

## COMPLETE BLOOD COUNT (CBC with E.S.R).

**Reference No.** : 210333875 **Age/Sex** : 50 Years MALE **Reg. Date** : 16/03/2021 08:51  
**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 09:48  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

Investigation	Result	Biological Reference Interval	Units
HEMOGLOBIN, Blood(SLS Hemoglobin)	14.6	13.00 - 17.00	g/dl
PACKED CELL VOLUME, Blood(Impedence)	43.4	40 - 50	%
TLC, Blood (Flow cytometry)	7580.00	4000 - 11000	/cumm
<b><u>D.L.C., Blood (Flow Cytometry)</u></b>			
POLYMORPHS	<b>37.0</b>	44.00 - 68.00	%
LYMPHOCYTES	<b>52.0</b>	25.00 - 44.00	%
EOSINOPHILS	4.0	0.00 - 4.00	%
MONOCYTES	7.0	0.00 - 7.00	%
ABSOLUTE NEUTROPHIL COUNT(Blood, Calculated).	2804.60	2000 - 7000	/Cu mm
ABSOLUTE LYMPHOCYTE COUNT(Blood, Calculated).	<b>3941.60</b>	1000 - 3000	/Cu mm
ABSOLUTE EOSINOPHIL COUNT BLOOD, (Calculated)	303.20	20 - 500	/Cu mm
PLATELET COUNT, Blood (Impedence)	255.00	150 - 410	1000/Cumm
E.S.R, Blood(Capillary Photometry)	<b>17.00</b>	0.00 - 15.00	1st hour
R B C COUNT, Blood (Impedence)	5.15	4.5 - 5.5	10 <sup>12</sup> /L
MCV, Blood(Calculated)	84.27	83 - 101	fl
MCH, Blood(Calculated)	28.35	27.00 - 32.60	Pg
MCHC, Blood(Calculated)	33.64	31.50 - 34.50	gm/dl
RDW, Blood (Calculated)	12.9	11.6 - 14.0	%
COMMENTS ON PERIPHERAL SMEAR : (Microscopy, Leishman stain)	The red blood cells are normocytic and normochromic. The white cell count is normal with reactive lymphocytosis. The platelets are adequate.		

\*Test performed by SYSMEX XN-550.

Absolute Neutrophil Count (ANC) <1000 - Markedly increased susceptibility of infectious diseases.

- Absolute Neutrophil Count (ANC) <500 control of endogenous microbial flora impaired.

- Absolute Neutrophil Count (ANC) <200 absent inflammatory processes.

Comments:

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

## REPORT

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**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : FLUORIDE PLASMA **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 10:34  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
FASTING GLUCOSE, Plasma(Hexokinase)	109.5	60.0 - 100.0	mg/dl

Comments:

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

*Yamini*

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## HbA1c

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:51
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:41
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Units</u>
GLYCOSYLATED HEMOGLOBIN (HbA1c)	5.3	%
Immunoturbidimetry		

### REFERENCE RANGE:

4.00 - 5.60 % Normal  
 5.70 - 6.40 % Prediabetes (The values should be co-related with Glucose levels)  
 6.10 - 7.00 % HbA1C indicates very good control in diabetes  
 7.10 - 8.00 % HbA1C indicates adequate control in diabetes  
 8.10 - 9.00 % HbA1C indicates suboptimal control in diabetes  
 >9.00% HbA1C indicates poor control in diabetes

HbA1c (%) Average Glucose mg/dl

5	97
6	126
7	154
8	183
9	212
10	240
11	269
12	298

### Note :

An estimated average glucose (eAG) can be calculated from the HbA1c values. The A1c test is also used to monitor the glucose control of diabetics over time. This helps to minimize the complications caused by chronically elevated glucose levels, such as progressive damage to kidneys, eyes, cardiovascular system, and nerves.

The A1c test, however, should not be used for screening for cystic fibrosis-related diabetes, people who have had recent severe bleeding or blood transfusions, those with chronic kidney or liver disease, or people with blood disorders such as iron-deficiency anemia, vitamin B12 deficiency anemia, and some Hemoglobin variants (e.g., patients with sickle cell disease or Thalassemia).

