Mrs. SHILPA GANNA
WADALA, MUMBAI
Tel No : 9819169088
PIN No: 400037
PID NO: P112000280675
Age: 35.0 Year(s) Sex: Female

Reference:
Sample Collected At:
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Shop no 9 ground floor dosti apt , dosti neptune chs ltd 1/141 & 1a/141, dosti estate sm road wadala east mumbai - 37.
PROCESSING LOCATION:- Metropolis Healthcare Ltd, Unit No. 409- 416, 4th Floor, Commercial Building-1, Kohinoor Mall, Mumbai-70

VID: 11209350000980
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29/09/2020 10:36 AM
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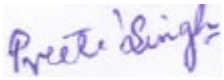
CBC Haemogram

Investigation	Observed Value	Unit	Biological Reference Interval
Erythrocytes			
Haemoglobin (Hb)	12.1	gm/dL	12.0-16
Erythrocyte (RBC) Count	4.65	mill/cu.mm	4.2-5.4
PCV (Packed Cell Volume)	**36.9**	%	37-47
MCV (Mean Corpuscular Volume)	**79.3**	fL	82-101
MCH (Mean Corpuscular Hb)	**26.0**	pg	27-34
MCHC (Mean Corpuscular Hb Concn.)	32.8	g/dL	31.5-36
RDW (Red Cell Distribution Width)	13.3	%	11.5-14.0
RBC Morphology			
Remark	Normochromic Normocytic		
Leucocytes			
Total Leucocytes (WBC) count	6,200	cells/cu.mm	4300-10300
Absolute Neutrophils Count	2852	/c.mm	2000-7000
Absolute Lymphocyte Count	2852	/c.mm	1000-3000
Absolute Monocyte Count	372	/c.mm	200-1000
Absolute Eosinophil Count	124	/c.mm	20-500
Absolute Basophil Count	**0**	/c.mm	20-100
Neutrophils	46	%	40-80
Lymphocytes	**46**	%	20-40
Monocytes	6	%	2.0-10
Eosinophils	2	%	1-6
Basophils	0	%	0-2
Platelets			
Platelet count	287	10^3 / µl	140-440
MPV (Mean Platelet Volume)	**7.6**	fL	7.8-11
PCT (Platelet crit)	0.219	%	0.2-0.5
PDW (Platelet Distribution Width)	16.8	%	9-17

Note:- Kindly note change in reference ranges.

EDTA Whole Blood-Tests done on Automated Five Part Cell Counter. (RBC and Platelet count by impedance/Hydrodynamic focusing,WBC and differential by VCS technology/Impedance/Flow cytometry.Rest are calculated parameters).All Abnormal Haemograms are reviewed confirmed microscopically.Differential count is based on approximately 10,000 cells.



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Investigation	Observed Value	Unit	Biological Reference Interval
Vitamin B12 level* (Serum,ECLIA)	266	pg/mL	197-771 Note : Change in Method & Reference range

Interpretation :

1. Vit B12 levels are decreased in megaloblastic anemia, partial/total gastrectomy, pernicious anemia, peripheral neuropathies, chronic alcoholism, senile dementia, and treated epilepsy.
2. An associated increase in homocysteine levels is an independent risk marker for cardiovascular disease and deep vein thrombosis.
3. HoloTranscobalamin II levels are a more accurate marker of active VitB12 component.

Interpretation Note : Patients on Biotin supplement may have interference in some immunoassays. With individuals taking high dose Biotin (more than 5 mg per day) supplements, at least 8-hour wait time before blood draw is recommended. Ref: Arch Pathol Lab Med—Vol 141, November 2017

Glucose fasting (Plasma-F,Hexokinase)	89	mg/dL	Normal: 70-100 Impaired Fasting Glucose(IFG): 100-125 Diabetes mellitus: >= 126 (on more than one occassion) (American diabetes association guidelines 2019)
BUN-Blood Urea Nitrogen* (Serum,Urease)	6.3	mg/dL	6-20 Note: Change in method and reference range

Remark: In blood, Urea is usually reported as BUN and expressed in mg/dl. BUN mass units can be converted to urea mass units by multiplying by 2.14.

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Investigation	Observed Value	Unit	Biological Reference Interval
ESR - Erythrocyte Sedimentation Rate (EDTA Whole Blood)	18	mm/hr	0-20

Method: Automated Westergren

Interpretation:

1. It indicates presence and intensity of an inflammatory process, never diagnostic of a specific disease. Changes are more significant than a single abnormal test.
2. It is a prognostic test and used to monitor the course or response to treatment of diseases like tuberculosis, bacterial endocarditis, acute rheumatic fever, rheumatoid arthritis, SLE, Hodgkins disease, temporal arteritis, polymyalgia rheumatica.
3. It is also increased in pregnancy, multiple myeloma, menstruation, and hypothyroidism.

