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Tel No : +919819491444
PID NO: P47224543297276
Age: 82 Year(s) Sex: Male

2402705023910 67

Reference: DR.KAPIL SALGIA
Sample Collected At:
Apsc-Ra-Deolali Metro Lab
Shop.No.04 Vastuvaibhav Lam Road
Saubhagaya Nagar Vihitgoan Deolali
422401
Processing Location:- Metropolis Healthcare Ltd (Nashik-Cen)United Legend Build 2 nd Floor Parijat Nagar Nasik

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Registered On:
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30/03/2025 04:13 PM

Investigation	Observed Value	Biological Reference Interval
Malaria Parasite Detection by Smear Examination (EDTA Whole Blood)		
Malaria Parasite examination on thin Smear	Not Detected	Absent

Method : Microscopy .

Interpretation:

1. Parasites are usually seen during febrile episode.
2. Peripheral smear has sensitivity of 86.79% and hence repeated smear examination can be required to rule out false negativity.
3. Peripheral smear examination is a screening test and other methods like QBC (quantitative buffy coat), malaria antigen test and PCR should be used for confirmation especially in low parasitic index.
4. Parasitic index reflects severity of infestation (parasites per 100 RBC).
5. Parasitemia after adequate therapy is indicative of resistant strains.

Associated Test:

- "Fever Panel by Multiplex PCR" for early diagnosis of Dengue virus, Chikungunya virus, Salmonella spp., West Nile virus, Plasmodium spp., Rickettsia spp. and Leptospira spp.

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Investigation	Observed Value	Biological Reference Interval
Widal Test for Typhoid (Serum)		
Salmonella Typhi - 'O' Antigen	No Agglutination	No Agglutination
Salmonella Typhi - 'H' Antigen	No Agglutination	No Agglutination
Salmonella Paratyphi - A - H Antigen	No Agglutination	No Agglutination
Salmonella Paratyphi B - H Antigen	No Agglutination	No Agglutination
Impression	TEST IS NEGATIVE.	

Interpretation :

O antigen Agglutination titre	H antigen Agglutination titre	Interpretation
No agglutination	Low titres <160	Anamnestic reaction/cross reacting antibodies.
Low titres <80	No agglutination	Anamnestic reaction/cross reacting antibodies.
Low titres <80	Low titres <160	Confirm rise in titres with repeat specimen after 2-3 weeks.
>/= 80	No agglutination	Suggestive of Enteric fever.
No agglutination	>/= 160, any one of either SH, STA or STB antigen.	Suggestive of Enteric fever
>/= 160	>/= 160, any one of either SH, STA or STB antigen.	Strongly indicate Enteric fever.
Agglutination present(any titre)	Agglutination (any titre), more than one of SH, STA or STB antigen types.	Seen generally post immunization.

- For O antigen, titres of 80 or above can be significant.
- For H antigen, titres of 160 or above are considered significant.
- Demonstration of rising titres in paired sera is confirmatory.
- SH=S.typhi, STA=S.paratyphi A, STB=S.paratyphi B.

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Investigation	Observed Value	Unit	Biological Reference Interval
Routine Examination Profile - Urine			
General Examination			
Colour	Pale Yellow		Pale Yellow
Transparency (Appearance)	Clear		Clear
Reaction (pH) (pH paper method)	6		4.5-8
Specific gravity (Ionic Concentration method)	1.020		1.010-1.030
Chemical Examination			
Urine Protein (Albumin) (Bromophenol Blue (BPB))	Absent		Absent
Urine Ketones (Acetone) (Legals Test)	Absent		Absent
Urine Glucose (sugar) (Glucose Oxidase-Peroxidase (GOD-POD))	Absent		Absent
Bile pigments (Fouchet's method)	Absent		Absent
Bile salts (Hay's method)	Absent		Absent
Urobilinogen (Ehrlich method)	Normal		Normal
Nitrite (Greiss Reaction)	Negative		Negative
Microscopic Examination			
Red blood cells	**0-1**	/hpf	Absent
Pus cells (WBCs)	2-3	/hpf	0-5
Epithelial cells	1-2	/hpf	0-4
Crystals	Absent		Absent
Cast	Absent		Absent
Bacteria	Absent		Absent
Yeast cells	Absent		Absent