### Comments:

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## CORTISOL

**Reference No.** : 210333875 **Age/Sex** : 50 Years MALE **Reg. Date** : 16/03/2021 08:51  
**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 10:34  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

Investigation	Result	Biological Reference Interval	Units
CORTISOL (AM), Serum,(CLIA) (Sample collected at 7-9 am)	19.01	6.7 - 22.6	ug/dl

### Summary and Explanation of the Test:

Cortisol is the primary glucocorticoid hormone synthesized and secreted by the adrenal cortex. Cortisol is essential for life, regulating carbohydrate, protein, and lipid metabolism, maintaining normal blood pressure, and inhibiting allergic and inflammatory reactions. Cortisol is synthesized and secreted by the cortex of the adrenal gland under the direction of adrenocorticotrophic hormone (ACTH). ACTH is secreted in a circadian pattern by the anterior lobe of the pituitary gland in response to corticotropin releasing hormone (CRH) secretion by the hypothalamus. Circulating cortisol levels follow a diurnal pattern in healthy individuals. Levels are highest in the morning after waking and lowest in the evening. Disorders of the hypothalamic-pituitary-adrenal axis override this diurnal pattern. Decreased cortisol levels are induced by either primary or secondary adrenal insufficiency. Addison's disease is caused by primary adrenal insufficiency due to metabolic errors or destruction of the adrenal cortex. Secondary adrenal insufficiency is caused by pituitary destruction or failure, resulting in loss of ACTH stimulation of the adrenal gland. Cushing's syndrome is caused by increased levels of cortisol due to either primary or secondary adrenal hyperfunction. 4 Causes of primary adrenal hyperfunction are adrenal tumors and nodular adrenal hyperplasia. Secondary adrenal hyperfunction is caused by pituitary overproduction of ACTH or ectopic production of ACTH by a tumor. Increased cortisol levels are induced by pregnancy and by stress due to depression, trauma, surgery, hypoglycemia, alcoholism, uncontrolled diabetes, and starvation. Due to the diurnal pattern of secretion, an assessment of serum cortisol levels at a single timepoint is of little diagnostic value.

### Limitations:

Circulating cortisol results from patients receiving Prednisolone or Prednisone (which is converted to Prednisolone in vivo) therapy may be falsely elevated. Heterophilic antibodies in human serum can react with reagent immunoglobulins, interfering with in vitro immunoassays. Patients routinely exposed to animals or to animal serum products can be prone to this interference and anomalous values may be observed.

### Comments:

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

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## D-DIMER

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:51
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:07
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
D-DIMER (FIA)	<b>1262.35</b>	0.0 - 500.0	ngFEU/mL

### INTERPRETATION

1. D-dimer, a degradation product of cross-linked fibrin formed during activation of the coagulation system, is commonly used to exclude thromboembolic disease in outpatients suspected of having

- Deep venous thrombosis (DVT)
- pulmonary embolism (PE).
- DVT and PE is relatively common and can cause sudden, fatal embolic events in the pulmonary arteries and other regions.

2. Measurement of the D-Dimer level in plasma has been used as a screening strategy for subclinical DVT. The DVT is a high-risk factor for the stroke because of advanced age, hemiplegia, and coagulation disorders, and DVT can cause paradoxical embolic stroke via a right-to left shunt.

3. Thus, it is important to monitor the level of D-Dimer the incidence and characteristics of DVT in acute stroke patients. The Plasma D-dimer level has proven to be useful for DVT screening in chronic stroke patients undergoing rehabilitation. D-Dimer is an important prognostic indicator on monitoring post-treatment clinical status and the post therapeutic evaluation of patients.

4. Apart from DVT, PE, and DIC, D-Dimer may reflect other causes associated with fibrin formation such as

- Trauma,
- Pregnancy complications,
- Malignant disease
- Vascular abnormalities.

5. Elevated D-Dimer levels therefore have to be interpreted in the context of possible underlying diseases and clinical symptoms.

As with any laboratory test, detection of elevated levels of D-dimer in a specimen should be correlated with clinical findings.

