

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

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:09  
**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Sample Type** : Blood **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 13:54  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

Investigation	Result	Biological Reference Interval	Units
HEMOGLOBIN, Blood(SLS Hemoglobin)	13.7	12.00 - 15.00	g/dl
PACKED CELL VOLUME, Blood(Impedence)	40.9	36 - 46	%
TLC, Blood (Flow cytometry)	7750.00	4000 - 11000	/cumm
<b><u>D.L.C., Blood (Flow Cytometry)</u></b>			
POLYMORPHS	58.0	44.00 - 68.00	%
LYMPHOCYTES	36.0	25.00 - 44.00	%
EOSINOPHILS	1.00	0.00 - 4.00	%
MONOCYTES	5.0	0.00 - 7.00	%
ABSOLUTE NEUTROPHIL COUNT(Blood, Calculated).	4495.00	2000 - 7000	/Cu mm
ABSOLUTE LYMPHOCYTE COUNT(Blood, Calculated).	2790.00	1000 - 3000	/Cu mm
ABSOLUTE EOSINOPHIL COUNT BLOOD, (Calculated)	77.50	20 - 500	/Cu mm
PLATELET COUNT, Blood (Impedence)	338.00	150 - 410	1000/Cumm
E.S.R, Blood(Capillary Photometry)	3.00	0.00 - 20.00	1st hour
R B C COUNT, Blood (Impedence)	4.46	3.8 - 4.8	10 <sup>12</sup> /L
MCV, Blood(Calculated)	91.70	83 - 101	fl
MCH, Blood(Calculated)	30.72	27.00 - 32.60	Pg
MCHC, Blood(Calculated)	33.50	31.50 - 34.50	gm/dl
RDW, Blood (Calculated)	12.6	11.6 - 14.0	%
COMMENTS ON PERIPHERAL SMEAR : (Microscopy, Leishman stain)	The red blood cells are normocytic and normochromic. The white cells are normal. 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 \*\*\*

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## REPORT

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**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Sample Type** : FLUORIDE PLASMA **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 14:12  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
FASTING GLUCOSE, Plasma(Hexokinase)	77.0	60 - 100	mg/dl
Comments: BLOOD GLUCOSE PP,Plasma,(Hexokinase)	95.7	60.00 - 140.00	mg/dl

Post 75 gms oral glucose : <140 = Normal, 140- 199 = Impaired glucose tolerance, 200 or more = Diabetes.

Conditions in which the post prandial sugar is less than the fasting sugar:

1). Excessive increase in insulin. (2). Rapid gastric emptying. (3). Brisk glucose absorption.

The probable causes are :

1). Early type II diabetes. (2). Drugs like Salicylates, Beta Blockers, Pentamidine, Alcohol etc.(3). Foods with higher glycaemic index (4). Exercise in between samples. (5). Family history of diabetes. (6). Partial or total gastrectomy.

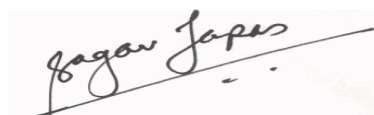
Comments:

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## HbA1c

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**Sample Type** : Blood **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 14:53  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

Investigation	Result	Units
GLYCOSYLATED HEMOGLOBIN (HbA1c)	4.9	%
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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<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
CRP-HS, Serum(Immunoturbidimetry)	1.02	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:

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



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## LIPID PROFILE

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:09  
**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Sample Type** : SERUM **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 14:12  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

Investigation	Result	Biological Reference Interval	Units
CHOLESTROL, SERUM (Enz. Colorimetry)	116.4	80.00 - 200.00	mg/dl
HDL CHOLESTEROL (Enz.Colorimetry)	59.8	40.00 - 70.00	mg/dl
TRIGLYCERIDES, SERUM (Enz.Colorimetry)	70.35	40.00 - 150.00	mg/dl
VLDL CHOLESTEROL (Calculated)	<b>14.07</b>	24.00 - 45.00	mg/dl
LDL CHOLESTEROL (Enz.Colorimetry)	42.53	30.00 - 100.00	mg/dl
LDL / HDL RATIO (Calculated)	0.71	0.00 - 3.00	
CHOLESTEROL / HDL RATIO(Calculated)	1.95	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 \*\*\*

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

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**Sample Type** : SERUM **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 14:19  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