Note : 1. Chemical examination through Dipstick includes test methods as Protein (Protein Error Principle), Glucose (Glucose oxidase-Peroxidase), Ketone (Legals Test), Bilirubin (Azo- Diazo reaction),Urobilinogen (Diazonium ion Reaction) Nitrite (Griess Method).All abnormal results of chemical examination are confirmed by manual methods. **2.** 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. **3.** During interpretation, points to be considered are Negative nitrite test does not exclude the urinary tract infections, Trace proteinuria can be seen with many physiological conditions like prolonged recumbency, exercise, high protein diet. False positive reactions for bile pigments, proteins, glucose and nitrites can be caused by peroxidase like activity by disinfectants, therapeutic dyes, ascorbic acid and certain drugs**.4.**All urine samples are checked for adequacy and suitability before examination.

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Investigation	Observed Value	Unit	Biological Reference Interval
TruHealth Vital			
Glucose Fasting (Plasma-F,Hexokinase)	96	mg/dL	Normal: 70-99 Impaired Tolerance: 100-125 Diabetes mellitus: >= 126 (on more than one occassion) (American diabetes association guidelines 2022)

Note: An individual may show higher fasting glucose level in comparison to post prandial glucose level due to following reasons : The glycaemic index and response to food consumed, Changes in body composition, Increased insulin response and sensitivity, Alimentary hypoglycemia, Renal glycosuria, Effect of oral hypoglycaemics & Insulin treatment.

Associated Tests: HbA1c (H0018), Diabetes Profile – Maxi (D0021),HOMA Index (H0275), Insulin (I0275).

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TruHealth Vital
HbA1c- Glycated Haemoglobin
(EDTA Whole Blood)

Investigation	Observed Value	Unit	Biological Reference Interval
HbA1C- Glycated Haemoglobin (High-Performance Liquid Chromatography (HPLC))	**6.8**	%	Non-diabetic: <= 5.6 Pre-diabetic: 5.7-6.4 Diabetic: >= 6.5
Estimated Average Glucose (eAG) (Calculated)	148.46	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/ turbo 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
Proteins, Serum (Serum)			
Total Protein (Biuret test)	7.06	gm/dL	6.6-8.7
Albumin, Serum (Bromocresol Green (BCG))	**3.03**	gm/dL	3.5-5.2
Globulin (Calculated)	**4.03**	gm/dL	1.8-3.6
Albumin/Globulin Ratio (Calculated)	**0.75**		1.1-2.2

Interpretation:

- Total Proteins are useful in the diagnosis and treatment of disease involving liver, kidney, bone marrow ,metabolic and nutritional disorders.
- The protein concentration of serum is an indicator of the hydration state of the body.
- Prolonged bed rest results in decreased total protein concentration.
- The A/G ratio measures the relative ratio of albumin to globulin
- Low A/G ratio may indicate viral infections, liver and kidney disease, or autoimmune disorders. These diseases increase globulin and decrease albumin thus lowering the A/G ratio.
- A high A/G ratio may indicate diseases that make the body produce less globulin, such as genetic disorders or may result from the use of immunosuppressive drugs.

Reference:

- Juraschek SP, Moliterno AR, Checkley W, Miller ER 3rd. The Gamma Gap and All-Cause Mortality. PLoS One. 2015 Dec 2;10(12):e0143494
- Busher JT. Serum Albumin and Globulin. In: Walker HK, Hall WD, Hurst JW, editors. Clinical Methods: The History, Physical, and Laboratory Examinations. 3rd edition. Boston: Butterworths; 1990. Chapter 101.