Comments:

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



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**Ref. Doctor** : SELF **Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Hospital/NH** : **Reported** : 16/03/2021 11:57  
**Print Date** : 16/03/2021 23:14

Investigation	Result	Biological Reference Interval	Units
CRP-HS, Serum(Immunoturbidimetry)	4.53	0.00 - 1.00	mg/L

### CVD Risk Assessment

Low : 0.00 - 1.00 mg/L  
 Average : 1.00 - 3.00 mg/L  
 High : More Than 3.00 mg/L

### Reference Range For :-

Neonates 0.10 - 4.10 mg/L  
 Children 0.10 - 2.80 mg/L

**Comments:**  
 CREATINE KINASE, Serum(UV assay) 125.5 0 - 190.00 IU/L

**Comments:**

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

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## CREATINE KINASE-MB

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years    MALE	<b>Reg. Date</b> : 16/03/2021    08:52
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021    09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021    09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021    11:45
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021    23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u> <u>Interval</u>	<u>Units</u>
CREATINE KINASE-MB, Serum	2.00	0.6 - 7.0	ng/mL

### COMMENTS:

After acute myocardial infarction (AMI), CK-MB rises rapidly to peak levels within 12 hours, then declines to normal levels within 36-72 hours. The World Health Organization requires two of the following criteria for confirmation of AMI: evolutionary changes in the ECG, elevated cardiac enzymes and history of chest pain.

The CK-MB results should be interpreted in light of the total clinical presentation of the patient, including: symptoms, clinical history, data from additional tests and other appropriate information.

Comments:

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

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## LIPID PROFILE

**Reference No. :** 210333875 **Age/Sex :** 50 Years MALE **Reg. Date :** 16/03/2021 08:51  
**Patient :** MR. KAMAL TANEJA **Delivery :** Email+Pat-DP **Collected :** 16/03/2021 09:03  
**Sample Type :** SERUM **Received :** 16/03/2021 09:10  
**Ref. Doctor :** SELF **Reported :** 16/03/2021 10:34  
**Hospital/NH :** **Print Date :** 16/03/2021 23:14

Investigation	Result	Biological Reference Interval	Units
CHOLESTROL, SERUM (Enz. Colorimetry)	211.3	80.00 - 200.00	mg/dl
HDL CHOLESTEROL (Enz.Colorimetry)	42.5	30.00 - 60.00	mg/dl
TRIGLYCERIDES, SERUM (Enz.Colorimetry)	140.36	40.00 - 150.00	mg/dl
VLDL CHOLESTEROL (Calculated)	28.07	24.00 - 45.00	mg/dl
LDL CHOLESTEROL (Enz.Colorimetry)	140.73	30.00 - 100.00	mg/dl
LDL / HDL RATIO (Calculated)	3.31	0.00 - 3.00	
CHOLESTEROL / HDL RATIO(Calculated)	4.97	0.00 - 4.00	

### INTERPRETATION :-

Desirable : Less than 200 mg/dl  
 Borderline High Risk : 200 to 239 mg/dl  
 High Risk : 240 mg/dl and over, on repeated values  
 Optimal Level for Cardiac Patients : Less than 200 mg/dl

### TRIGLYCERIDES REFERENCE RANGE

> Normal - Less than 150 mg/dL,  
 > Borderline high - 150 to 199 mg/dL  
 > High - 200 to 499 mg/dL  
 > Very high - 500 mg/dL or above

HDL-C : High HDL has generally been found to be protective, decreasing the risk of coronary Artery disease (CAD) in most people. However, some recent studies have shown that in some people with high HDL, the HDL is not protective and may, in fact result in higher risk for CAD than in people with normal HDL levels. In one study it was shown that people with CAD and high HDL had underlying genetic anomalies in enzymes important in lipid turnover. Another study showed that high levels of abnormally large HDL particles were associated with increased risk of CAD. Factors that elevate HDL concentrations include chronic alcoholism, treatment with oral estrogen replacement therapy, extensive aerobic exercise, and treatment with niacin, statins, or fibrates. Smoking reduces levels of HDL cholesterol, while quitting smoking leads to a rise in the plasma HDL level.