Investigation	Result	Biological Reference Interval	Units
BILIRUBIN (TOTAL), Serum(Diazo)	0.43	0.00 - 1.20	mg/dl
BILIRUBIN (DIRECT), Serum(Diazo)	0.21	0 - 0.30	mg/dl
BILIRUBIN (INDIRECT), Serum(Calculated)	0.22	0.00 - 0.70	mg/dl
TOTAL PROTEINS Serum(Biuret)	7.0	6.40 - 8.30	gms/dl
ALBUMIN, Serum(BCG)	4.8	3.50 - 5.20	gms/dl
GLOBULIN (Calculated)	2.20	2.00 - 3.50	gms/dl
A:G RATIO (Calculated)	<b>2.18</b>	1.00 - 2.00	
ALKALINE PHOSPHATASE, Serum(Colorimetry)	63.4	35.00 - 105.00	U/L
SGOT, Serum(IFCC)	14.5	1.00 - 32.00	U/l
SGPT, Serum(IFCC)	13.3	2.00 - 33.00	U/l
GGTP, Serum(Enz.Colorimetry)	15.3	5.00 - 36.00	U/L

Comments:

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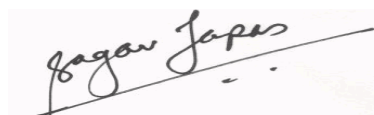
## KIDNEY FUNCTION TEST (KFT)

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:09  
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**Hospital/NH** : **Reported** : 02/02/2021 14:12  
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<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
UREA Serum(Urease)	23.77	12.00 - 45.00	mg/dl
UREA NITROGEN(Calculated)	11.11	6.00 - 20.00	mg/dl
CREATININE SERUM(Jaffe)	0.51	0.50 - 0.90	mg/dl
URIC ACID, Serum(Colorimetry)	5.1	2.40 - 5.70	mg/dl
CALCIUM, Serum(BAPTA)	9.42	8.60 - 10.00	mg/dl
PHOSPHATE, Serum(Phosphomolybdate)	4	2.50 - 4.80	mg/dl
SODIUM, Serum(ISE Indirect)	134.1	130.00 - 149.00	meq/L
POTASSIUM, Serum(ISE Indirect)	4.18	3.50 - 5.00	meq/L
CHLORIDE, Serum(ISE Indirect)	98.4	97.0 - 107.0	meq/L

Comments:

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## FOLATE.

<b>Reference No.</b> : 210211213	<b>Age/Sex</b> : 21 Years FEMALE	<b>Reg. Date</b> : 02/02/2021 13:09
<b>Patient</b> : MISS. MUSKAN CHANANA	<b>Delivery</b> : EMAIL	<b>Collected</b> : 02/02/2021 13:16
	<b>Sample Type</b> : Blood	<b>Received</b> :
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 02/02/2021 14:19
<b>Hospital/NH</b> :		<b>Print Date</b> 02/02/2021 15:33

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u> <u>Interval</u>	<u>Units</u>
FOLATE, Serum,(CLIA)	23.1	4.80 - 37.30	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:

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

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## THYROID PROFILE.

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:09  
**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Ref. Doctor** : SELF **Sample Type** : SERUM **Received** :  
**Hospital/NH** : **Reported** : 02/02/2021 14:12  
**Print Date** : 02/02/2021 15:33

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
FT3 Serum, (CLIA)	5.05	3.80 - 6.00	pmol/L
FREE T4, Serum,(CLIA)	12.3	7.00 - 15.96	pmol/L
TSH, Serum,(CLIA)	1.57	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 :-

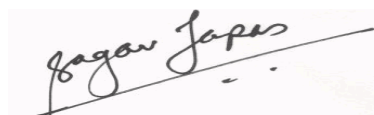
Pregnancy

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:

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## REPORT

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:07  
**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Sample Type** : Blood **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 14:53  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

Investigation	Result	Biological Reference Interval	Units
INSULIN FASTING, Serum,(CLIA)	10.97	2.60 - 24.90	uU/ml
Comments: INSULIN PP, Serum,(CLIA)	27.37	4.00 - 56.00	mU/L

### Summary and Explanation of the Test

Insulin is a protein hormone that is synthesized, stored, and secreted by the beta cells located in the islets of Langerhans in the pancreas. Insulin is responsible for regulating glucose concentrations in the blood. Initially in the beta cells, insulin exists as a large molecule (MW ~12000) called preproinsulin.

