



# A PIONEER DIAGNOSTIC CENTRE

**■** 0171-2532620, 8222896961 ■ pkrjainhealthcare@gmail.com

: Mr. BALWINDER SETHI **NAME** 

**AGE/ GENDER** : 56 YRS/MALE **PATIENT ID** : 1535798

**COLLECTED BY** REG. NO./LAB NO. : 122407020009

REFERRED BY **REGISTRATION DATE** : 02/Jul/2024 11:41 AM BARCODE NO. : 12503403 **COLLECTION DATE** : 02/Jul/2024 11:47AM CLIENT CODE. : P.K.R JAIN HEALTHCARE INSTITUTE REPORTING DATE : 02/Jul/2024 04:53PM

**CLIENT ADDRESS** : NASIRPUR, HISSAR ROAD, AMBALA CITY - HARYANA

**Test Name** Value Unit **Biological Reference interval** 

# **SWASTHYA WELLNESS PANEL: 1.5** COMPLETE BLOOD COUNT (CBC)

### **RED BLOOD CELLS (RBCS) COUNT AND INDICES**

HAEMOGLOBIN (HB)	13.9	gm/dL	12.0 - 17.0
RED BLOOD CELL (RBC) COUNT  by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE	4.39	Millions/cmm	3.50 - 5.00
PACKED CELL VOLUME (PCV)  by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	41.2	%	40.0 - 54.0
MEAN CORPUSCULAR VOLUME (MCV)  by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	93.8	fL	80.0 - 100.0
MEAN CORPUSCULAR HAEMOGLOBIN (MCH)  by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	31.8	pg	27.0 - 34.0
MEAN CORPUSCULAR HEMOGLOBIN CONC. (MCHC) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	33.9	g/dL	32.0 - 36.0
RED CELL DISTRIBUTION WIDTH (RDW-CV)  by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	12.6	%	11.00 - 16.00
RED CELL DISTRIBUTION WIDTH (RDW-SD) by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER	44.8	fL	35.0 - 56.0
MENTZERS INDEX by CALCULATED	21.37	RATIO	BETA THALASSEMIA TRAIT: < 13.0 IRON DEFICIENCY ANEMIA: >13.0
GREEN & KING INDEX by CALCULATED	27.04	RATIO	BETA THALASSEMIA TRAIT: < = 65.0 IRON DEFICIENCY ANEMIA: > 65.0
WHITE BLOOD CELLS (WBCS)			
TOTAL LEUCOCYTE COUNT (TLC) by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	8030	/cmm	4000 - 11000
NUCLEATED RED BLOOD CELLS (nRBCS)  by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER & MICROSCOPY	0		0.00 - 20.00
NUCLEATED RED BLOOD CELLS (nRBCS) % by CALCULATED BY AUTOMATED HEMATOLOGY ANALYZER & MICROSCOPY	0	%	< 10 %



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Test Name	Value	Unit	Biological Reference interval
CORRECTED TOTAL LEUCOCYTE COUNT (C-TLC) by MICROSCOPY ON EDTA SMEAR	8030	/cmm	4000 - 11000
DIFFERENTIAL LEUCOCYTE COUNT (DLC)			
NEUTROPHILS by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	59	%	50 - 70
LYMPHOCYTES by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	25	%	20 - 40
EOSINOPHILS by Flow cytometry by SF cube & microscopy	11 <sup>H</sup>	%	1 - 6
MONOCYTES by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	5	%	2 - 12
BASOPHILS by flow cytometry by sf cube & microscopy	0 PKR	%	0 - 1
IMMATURE GRANULOCTE (IG) % by flow cytometry by sf cube & microscopy	0	%	0 - 5.0
ABSOLUTE LEUKOCYTES (WBC) COUNT			
ABSOLUTE NEUTROPHIL COUNT by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	4738	/cmm	2000 - 7500
ABSOLUTE LYMPHOCYTE COUNT by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	2008 <sup>L</sup>	/cmm	800 - 4900
ABSOLUTE EOSINOPHIL COUNT by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	883 <sup>H</sup>	/cmm	40 - 440
ABSOLUTE MONOCYTE COUNT  by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	402	/cmm	80 - 880
ABSOLUTE BASOPHIL COUNT  by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	0	/cmm	0 - 110
ABSOLUTE IMMATURE GRANULOCYTE COUNT by FLOW CYTOMETRY BY SF CUBE & MICROSCOPY	0	/cmm	0.0 - 999.0
PLATELETS AND OTHER PLATELET PREDICTIVE MARKER	<u>RS.</u>		
PLATELET COUNT (PLT) by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE	142000 <sup>L</sup>	/cmm	150000 - 450000
PLATELETCRIT (PCT) by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE	0.16	%	0.10 - 0.36
MEAN PLATELET VOLUME (MPV) by hydro dynamic focusing, electrical impedence	14 <sup>H</sup>	fL	6.50 - 12.0
PLATELET LARGE CELL COUNT (P-LCC)	59000	/cmm	30000 - 90000