LDL Reference Range : Levels in terms of risk for coronary heart disease :

### Adult levels:

Optimal <100 mg/dL  
 Near Optimal/ above optimal 100 -129 mg/dL  
 Borderline high 130 - 159 mg/dL  
 High 160 - 189 mg/dL  
 Very High >=190 mg/dL

Comments:

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

Yamini



## REPORT

**Reference No.** : 210333875  
**Age/Sex** : 50 Years MALE  
**Reg. Date** : 16/03/2021 08:52  
**Patient** : MR. KAMAL TANEJA  
**Delivery** : Email+Pat-DP  
**Collected** : 16/03/2021 09:03  
**Sample Type** : Blood  
**Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF  
**Reported** : 16/03/2021 10:34  
**Hospital/NH** :  
**Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u> <u>Interval</u>	<u>Units</u>
IRON, Serum(Ferrozine)	90.9	33.00 - 193.00	ug/dl
UIBC Serum(Ferrozine)	292.7	125.00 - 345.00	ug/dl
TIBC.(Calculated)	383.60	250.00 - 450.00	ug/dl

Comments:

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

*Yamini*

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# L.F.T WITH G.G.T.P

**Reference No.** : 210333875      **Age/Sex** : 50 Years      MALE      **Reg. Date** : 16/03/2021      08:51  
**Patient** : MR. KAMAL TANEJA      **Delivery** : Email+Pat-DP      **Collected** : 16/03/2021      09:03  
**Sample Type** : SERUM      **Received** : 16/03/2021      09:10  
**Ref. Doctor** : SELF      **Reported** : 16/03/2021      10:34  
**Hospital/NH** :      **Print Date** : 16/03/2021      23:14

Investigation	Result	Biological Reference Interval	Units
BILIRUBIN (TOTAL), Serum(Diazo)	0.42	0.00 - 1.20	mg/dl
BILIRUBIN (DIRECT), Serum(Diazo)	0.20	0 - 0.30	mg/dl
BILIRUBIN (INDIRECT), Serum(Calculated)	0.22	0.00 - 0.70	mg/dl
TOTAL PROTEINS Serum(Biuret)	6.5	6.40 - 8.30	gms/dl
ALBUMIN, Serum(BCG)	4.2	3.50 - 5.20	gms/dl
GLOBULIN (Calculated)	2.30	2.00 - 3.50	gms/dl
A:G RATIO (Calculated)	1.83	1.00 - 2.00	
ALKALINE PHOSPHATASE, Serum(Colorimetry)	78.4	40.00 - 130.00	U/L
SGOT, Serum(IFCC)	18.4	1.00 - 40.00	U/l
SGPT, Serum(IFCC)	19.1	2.00 - 41.00	U/l
GGTP, Serum(Enz.Colorimetry)	16.4	8.00 - 61.00	U/L

Comments:

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**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 11:41  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
FERRITIN, Serum,(CLIA)	22.0	23.90 - 336.20	ng/ml

### Summary and Explanation of the Test:

Ferritin is a compound composed of iron molecules bound to apoferritin, a protein shell. Stored iron represents about 25% of total iron in the body, and most of this iron is stored as ferritin. Ferritin is found in many body cells, but especially those in the liver, spleen, bone marrow, and in reticuloendothelial cells. Ferritin plays a significant role in the absorption, storage, and release of iron. As the storage form of iron, ferritin remains in the body tissues until it is needed for erythropoiesis. When needed, the iron molecules are released from the apoferritin shell and bind to transferrin, the circulating plasma protein that transports iron to the erythropoietic cells. Although dietary iron is poorly absorbed, the body conserves its iron stores carefully, reabsorbing most of the iron released from the breakdown of red blood cells. As a result, the body normally loses only 1 to 2 mg of iron per day, which is generally restored by the iron absorbed in the small intestine from dietary sources. Ferritin is found in serum in low concentrations and is directly proportional to the body's iron stores. Serum ferritin concentration, when analyzed with other factors such as serum iron, iron-binding capacity, and tissue iron stores, is valuable in the diagnosis of iron-deficiency anemias, anemias of chronic infection, and conditions such as thalassemia and hemochromatosis that are associated with iron overload. Measurement of serum ferritin is particularly valuable in distinguishing iron-deficiency anemias caused by low iron stores from those resulting from inadequate iron utilization.