Creatinine * (Serum,Jaffe)	0.60	mg/dL	0.60-1.10 Note : Change in Reference range
Uric Acid * (Serum,Uricase)	3.6	mg/dL	2.4-5.7 Please note change in referance range.
Calcium* (Serum,NM-BAPTA)	9.3	mg/dL	8.6-10.0 Note: Change in method and reference range.
Phosphorous * (Serum,Molybdate UV)	3.1	mg/dL	2.5-4.5 Please note change in rferance range and method.
Sodium* (Serum,ISE Indirect)	137	mmol/L	136-145
Potassium* (Serum,ISE Indirect)	4.6	mmol/L	3.5-5.1
Chlorides* (Serum,ISE Indirect)	105	mmol/L	98-107 Note: Change in method and reference range.

BilirubinTotal, Direct, IndirectSerum
(Serum)

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Investigation	Observed Value	Unit	Biological Reference Interval
Bilirubin-Total* (Diazo)	0.55	mg/dL	0-1.2

Interpretation :

1. Total Bilirubin is the sum of the unconjugated and conjugated fractions. Total Bilirubin is elevated in hepatitis, cirrhosis, haemolytic disorders , several inherited enzyme deficiencies, and conditions causing hepatic obstruction.
2. Neonatal Bilirubin quantitation is used to monitor diseases causing jaundice in the new-born, chiefly erythroblastosis fetalis (also caused haemolytic disease of the newborn or HDN.)
3. Physiologic jaundice is seen at serum bilirubin concentrations from 7 to 17 mg/dl. Serum bilirubin concentrations greater than 17 mg/dl may be pathologic. The primary concern is the potential for bilirubin encephalopathy or kernicterus.

Bilirubin-Direct* (Diazo)	0.20	mg/dL	0.0-0.3

Note: Direct Bilirubin is elevated in conditions causing hepatic obstruction , hepatitis, cirrhosis, several inherited enzyme deficiencies, and inherited defects in canalicular excretion.

Bilirubin- Indirect (Calculated)	0.35	mg/dL	0.1-1.0
Proteins (Serum)			
Total Protein* (Biuret)	6.82	g/dL	6.4-8.3 Note: Change in reference range
Albumin* (Bromocresol green)	4.13	g/dL	3.5-5.2 Please note change in Reference range
Globulin	2.69	g/dL	1.8-3.6
A/G Ratio (Calculated)	1.54		1.1-2.2
SGPT (ALT)* (Serum,Enzymatic)	17	U/L	0-33 Note: Change in reference range.
SGOT (AST)* (Serum,Enzymatic)	16	U/L	0-32 Note: Change in reference range.

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HbA1C- Glycated Haemoglobin, blood by HPLC method

(EDTA Whole Blood)

Investigation	Observed Value	Unit	Biological Reference Interval
HbA1C- Glycated Haemoglobin (HPLC)	5.2	%	Non-diabetic: <= 5.6 Pre-diabetic: 5.7-6.4 Diabetic: >= 6.5 Refer interpretation for monitoring ranges.
Estimated Average Glucose (eAG)	102.54	mg/dL	

Interpretation & Remark:

1. HbA1c is used for monitoring diabetic control. It reflects the estimated average glucose (eAG).
2. HbA1c has been endorsed by clinical groups & ADA (American Diabetes Association) guidelines 2017, for diagnosis of diabetes using a cut-off point of 6.5%.
3. Trends in HbA1c are a better indicator of diabetic control than a solitary test.
4. Low glycated haemoglobin(below 4%) in a non-diabetic individual are often associated with systemic inflammatory diseases, chronic anaemia(especially severe iron deficiency & haemolytic), chronic renal failure and liver diseases. Clinical correlation suggested.
5. To estimate the eAG from the HbA1C value, the following equation is used: eAG(mg/dl) = 28.7*A1c-46.7
6. Interference of Haemoglobinopathies in HbA1c estimation.
   A. For HbF > 25%, an alternate platform (Fructosamine) is recommended for testing of HbA1c.
   B. Homozygous hemoglobinopathy is detected, fructosamine is recommended for monitoring diabetic status
   C. Heterozygous state detected (D10/ Tosho G8 is corrected for HbS and HbC trait).
7. **In known diabetic patients, following values can be considered as a tool for monitoring the glycemic control.**
   Excellent Control - 6 to 7 %,
   Fair to Good Control - 7 to 8 %,
   Unsatisfactory Control - 8 to 10 %
   and Poor Control - More than 10 % .