SGPT (ALT) (Serum,IFCC w/o pyridoxal phosphate activation)	**42.5**	U/L	< 41
SGOT (AST) (Serum,IFCC w/o pyridoxal phosphate activation)	34.6	U/L	<= 40
Creatinine, Serum (Serum,Jaffes method)	0.77	mg/dL	0.70-1.2
BUN, Serum (Serum,Urease)	17.3	mg/dL	8-23

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
Uric Acid, Serum (Serum,Uricase)	5.7	mg/dL	3.4-7.0

Interpretation:

- Increased in Gout, asymptomatic hyperuricemia, leukemia, polycythemia, hemolytic anemia, sickle cell anemia, resolving pneumonia, toxemia of pregnancy, psoriasis, lymphoma, metabolic acidosis, chronic lead poisoning.
- Decreased in disorders of copper accumulation , kidney tubule disorder, Acromegaly, Celiac disease, Xanthine oxidase deficiency.
- Its used to monitor gout and also chemotherapeutic treatment of neoplasm to avoid renal urate deposition with possible renal failure (tumor lysis syndrome).

Note:

- A purine rich diet as well as sever exercise increases uric acid values.
- High protein-weight reduction diet and alcohol consumption can cause raised uric acid levels.

Reeference:

- Package insert
- Wallach’s interpretation of diagnostic tests, Ed11, 2020.
- Henry's Clinical Diagnosis and Management by Laboratory Methods. 23rd ed; 2017.
- Tietz fundamentals of clinical chemistry 6th edition. Burtis CA, Ashwood ER, Bruns DE, 2008.

Phosphorus, Serum (Serum,Molybdate UV)	3.03	mg/dL	2.5-4.5
Calcium, Serum (Serum,NM-BAPTA)	**8.3**	mg/dL	8.8-10

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TruHealth Vital
CBC Haemogram

Investigation	Observed Value	Unit	Biological Reference Interval
Erythrocytes			
Haemoglobin (Hb)	**9.5**	gm/dL	13.5-18
Erythrocyte (RBC) Count	**3.44**	mill/cu.mm	4.7-6.0
PCV (Packed Cell Volume)	**29.3**	%	42-52
MCV (Mean Corpuscular Volume)	85.2	fL	78-100
MCH (Mean Corpuscular Hb)	27.6	pg	27-31
MCHC (Mean Corpuscular Hb Concn.)	32.4	gm/dL	32-36
RDW (Red Cell Distribution Width)	**14.1**	%	11.5-14.0
Leucocytes			
Total Leucocytes (WBC) Count	**13,900**	cells/cu.mm	4000-10500
Absolute Neutrophils Count	**10981**	cells/cu.mm	2000-7000
Absolute Lymphocyte Count	2085	cells/cu.mm	1000-3000
Absolute Monocyte Count	695	cells/cu.mm	200-1000
Absolute Eosinophil Count	139	cells/cu.mm	20-500
Absolute Basophil Count	**0**	cells/cu.mm	20-100
Neutrophils	79	%	40-80
Lymphocytes	**15**	%	20-40
Monocytes	5	%	2.0-10
Eosinophils	1	%	1-6
Basophils	0	%	0-2
Platelets			
Platelet count	404	10^3/µL	150-450
MPV (Mean Platelet Volume)	**9.8**	fL	6-9.5
Pathologist Remark	Neutrophilic leucocytosis Low RBC Count, Low PCV & Hb. Adv - Sr. Vit B12 & Folate. CBC Follow Up.		

EDTA Whole Blood - Tests done on Automated Five Part Cell Counter. (WBC, RBC Platelet count by impedance method, WBC differential by VCS technology other parameters calculated, Hemoglobin by spectrophotometry) 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 (Cyanocobalamin) (Serum,Electrochemiluminescence immunoassay (ECLIA))	**Above 2000**	pg/mL	211-946

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. Holo Transcobalamin II levels are a more accurate marker of active VitB12 component.

Caution:

- 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.

Disclaimer:

- High levels of Vitamin B12 may be due to exogenous supplementation. Kindly correlate clinically.