### Limitations:

Serum ferritin values are elevated in the presence of the following conditions and do not reflect actual body iron stores:

- inflammation
- significant tissue destruction
- liver disease
- malignancies such as acute leukemia and Hodgkin's disease
- therapy with iron supplements

### Comments:

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

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## KIDNEY FUNCTION TEST (KFT)

**Reference No.** : 210333875      **Age/Sex** : 50 Years      MALE      **Reg. Date** : 16/03/2021      08:51  
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**Sample Type** : SERUM      **Received** : 16/03/2021      09:10  
**Ref. Doctor** : SELF      **Reported** : 16/03/2021      10:34  
**Hospital/NH** :      **Print Date** : 16/03/2021      23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
UREA Serum(Urease)	30.02	12.00 - 45.00	mg/dl
UREA NITROGEN(Calculated)	14.03	6.00 - 20.00	mg/dl
CREATININE SERUM(Jaffe)	1.1	0.70 - 1.20	mg/dl
URIC ACID, Serum(Colorimetry)	6.0	3.40 - 7.00	mg/dl
CALCIUM, Serum(BAPTA)	<b>8.56</b>	8.60 - 10.00	mg/dl
PHOSPHATE, Serum(Phosphomolybdate)	3.3	2.50 - 4.80	mg/dl
SODIUM, Serum(ISE Indirect)	138.8	130.00 - 149.00	meq/L
POTASSIUM, Serum(ISE Indirect)	4.31	3.50 - 5.00	meq/L
CHLORIDE, Serum(ISE Indirect)	103.4	97.0 - 107.0	meq/L

Comments:

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HOD Microbiology

## REPORT

**Reference No.** : 210333875  
**Age/Sex** : 50 Years MALE  
**Reg. Date** : 16/03/2021 08:51  
**Patient** : MR. KAMAL TANEJA  
**Delivery** : Email+Pat-DP  
**Collected** : 16/03/2021 09:03  
**Sample Type** : Blood  
**Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF  
**Reported** : 16/03/2021 10:34  
**Hospital/NH** :  
**Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u> <u>Interval</u>	<u>Units</u>
IRON, Serum(Ferrozine)	90.9	33.00 - 193.00	ug/dl
UIBC Serum(Ferrozine)	292.7	125.00 - 345.00	ug/dl
TRANSFERRIN.	323.39	200.00 - 360.00	mg/dl
TRANSFERRIN SATURATION	23.70	16.00 - 45.00	%

Comments:

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

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## Anti TG.

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:52
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 17:16
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u> <u>Interval</u>	<u>Units</u>
Anti Thyroglobulin (Autoantibodies against thyroglobulin, Serum,(ECLIA)	11.5	0.00 - 115.00	IU/mL

Comments:

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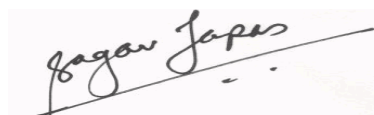
## Anti TPO.

**Reference No.** : 210333875 **Age/Sex** : 50 Years MALE **Reg. Date** : 16/03/2021 08:52  
**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 20:57  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u> <u>Interval</u>	<u>Units</u>
Anti TPO (ECLIA)	9.14	0.00 - 34.00	IU/mL

Comments:

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## FOLATE.

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:52
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 10:34
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
FOLATE, Serum,(CLIA)	>23.9	4.50 - 32.20	ng/ml

### Summary and Explanation of the Test

Folates are compounds of pteroylglutamic acid (PGA) that function as coenzymes. Folate, with vitamin B12, is essential for DNA synthesis, which is required for normal red blood cell maturation. Humans obtain folate from dietary sources including fruits, green and leafy vegetables, yeast, and organ meats. Folate is absorbed through the small intestine and stored in the liver. Low folate intake, malabsorption as a result of gastrointestinal diseases, pregnancy, and drugs such as phenytoin are causes of folate deficiency. Folate deficiency is also associated with chronic alcoholism. Folate and vitamin B12 deficiency impair DNA synthesis, causing macrocytic anemias. These anemias are characterized by abnormal maturation of red blood cell precursors in the bone marrow, the presence of megaloblasts, and decreased red blood cell survival. Since both folate and vitamin B12 deficiency can cause macrocytic anemia, appropriate treatment depends on the differential diagnosis of the deficiency. Serum folate measurement provides an early index of folate status. However, folate is much more concentrated in red blood cells than in serum so the red blood cell folate measurement more closely reflects tissue stores. Red blood cell folate concentration is considered the most reliable indicator of folate status.

### Limitations

Hemolysis significantly increases folate values due to the high folate concentrations in red blood cells. Methotrexate and leucovorin interfere with folate measurement because these drugs cross-react with folate binding proteins.