Insulin is released in response to the presence of glucose in the blood typically after the ingestion of a meal. A normal healthy individual produces 40 to 50 units of insulin each day. The half-life of insulin in serum or plasma is 5 to 10 minutes. Approximately 50% of the insulin released into the portal circulation is cleared by the liver. Insulin binds to receptor cells located on cell membranes of target tissues. The target tissues are primarily liver, fat, and muscle tissue. Insulin lowers glucose concentrations in the blood by stimulating glycogenolysis in the liver, triglyceride synthesis in adipose tissue, and protein synthesis in muscle. Recent studies have indicated that insulin and insulin receptors may play a role in learning and memory. The interruption of insulin production and insulin receptor activity may lead to deficits in learning and memory formation. Increased insulin production is common in the development of cancers. If insulin production is not stimulated, blood glucose levels will not be lowered and hyperglycemia results. Fasting hyperglycemia supports the diagnosis of diabetes mellitus.

There are two types of diabetes mellitus: type I or insulin-dependent diabetes mellitus (IDDM) and type II or non-insulin-dependent diabetes mellitus (NIDDM). Insulin therapy is used for insulin-dependent diabetes mellitus (IDDM) patients and many non-insulin-dependent diabetes mellitus (NIDDM) patients. In type I diabetes (IDDM) there is a deficiency of insulin. This can be the result of autoimmune destruction of the beta cells or the presence of autoantibodies to insulin. Many factors can play a role in the development of Type II diabetes (NIDDM). Type II diabetes (NIDDM) can result if there is a decreased biological response to circulating insulin (insulin resistance) or if there is decreased or diminished insulin secretion due to beta cell failure. Insulin levels are not typically used in the diagnosis or management of diabetic patients. Insulin levels can be useful in evaluating patients with fasting hypoglycemia, in determining insulin resistance in the general population, and in assessing abnormalities in beta cell secretory function. Insulin levels are used in studying the pathophysiology of diabetes.

### Limitations

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. Additional information may be required for diagnosis. Insulin autoantibodies in human serum may interfere and cause discordant results.

### Comments:

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## VITAMIN B12.

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**Sample Type** : SERUM  
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**Hospital/NH** :  
**Print Date** : 02/02/2021 15:33

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference Interval</u>	<u>Units</u>
VITAMIN B12, Serum,(ECLIA)	486.00		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 \*\*\*



Consultant Pathologist / Microbiologist

## VITAMIN D, 25 - HYDROXY

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:09  
**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Ref. Doctor** : SELF **Sample Type** : SERUM **Received** :  
**Hospital/NH** : **Reported** : 02/02/2021 14:53  
**Print Date** : 02/02/2021 15:33

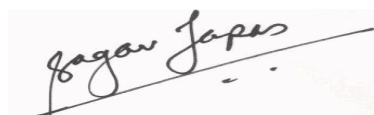
<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u>	<u>Units</u>
		<u>Interval</u>	
VITAMIN D, 25-HYDROXY, Serum,(CLIA)	66.4	75.00 - 250.00	nmol/L

### 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:

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



Consultant Pathologist / Microbiologist

## COVID-19 ANTIBODY IgG.

<b>Reference No.</b> : 210211213	<b>Age/Sex</b> : 21 Years FEMALE	<b>Reg. Date</b> : 02/02/2021 13:08
<b>Patient</b> : MISS. MUSKAN CHANANA	<b>Delivery</b> : EMAIL	<b>Collected</b> : 02/02/2021 13:16
	<b>Sample Type</b> : Blood	<b>Received</b> :
<b>Ref. Doctor</b> : SELF		<b>Reported</b> : 02/02/2021 14:19
<b>Hospital/NH</b> :		<b>Print Date</b> : 02/02/2021 15:33

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u>	<u>Units</u>
COVID-19 ANTIBODY IgG, (CLIA) SERUM	0.02^Non-Reactive	0.00 - 0.80	S/CO

### Interpretation

0.00 To <= 0.80 NON REACTIVE  
 >0.80 To <1.00 EQUIVOCAL  
 >= 1.00 REACTIVE

Comments:

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

*Yamini*

Consultant Pathologist / Microbiologist

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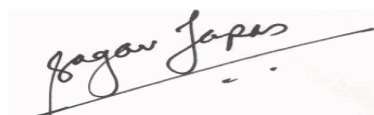
## DHEA-S

**Reference No.** : 210211213 **Age/Sex** : 21 Years FEMALE **Reg. Date** : 02/02/2021 13:08  
**Patient** : MISS. MUSKAN CHANANA **Delivery** : EMAIL **Collected** : 02/02/2021 13:16  
**Sample Type** : Blood **Received** :  
**Ref. Doctor** : SELF **Reported** : 02/02/2021 14:12  
**Hospital/NH** : **Print Date** : 02/02/2021 15:33

<u>Investigation</u>	<u>Result</u>	<u>Biological Reference</u>	<u>Units</u>
		<u>Interval</u>	
DHEA-S	373.7	18.00 - 391.00	µg/dL

Comments:

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



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