH), SERUM</b>			
T3-Total	113	69-215	ng/dL
T4-Total	8.0	5.2-12.7	ug/dL
TSH-Ultrasensitive Method : CLIA	1.93	0.3-4.5 IU/mL Pregnant women: First trimester: 0.25-4.33 IU/mL Second trimester: 0.43-6.61 IU/mL Third trimester: 0.38-6.22 IU/mL Children: 1-3 years old: 0.76-10.0 IU/mL 3-6 years old: 0.79-5.54 IU/mL 6-12 years old: 0.49-5.83 IU/mL 12-18 years old: 0.59-6.93 IU/mL	uIU/mL

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Test Description	Value(s)	Reference Range	Unit(s)
<b><u>VITAMIN D, (25-OH), SERUM</u></b>			
<b>Vitamin D (25 - Hydroxy)</b>	<b>10.9</b>	Deficiency: < 10 ng/mL, Insufficiency: 10-29 ng/mL, Sufficiency: 30-100 ng/mL, Toxicity: 100 ng/mL	ng/mL
Method : Serum, CLIA			

#### Interpretation

- Vitamin D is a fat soluble vitamin and exists in two main forms cholecalciferol "(vitamin D3)" which is synthesized in skin from 7-dehydrocholesterol in response to sunlight exposure & Ergocalciferol (vitamin D2) present mainly in dietary sources. Both cholecalciferol & Ergocalciferol are converted to 25(OH) vitamin D in liver.
- Testing for 25(OH) vitamin D is recommended as it is the best indicator of vitamin D nutritional status as obtained from sunlight exposure & dietary "intake". "Diagnosis of vitamin D deficiency has clinical correlation with serum 25(OH) vitamin D, serum calcium, serum PTH, and serum alkaline phosphatase."

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Test Description	Value(s)	Reference Range	Unit(s)
<b>TESTOSTERONE TOTAL, SERUM</b>			
<b>TESTOSTERONE, TOTAL, SERUM</b>	189.3	142.39 - 923.14 ng/dL	ng/dL

Method : (CLIA)

**Interpretation**

Testosterone and DHT induce the expression of secondary male sex characteristics such as hair growth, external genitalia maturation and muscle mass increase. Low levels of testosterone may result in delayed puberty or infertility. Hypogonadism can be a clinical manifestation of certain chromosomal abnormalities, such as Klinefelter's syndrome. Higher levels of testosterone may indicate an androgen-producing tumor. Women produce about (5-10%) the amount of testosterone as men. The ovaries and adrenal glands contribute equally to the production of testosterone, with the majority resulting from the metabolism of prehormones, such as androstenedione. About 30% of testosterone is converted to DHT in women. Additionally, testosterone is metabolized to estradiol. The level of testosterone increases slightly during the follicular phase of the menstrual cycle, peaking just prior to ovulation. Serum testosterone increases during pregnancy, but does not change with the use of oral contraceptives. Decreased levels of testosterone in women can occur from adrenal, ovarian, or hypothalamic-pituitary deficiency or disease, as well as from HIV infection. Increased amounts of testosterone are detected in women with hirsutism.

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