### Comments:

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## THYROID PROFILE.

**Reference No.** : 210333875      **Age/Sex** : 50 Years      MALE      **Reg. Date** : 16/03/2021      08:51  
**Patient** : MR. KAMAL TANEJA      **Delivery** : Email+Pat-DP      **Collected** : 16/03/2021      09:03  
**Sample Type** : SERUM      **Received** : 16/03/2021      09:10  
**Ref. Doctor** : SELF      **Reported** : 16/03/2021      10:34  
**Hospital/NH** :      **Print Date** : 16/03/2021      23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
FT3 Serum, (CLIA)	4.41	3.80 - 6.00	pmol/L
FREE T4, Serum,(CLIA)	11.7	7.00 - 15.96	pmol/L
TSH, Serum,(CLIA)	2.01	0.45 - 5.33	uIU/ml

### \*Pregnancy

	Units	First Trimester	Second Trimester	Third Trimester
Free T4	pmol/L	6.00 - 16.28	5.19 - 13.86	5.77 - 15.79

\* PHYSIOLOGICAL ALTERATIONS IN THYROID VALUES

\* REFERENCE RANGE :-

### Pregnancy

	Units	First Trimester	Second Trimester	Third Trimester
TSH	uIU/mL	0.05 - 3.70	0.31 - 4.35	0.41 - 5.18

\*Reference range has been changed due to change in testing platform.

Comments:

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

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## VITAMIN B12.

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:51
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : SERUM	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:41
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
VITAMIN B12, Serum,(ECLIA)	369.50		pg/ml

Category Range (pg/mL)	Range (pg/mL)
Normal	197-771
Deficient	<197.00

### Summary and Explanation of the Test

Vitamin B12, or cyanocobalamin, is a complex corrinoid compound containing four pyrrole rings that surround a single cobalt atom. Humans obtain vitamin B12 exclusively from animal dietary sources, such as meat, eggs, and milk. Vitamin B12 requires intrinsic factor, a protein secreted by the parietal cells in the gastric mucosa, for absorption. Vitamin B12 and intrinsic factor form a complex that attaches to receptors in the ileal mucosa, where proteins known as trans-cobalamins transport the vitamin B12 from the mucosal cells to the blood and tissues. Most vitamin B12 is stored in the liver as well as in the bone marrow and other tissues. Vitamin B12 and folate are critical to normal DNA synthesis, which in turn affects erythrocyte maturation. Vitamin B12 is also necessary for myelin sheath formation and maintenance. The body uses its B12 stores very economically, reabsorbing vitamin B12 from the ileum and returning it to the liver so that very little is excreted.

Clinical and laboratory findings for B12 deficiency include neurological abnormalities, decreased serum B12 levels, and increased excretion of methylmalonic acid. The impaired DNA synthesis associated with vitamin B12 deficiency causes macrocytic anemias. These anemias are characterized by abnormal maturation of erythrocyte precursors in the bone marrow, which results in the presence of megaloblasts and in decreased erythrocyte survival. Pernicious anemia is a macrocytic anemia caused by vitamin B12 deficiency that is due to lack of intrinsic factor. Low vitamin B12 intake, gastrectomy, diseases of the small intestine, malabsorption, and trans-cobalamin deficiency can also cause vitamin B12 deficiency.

### Limitations

\* kindly Correlate Clinically

### Comments:

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

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## VITAMIN D, 25 - HYDROXY

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:51
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : SERUM	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:41
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u>	<u>Units</u>
		<u>Interval</u>	
VITAMIN D, 25-HYDROXY, Serum,(CLIA)	37.2	75.00 - 250.00	nmol/L

### INTERPRETATION

Deficient	<50.0	nmol/L
Insufficient	50.0 to <75.0	nmol/L
Sufficient	75.0 - 250.0	nmol/L
Upper Safety Limit	>250.0	nmol/L

Comments:

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**Reference No.** : 210333875 **Age/Sex** : 50 Years MALE **Reg. Date** : 16/03/2021 08:51  
**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 11:57  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
HOMOCYSTEINE, Serum (CLIA)	10.2	0.00 - 15.00	umol/L