Note : Hemoglobin electrophoresis (HPLC method) is recommended for detecting hemoglobinopathy.

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Investigation	Observed Value	Unit	Biological Reference Interval
Lipid Profile-2 (Serum)			
Cholesterol-Total* (Enzymatic)	179	mg/dL	Desirable - Upto 200 Borderline high - 200-240 High - Above 240 Desirable: < 200 Borderline High: 200-240 High: >= 240
Triglycerides level* (Enzymatic)	141	mg/dL	Normal : Below 150 Borderline High: 150-199 High: 200-499 Very High : Equal to and above 500 Normal: < 150 Borderline High: 150-199 High: 200-499 Very High: >= 500 Note: Change in reference range
HDL Cholesterol* (Homogeneous enzymatic colorimetric assay)	52	mg/dL	Major risk factor for heart disease: < 40 Negative risk factor for heart disease: >= 60
Non HDL Cholesterol (Enzymatic)	127.0	mg/dL	Optimal: < 130 Desirable: 130-159 Borderline high: 159-189 High: 189-220 Very High: >= 220
LDL Cholesterol (Enzymatic)	98.8	mg/dL	Optimal: < 100 Near Optimal: 100-129 Borderline high: 130-159 High: 160-189 Very High: >= 190
VLDL Cholesterol (Enzymatic)	28.2	mg/dL	6-38
LDL/HDL RATIO (Enzymatic)	1.9		2.5-3.5
CHOL/HDL RATIO (Enzymatic)	**3.44**		3.5-5

Note: Reference Interval as per National Cholesterol Education Program (NCEP) Adult Treatment Panel III Report.

VLDL,CHOL/HDL RATIO,LDL/HDL RATIO,LDL Cholesterol,serum,Non HDL Colesterol are calculated parameters

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Investigation	Observed Value	Unit	Biological Reference Interval
TSH(Ultrasensitive)* (Serum,ECLIA)	2.34	µIU/mL	0.54-5.3 First Trimester : 0.33-4.59 Second Trimester : 0.35-4.10 Third trimester : 0.21-3.15 Note : Change in Method & Reference range.

Interpretation :

1. AS per published literature and internal verification studies, TSH values on Cobas by ECLIA method gives higher values (~30%) than Abbott CMIA. Hence, suggested biological reference intervals for Roche ECLIA is 0.54–5.3 μIU/mL **Reference**: Clinical Chemistry 50:12, 2338-2344 (2004) and Ind J Clin Biochem (Apr-June 2014) 29(2):189–195. AACE (American association of clinical endocrinologist) recommends TSH BRI as 0.45 to 4.5 μIU/mL
2. TSH results between 5.3 to 15 show considerable physiologic & seasonal variation, suggest clinical correlation or repeat testing with fresh sample
3. TSH results between 0.1 to 0.54 require correlation with patient age & clinical symptoms. As with increasing age, there are marked changes in thyroid hormone production, metabolism & its actions resulting in an increased prevalence of subclinical thyroid disease
4. TSH values may be transiently altered because of non thyroidal illness like severe infections,liver disease, renal and heart failure,severe burns, trauma and surgery etc .
5. Drugs that decrease TSH values e.g:L-dopa,Glucocorticoid Drugs that increase TSH values e.g Iodine,Lithium,Amiodaro

Note :
Patients on Biotin supplement may have interference in some immunoassays. With individuals taking high dose Biotin (more than 5 mg per day) supplements, at least 8-hour wait time before blood draw is recommended.
Ref: Arch Pathol Lab Med—Vol 141, November 2017

Free T4* (Serum,ECLIA)	1.26	ng/dL	0.93-1.7 First Trimester : 0.7-2.0 Second Trimester : 0.5-1.6 Third Trimester : 0.5-1.6 Note : Change in Method & Reference range.

Interpretation :

Total T3 & T4 values may also be altered in other conditions due to changes in serum proteins or binding sites Pregnancy, Drugs (Androgens,Estrogens, O C Pills ,Phenytoin), Nephrosis etc. In such cases Free T3 and Free T4 give corrected values.

Note :
Patients on Biotin supplement may have interference in some immunoassays. With individuals taking high dose Biotin (more than 5 mg per day) supplements, at least 8-hour wait time before blood draw is recommended.
Ref: Arch Pathol Lab Med—Vol 141, November 2017

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Investigation	Observed Value	Unit	Biological Reference Interval
Free T3* (Serum,ECLIA)	2.48	pg/mL	2.0-4.4 First Trimester :2.46 - 3.49 Second Trimester : 2.09 - 3.55 Third trimester : 2.01 - 3.27 Note : Change in Method & Reference range

Interpretation :

Total T3 & T4 values may also be altered in other conditions due to changes in serum proteins or binding sites Pregnancy, Drugs (Androgens,Estrogens, O C Pills ,Phenytoin), Nephrosis etc. In such cases Free T3 and Free T4 give corrected values.