Associated Tests

- Active Vitamin B12 (V0012), Homocysteine reflex Vitamin B12-folate serum (H0310), Homocysteine Serum (H0254),RBC Folate R0007.

Reference:

1. Package insert
2. Arch Pathol Lab Med—Vol 141, November 2017

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Investigation	Observed Value	Unit	Biological Reference Interval
ESR (Erythrocyte Sedimentation Rate) (EDTA Whole Blood)	**95**	mm/hr	0-15

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.

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Investigation	Observed Value	Unit	Biological Reference Interval
Lipid Profile - 2 (Mini - Fasting) (Serum)			
Cholesterol Total, Serum (Enzymatic)	114	mg/dL	Desirable: < 200 Borderline High: 200-239 High: >= 240
Triglycerides, Serum (Enzymatic)	115	mg/dL	Normal: < 150 Borderline High: 150-199 High: 200-499 Very High: >= 500
HDL Cholesterol Direct (Enzymatic)	**23**	mg/dL	Major risk factor for heart disease: < 40 Negative risk factor for heart disease: >= 60
Non HDL Cholesterol (Calculated)	91.00	mg/dL	Optimal: < 130 Desirable: 130-159 Borderline high: 159-189 High: 189-220 Very High: >= 220
LDL Cholesterol (Calculated)	68.00	mg/dL	Optimal: < 100 Near Optimal: 100-129 Borderline high: 130-159 High: 160-189 Very High: >= 190
VLDL Cholesterol (Calculated)	23	mg/dL	6-38
LDL/HDL Ratio (Calculated)	2.96		2.5-3.5
Cholestrol / HDL Ratio (Calculated)	4.96		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
Thyroid Profile - 2			
(Serum,Electrochemiluminescence immunoassay (ECLIA))			
FT3 (Free Triiodothyronine)	**1.74**	pg/mL	2-4.4
FT4 (Free Thyroxine)	1.27	ng/dL	0.93-1.7
TSH (Thyroid Stimulating Hormone) - Ultrasensitive, Serum	2.32	µIU/mL	0.54-5.3

INTERPRETATION

TSH	T3 / FT3	T4 / FT4	Suggested Interpretation for the Thyroid Function Tests Pattern
Within Range	Decreased	Within Range	• Isolated Low T3-often seen in elderly & associated Non-Thyroidal illness. In elderly the drop in T3 level can be upto 25%.
Raised	Within Range	Within Range	•Isolated High TSHespecially in the range of 4.7 to 15 mIU/ml is commonly associated with Physiological & Biological TSH Variability. •Subclinical Autoimmune Hypothyroidism •Intermittent T4 therapy for hypothyroidism •Recovery phase after Non-Thyroidal illness"
Raised	Decreased	Decreased	•Chronic Autoimmune Thyroiditis •Post thyroidectomy,Post radioiodine •Hypothyroid phase of transient thyroiditis"
Raised or within Range	Raised	Raised or within Range	•Interfering antibodies to thyroid hormones (anti-TPO antibodies) •Intermittent T4 therapy or T4 overdose •Drug interference- Amiodarone, Heparin,Beta blockers,steroids, anti-epileptics"
Decreased	Raised or within Range	Raised or within Range	•Isolated Low TSH -especially in the range of 0.1 to 0.4 often seen in elderly & associated with Non-Thyroidal illness •Subclinical Hyperthyroidism •Thyroxine ingestion"
Decreased	Decreased	Decreased	•Central Hypothyroidism •Non-Thyroidal illness •Recent treatment for Hyperthyroidism (TSH remains suppressed)"
Decreased	Raised	Raised	•Primary Hyperthyroidism (Graves' disease),Multinodular goitre, Toxic nodule •Transient thyroiditis:Postpartum, Silent (lymphocytic), Postviral (granulomatous,subacute, DeQuervain's),Gestational thyrotoxicosis with hyperemesis gravidarum"
Decreased or within Range	Raised	Within Range	•T3 toxicosis •Non-Thyroidal illness