### Interpretation

Group	Folate supplemented	Nonsupplemented
Fasting/basal tHcy, µmol/L		
Pregnancy	8	10
Children < 15 years	8	10
Adults 15-65 years	12	15
Elderly > 65 years	16	20

### Summary

Homocysteine (Hcy) is a thiol-containing amino acid produced by the intracellular demethylation of methionine. Total homocysteine (tHcy) represents the sum of all forms of Hcy including forms of oxidized, proteinbound and free. Elevated levels of tHcy has emerged as an important risk factor in the assessment of cardiovascular disease. Excess Hcy in the blood stream may cause injuries to arterial vessels due to its irritant nature, and result in inflammation and plaque formation, which may eventually cause blockage of blood flow to the heart. Elevated tHcy levels are caused by four major factors, including:

1. Genetic deficiencies in enzymes involved in Hcy metabolism such as cystathionine beta-synthase (CBS), methionine synthase (MS), and methylenetetrahydrofolate reductase (MTHFR);
2. Nutritional deficiency in B vitamins such as B6, B12 and folate;
3. Renal failure for effective amino acid clearance;
4. Drug interactions, such as with nitric oxide, methotrexate and phenytoin that interfere with Hcy metabolism. Elevated levels of tHcy are also linked with Alzheimer disease, Neuropsychiatric diseases and Osteoporosis.

**Comments:**  
 NT-ProBNP (N-TERMINAL PRO B TYPE  
 NATRIURETIC PEPTIDE) 111.24 <172.00 pg/mL

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<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:45
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
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Note :

1. NT-ProBNP value increases with age, elevated levels can be seen in apparently healthy individual with increasing age.
2. NT-ProBNP values need to be interpreted in conjunction with the medical history, clinical findings and other information.
3. NT-ProBNP value <125 pg/mL exclude cardiac dysfunction with a high level of certainty in patients presenting with dyspnea.
4. Lack of NT-ProBNP elevation has been reported if Congestive Heart Failure (CHF) is very acute (first hour) or if there is Ventricular inflow obstruction.

Comments :

NT-ProBNP is a marker of atrial & ventricular distension due to increased intracardiac pressure, hence it is used as an aid in the diagnosis of CHF. The diagnostic strength of NT-ProBNP is their high sensitivity for ruling out heart failure; however, as the value increases heart failure becomes more likely. NT-ProBNP levels are correlated with New York Heart Association (NYHA) functional classes for CHF.

NYHA functional classification for CHF

CLASSES	5TH-95TH PERCENTILE	PERCENT > 125 pg/ml
I	33-3410	78.60
II	103-6567	94.00
III	126-10449	95.30
IV	148-12188	97.1

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**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 11:45  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

Investigation	Result	Biological Reference Interval	Units
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Interpretation in patients presenting with acute dyspnea

Category	Optimal cut off (pg/mL)	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Accuracy
Rule in cut off						
<50 years	450	97	93	79	99	94
50-75 years	900	90	82	83	88	85
>75 years	1800	85	73	92	55	83
Rule out cut-off						
All patients	300	99	60	77	98	83

Clinical Uses:

- As an aid in the diagnosis of suspected cases of CHF
- Detection of mild forms of cardiac dysfunction
- To assess severity of heart failure in already diagnosed cases of CHF
- For risk stratification of patients with acute Coronary Syndrome & CHF
- For monitoring therapy in patients with Left Ventricular dysfunction.

Limitations of NT-ProBNP:

Higher levels than expected

Increasing age  
 ACS  
 Renal insufficiency  
 RV Dysfunction  
 Atrial fibrillation  
 Pulmonary hypertension  
 Pulmonary embolism  
 Anemia  
 Sepsis  
 Mitral Regurgitation

Lower levels than expected

Obesity  
 Pulmonary edema  
 Pericarditis/ tamponade  
 Genetic polymorphism

Comments:

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<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:45
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

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## COVID NEUTRALIZING ANTIBODY (Anti-SARS-CoV-2 Spike Antibody)

<b>Reference No.</b> : 210333875	<b>Age/Sex</b> : 50 Years MALE	<b>Reg. Date</b> : 16/03/2021 08:51
<b>Patient</b> : MR. KAMAL TANEJA	<b>Delivery</b> : Email+Pat-DP	<b>Collected</b> : 16/03/2021 09:03
	<b>Sample Type</b> : Blood	<b>Received</b> : 16/03/2021 09:10
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 16/03/2021 11:41
<b>Hospital/NH</b> :		<b>Print Date</b> : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
Anti-SARS-CoV-2 SPIKE Antibody (ECLIA)	<b>4.97</b>	0.00 - 0.79	U/mL

