

Patient Name : Ms.MEENAKSHI KUSHWAHA  
Age/Gender : 56 Y 3 M 9 D /F  
UHID/MR No : APJ1.0032153919  
Visit ID : DSDGOPV8072  
Ref Doctor : Dr.SELF  
IP/OP NO :

Collected : 12/Jun/2025 10:36AM  
Received : 12/Jun/2025 01:21PM  
Reported : 12/Jun/2025 02:37PM  
Status : Final Report  
Client Name : PUP 24X7\_CREDIT  
Center location : SIGRA,VARANASI

**DEPARTMENT OF BIOCHEMISTRY**

**APOLLO VITAMIN CHECK - BASIC**

Test Name	Result	Unit	Bio. Ref. Interval	Method
<b>CALCIUM , SERUM</b>	9.20	mg/dL	8.4 - 10.2	Arsenazo-III

**Comments:-**

Serum calcium measurements are done to monitor and diagnose disorders of skeletal system, parathyroid gland, kidney, muscular disorders, and abnormal vitamin D and protein levels.



*Alka Gupta*

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Consultant Pathologist

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SIN No:BI26234016

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### DEPARTMENT OF IMMUNOLOGY

Test Name	Result	Unit	Bio. Ref. Interval	Method
<b>THYROID PROFILE TOTAL (T3, T4, TSH) , SERUM</b>				
TRI-iodothyronine (T3, TOTAL)	0.7	ng/mL	0.67-1.81	ELFA
THYROXINE (T4, TOTAL)	6.49	µg/dL	4.66-9.32	ELFA
TSH (Ultrasensitive/4thGen)	3.540	µIU/mL	0.25-5.0	ELFA

#### Comment:

For pregnant females	Bio Ref Range for TSH in uIU/ml (As per American Thyroid Association)
First trimester	0.1 - 2.5
Second trimester	0.2 - 3.0
Third trimester	0.3 - 3.0

1. TSH is a glycoprotein hormone secreted by the anterior pituitary. TSH activates production of T3 (Triiodothyronine) and its prohormone T4 (Thyroxine). Increased blood level of T3 and T4 inhibit production of TSH.
2. TSH is elevated in primary hypothyroidism and will be low in primary hyperthyroidism. Elevated or low TSH in the context of normal free thyroxine is often referred to as sub-clinical hypo- or hyperthyroidism respectively.
3. Both T4 & T3 provides limited clinical information as both are highly bound to proteins in circulation and reflects mostly inactive hormone. Only a very small fraction of circulating hormone is free and biologically active.
4. Significant variations in TSH can occur with circadian rhythm, hormonal status, stress, sleep deprivation, medication & circulating antibodies.

TSH	T3	T4	FT4	Conditions
High	Low	Low	Low	Primary Hypothyroidism, Post Thyroidectomy, Chronic Autoimmune Thyroiditis
High	N	N	N	Subclinical Hypothyroidism, Autoimmune Thyroiditis, Insufficient Hormone Treatment.
N/Low	Low	Low	Low	Secondary and Tertiary Hypothyroidism
Low	High	High	High	Primary Hyperthyroidism, Goitre, Thyroiditis, Drug effects, Early Pregnancy
Low	N	N	N	Subclinical Hyperthyroidism
Low	Low	Low	Low	Central Hypothyroidism, Treatment with Hyperthyroidism
Low	N	High	High	Thyroiditis, Interfering Antibodies
N/Low	High	N	N	T3 Thyrotoxicosis, Non thyroidal causes
High	High	High	High	Pituitary Adenoma; TSHoma/Thyrotropinoma



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DEPARTMENT OF IMMUNOLOGY  
 APOLLO VITAMIN CHECK - BASIC

Test Name	Result	Unit	Bio. Ref. Interval	Method
VITAMIN D (25 - OH VITAMIN D) , SERUM	22.5	ng/mL		ELFA

Comment:

BIOLOGICAL REFERENCE RANGES

VITAMIN D STATUS	VITAMIN D 25 HYDROXY (ng/mL)
DEFICIENCY	<10
INSUFFICIENCY	10 – 30
SUFFICIENCY	30 – 100
TOXICITY	>100

The biological function of Vitamin D is to maintain normal levels of calcium and phosphorus absorption. 25-Hydroxy vitamin D is the storage form of vitamin D. Vitamin D assists in maintaining bone health by facilitating calcium absorption. Vitamin D deficiency can also cause osteomalacia, which frequently affects elderly patients.

Vitamin D Total levels are composed of two components namely 25-Hydroxy Vitamin D2 and 25-Hydroxy Vitamin D3 both of which are converted into active forms. Vitamin D2 level corresponds with the exogenous dietary intake of Vitamin D rich foods as well as supplements. Vitamin D3 level corresponds with endogenous production as well as exogenous diet and supplements.

Vitamin D from sunshine on the skin or from dietary intake is converted predominantly by the liver into 25-hydroxy vitamin D, which has a long half-life and is stored in the adipose tissue. The metabolically active form of vitamin D, 1,25-di-hydroxy vitamin D, which has a short life, is then synthesized in the kidney as needed from circulating 25-hydroxy vitamin D. The reference interval of greater than 30 ng/mL is a target value established by the Endocrine Society.

**Decreased Levels:-** Inadequate exposure to sunlight, Dietary deficiency, Vitamin D malabsorption, Severe Hepatocellular disease., Drugs like Anticonvulsants, Nephrotic syndrome.

**Increased levels:-** Vitamin D intoxication.



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**DEPARTMENT OF IMMUNOLOGY**

**APOLLO VITAMIN CHECK - BASIC**

Test Name	Result	Unit	Bio. Ref. Interval	Method
VITAMIN B12 , SERUM	440	pg/mL	120-914	CLIA

**Comment:**

Population based data reflecting exact scenario of vitamin B12 levels in Indian population is still evolving, however, different studies reporting a deficiency in adults, pregnant women and children ranging from 16% to 77% with average of about 47%. This high incidence is attributed to vegetarian food habits of large majority of Indian population.

Vitamin B12 deficiency frequently causes macrocytic anemia, glossitis, peripheral neuropathy, weakness, hyperreflexia, ataxia, loss of proprioception, poor coordination, and affective behavioral changes. A significant increase in RBC MCV may be an important indicator of vitamin B12 deficiency. B12 levels in the range of 150 to 190 pg/ml may not be associated with any clinical manifestations, while B12 levels below 100 pg/ml are often associated with clinical symptoms. However, for an individual based on other co-morbid conditions or other nutritional deficiency (especially folate) the manifestations can vary accordingly.

If clinical symptoms suggest deficiency, measurement of active vitamin B12, MMA and homocysteine should be considered as further workup.

\*\*\* End Of Report \*\*\*

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