References: 1. Interpretation of thyroid function tests. Dayan et al. THE LANCET • Vol 357 • February 24, 2001
2. Laboratory Evaluation of Thyroid Function, Indian Thyroid Guidelines, JAPI, January 2011,vol. 59

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Reference: DR.KAPIL SALGIA
Sample Collected At:
Apsc-Ra-Deolali Metro Lab
Shop.No.04 Vastuvaibhav Lam Road
Saubhagaya Nagar Vihitgoan Deolali
422401
Processing Location:- Metropolis Healthcare Ltd (Nashik-Cen)United Legend Build 2 nd Floor Parijat Nagar Nasik

VID: 240270502391067
Registered On:
30/03/2025 10:47 AM
Collected On:
30/03/2025 10:38AM
Reported On:
30/03/2025 04:13 PM

Investigation	Observed Value	Unit	Biological Reference Interval
Vitamin D Total - 25 Hydroxy (OH) (Serum,Electrochemiluminescence immunoassay (ECLIA))	40.84	ng/mL	Deficiency: < 10 Insufficiency: 10-30 Sufficiency: 30-100 Hypervitaminosis: > 100 Note : Change in Method

Interpretation:

- Vitamin D is a fat soluble vitamin and exists in two main forms as D3 & D2. Both are converted to 25(OH) vitamin D in liver.
- For diagnosis of vitamin D deficiency, it is recommended to have clinical correlation with serum 25(OH)vitamin D, serum calcium, serum iPTH & serum alkaline phosphatase
- During monitoring of oral vitamin D therapy- suggested testing of serum 25(OH) vitamin D is after 12 weeks or 3 months of treatment.

Caution:

- 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.

Disclaimer:

- 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 diseases, malabsorption syndromes and calcium or magnesium deficiency.
- Vitamin D toxicity is known but very rare. Kindly correlate clinically, repeat with fresh sample if indicated.

Associated Tests:

- iPTH-Intact Molecule Parathyroid hormone Serum/Plasma (P0114), Calcium(C0017), Vitamin D plus profile(V0016)

Reference:

1. Package insert
2. Arch Pathol Lab Med—Vol 141, November 2017

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Consultant Pathologist
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Tel No : +919819491444
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Investigation	Observed Value	Unit	Biological Reference Interval
Electrolytes, Serum (Serum,ISE Indirect)			
Sodium, Serum	139	mmol/L	135-150
Potassium, Serum	4.15	mmol/L	3.5-5.1
Chloride, Serum	**97.2**	mmol/L	98-107

Interpretation:
- Low levels are noted in prolonged vomiting or diarrhea, diminished reabsorption in the kidney and excessive fluid retention. High levels are seen in case of excessive fluid loss, high salt intake and increased kidney reabsorption.
- Potassium 3.8 mmol/L 3.5-5.1

Interpretation:
- Low levels are noted in reduced intake of dietary potassium or excessive loss of potassium from the body due to diarrhea, prolonged vomiting or increased renal excretion. High levels may be caused by dehydration or shock, severe burns, hemolysis, diabetic ketoacidosis, and retention of potassium by the kidney.
- Chlorides 109 mmol/L 98-107

Interpretation:
- Low levels are noted in reduced dietary intake, prolonged vomiting and reduced renal reabsorption as well as some forms of acidosis and alkalosis. High levels are found in dehydration, kidney failure, some forms of acidosis, high dietary or parenteral chloride intake, and salicylate poisoning.

Alkaline Phosphatase, Serum (Serum,Enzymatic IFCC)	**144**	U/L	40-129
Bilirubin Direct (Serum,Diazo method)	0.31	mg/dL	0.0-0.5
Bilirubin Total (Serum,Diazo method)	0.54	mg/dL	0.2-1.2

-- End of Report --

MC-6143 Tests marked with NABL symbol are accredited by NABL vide Certificate no MC-6143

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