ON ROCHE COBAS ANALYSER

Interpretation

<0.80 U/mL = Negative

>= 0.80 U/mL = Positive

Summary

The test is intended for quantitative determination of antibodies (including IgG) to The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) spike (S) protein receptor binding domain (RBD) in human serum and plasma. The test is intended as an aid to assess the adaptive humoral immune response to the SARS-CoV-2 S protein.

SARS-CoV-2, the causative agent of Coronavirus Disease 2019 (COVID-19), is an enveloped, single-stranded RNA Betacoronavirus. coronaviruses have been identified as agents of human infection, causing disease ranging from mild common cold to severe respiratory failure. SARS-CoV-2 is transmitted primarily from person-to-person through respiratory droplets and aerosols. The incubation period from infection to detectable viral load in the host commonly ranges from 2 to 14 days. Detection of viral load can be associated with the onset of clinical signs and symptoms, although a considerable proportion of individuals remains asymptomatic or mildly symptomatic.

Coronavirus genomes encode main structural proteins: spike (S), envelope (E), membrane (M), and nucleocapsid (N). The S protein is a very large transmembrane protein that assembles into trimers to form the distinctive surface spikes of coronaviruses. Each S monomer consists of an N-terminal S1 subunit and a membrane-proximal S2 subunit. The virus gains entry to the host cell through binding of the S protein to the angiotensin-converting enzyme (ACE2), which is present on the surface of numerous cell types including the alveolar type II cells of the lung and epithelial cells of the oral mucosa. Mechanistically, ACE2 is engaged by the receptor-binding domain (RBD) on the S1 subunit.

Upon infection with SARS-CoV-2, the host mounts an immune response against the virus, typically including production of specific antibodies against viral antigens. IgM and IgG antibodies against SARS-CoV-2 appear to arise nearly simultaneously in blood. There is significant inter-individual difference in the levels and chronological appearance of antibodies in COVID-19 patients, but median seroconversion has been observed at approximately 2 weeks. Antibodies against SARS-CoV-2 with strong neutralizing capacity, especially potent if directed against the RBD, have been identified. Numerous vaccines for COVID-19 are in development, many of which focus on eliciting an immune response to the RBD.

Comments:

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HOD Microbiology

## PROLACTIN

**Reference No.** : 210333875 **Age/Sex** : 50 Years MALE **Reg. Date** : 16/03/2021 08:51  
**Patient** : MR. KAMAL TANEJA **Delivery** : Email+Pat-DP **Collected** : 16/03/2021 09:03  
**Sample Type** : Blood **Received** : 16/03/2021 09:10  
**Ref. Doctor** : SELF **Reported** : 16/03/2021 12:10  
**Hospital/NH** : **Print Date** : 16/03/2021 23:14

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
PROLACTIN SERUM, by ECLIA Method	42.70	4.04 - 15.20	ng/ml

### Comments

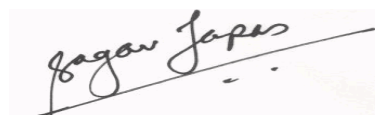
Prolactin is synthesized in the anterior pituitary and is secreted in episodes. The target organ for prolactin is the mammary gland, the development and differentiation of which is promoted by this hormone. High concentrations of prolactin have an inhibiting action on steroidogenesis of the ovaries and on hypophyseal gonadotropin production and secretion. During pregnancy the concentration of prolactin rises under the influence of elevated estrogen and progesterone production. The stimulating action of prolactin on the mammary gland leads post partum to lactation. Hyperprolactinemia (in men and women) is the main cause of fertility disorders. The determination of prolactin is utilized in the diagnosis of anovular cycles, hyperprolactinemic amenorrhea and galactorrhea, gynecomastia and azoo-spermia.

### Note

Prolactin Value may be high in early morning samples or soon after waking up. Pooled sample is advised for an accurate estimation of Prolactin Levels.

### Comments:

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



Consultant Pathologist / Microbiologist