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Investigation	Observed Value	Unit	Biological Reference Interval
25 Hydroxy (OH) Vit D* (Serum,ECLIA)	39.1	ng/mL	Deficiency: < 10 Insufficiency: 10-30 Sufficiency: 30-100 Hypervitaminosis: > 100 Note : Change in Method

Interpretation :

1. Vitamin D is a fat soluble vitamin and exists in two main forms as 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.
2. 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. For diagnosis of vitamin D deficiency it is recommended to have clinical correlation with serum 25(OH)vitamin D, serum calcium, serum PTH & serum alkaline phosphatase.
3. During monitoring of oral vitamin D therapy- suggested testing of serum 25(OH)vitamin D is after 12 weeks or 3 mths of treatment. However, the required dosage of vitamin D supplements & time to achieve sufficient vitamin D levels show significant seasonal(especially winter) & individual variability depending on age, body fat, sun exposure, physical activity ,genetic factors(especially variable vitamin D receptor responses), associated liver or renal disease, malabsorption syndromes and calcium or magnesium deficiency influencing the vitamin D metabolism Vitamin D toxicity is known but very rare.kindly correlate clinically, repeat with fresh sample if indicated.

Associated Test Profile :

- For diagnosis of vitamin D deficiency it is recommended to have clinical correlation with serum 25(OH)vitamin D and serum PTH.An inverse relationship exists between PTH and 25(OH)D levels, Parathyroid hormone levels start to rise at 25(OH)D levels below 31 ng/mL & usually decrease after the correction of vitamin D insufficiency.Thus, restoration of PTH and 25 (OH)D levels to normalcy after adequate vitamin D replacement therapy is a useful monitoring strategy.

Interpretation Note :
Patients on Biotin supplement may have interference in some immunoassays. With individuals taking high dose Biotin (more than 5 mg per day) supplements, at least 8-hour wait time before blood draw is recommended.
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Investigation	Observed Value	Unit	Biological Reference Interval
Alkaline Phosphatase* (Serum,pNPP)	69	U/L	35-104 Note : Change in reference range

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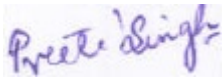
Routine Examination Urine

Investigation	Observed Value	Unit	Biological Reference Interval
GENERAL EXAMINATION			
Colour	Pale Yellow		Pale Yellow
Transparency (Appearance)	Clear		Clear
Reaction (pH)	6		4.5-8
Specific Gravity	1.01		1.005-1.025
CHEMICAL EXAMINATION (AUTOMATED URINE CHEMISTRY)			
Urine Protein (Albumin)	Absent		Absent
Urine Ketones (Acetone)	Absent		Absent
Urine Glucose (Sugar)	Absent		Absent
Urobilinogen	Normal		Normal
Bilirubin	Negative		Negative
Nitrite	Negative		Negative
MICROSCOPIC EXAMINATION(CUVETTE BASED IMAGING TECHNOLOGY)			
Red blood cells	0	/hpf	0-2
Dysmorphic Red Blood Cells	Absent		Absent
Pus cells (WBCs)	1.7	/hpf	0-5
Epithelial cells	0	/hpf	0-5
Crystals	0	/hpf	0-1.36
Bacteria	7.2	/hpf	0-65.00
Trichomonas Vaginalis	Absent		Absent
Yeast cells	0	/hpf	0-0.68

1. Urine routine and microscopy is a screening test .
2. Abnormal results of chemical examination are confirmed by manual methods.
3. Pre-test conditions to be observed while submitting the sample- First void, mid-stream urine, collected in a clean, dry, sterile container is recommended for routine urine analysis, avoid contamination with any discharge from vaginal, urethra, perineum, as applicable, avoid prolonged transit time & undue exposure to sunlight.
4. During interpretation, points to be considered are Negative nitrite test does not exclude the presence of the bacteria or urinary tract infections.
5. Trace proteinuria can be seen with many physiological conditions like prolonged recumbency, exercise, high protein diet etc.
6. False reactions for bile pigments, proteins, glucose and nitrites can be caused by peroxidase like activity by disinfectants, therapeutic dyes, ascorbic acid and certain drugs etc.
7. Physiological variations may affect the test results.

-- End of Report --



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