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Test Name	Value	Unit	Biological Reference interval
by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE			
PLATELET LARGE CELL RATIO (P-LCR)	53.8 <sup>H</sup>	%	11.0 - 45.0
by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE	33.0		
PLATELET DISTRIBUTION WIDTH (PDW)	16.7	%	15.0 - 17.0
by HYDRO DYNAMIC FOCUSING, ELECTRICAL IMPEDENCE			
NOTE: TEST CONDUCTED ON EDTA WHOLE BLOOD			

RECHECKED.Smear show platelets clumps.Repeat sample may be advised.



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Value Unit **Biological Reference interval** Test Name

### **GLYCOSYLATED HAEMOGLOBIN (HBA1C)**

GLYCOSYLATED HAEMOGLOBIN (HbA1c): 6 4.0 - 6.4WHOLE BLOOD

by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY,

ESTIMATED AVERAGE PLASMA GLUCOSE 60.00 - 140.00 125.5 mg/dl

by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)

#### **INTERPRETATION:**

AS PER AMERICAN DIABETES ASSOCIATION (ADA):			
REFERENCE GROUP	GLYCOSYLATED HEMOGLO	OGIB (HBAIC) in %	
Non diabetic Adults >= 18 years	<5.7		
At Risk (Prediabetes)	5.7 – 6.4	1	
Diagnosing Diabetes	>= 6.5		
	Age > 19 Years		
	Goals of Therapy:	< 7.0	
Therapeutic goals for glycemic control	Actions Suggested:	>8.0	
	Age < 19 Ye	ears	
	Goal of therapy:	<7.5	

#### COMMENTS:

- 1. Glycosylated hemoglobin (HbA1c) test is three monthly monitoring done to assess compliace with therapeutic regimen in diabetic patients.
- 2. Since Hb1c reflects long term fluctuations in blood glucose concentration, a diabetic patient who has recently under good control may still have high concentration of HbAlc. Converse is true for a diabetic previously under good control but now poorly controlled.
- 3. Target goals of < 7.0 % may be beneficial in patients with short duration of diabetes, long life expectancy and no significant cardiovascular disease. In patients with significant complications of diabetes, limited life expectancy or extensive co-morbid conditions, targetting a goal of < 7.0% may not be 4.High
- HbA1c (>9.0 -9.5 %) is strongly associated with risk of development and rapid progression of microvascular and nerve complications
- 5. Any condition that shorten RBC life span like acute blood loss, hemolytic anemia falsely lower HbA1c results.
- 6.HbA1c results from patients with HbSS,HbSC and HbD must be interpreted with caution, given the pathological processes including anemia, increased red cell turnover, and transfusion requirement that adversely impact HbA1c as a marker of long-term gycemic control.
- 7. Specimens from patients with polycythemia or post-spienctomy may exhibit increse in HbA1c values due to a somewhat longer life span of the red cells.

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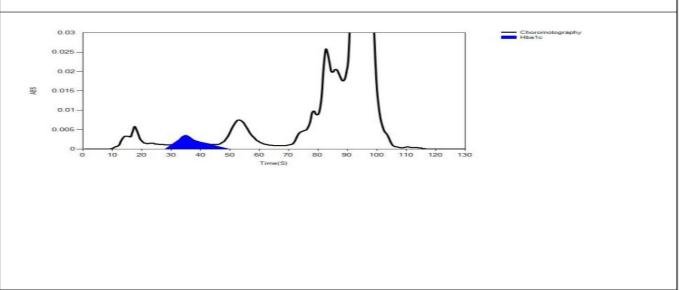
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Test Name Value Unit **Biological Reference interval** 

#### LIFOTRONIC Graph Report

Name :	Case:	Patient Type :	Test Date: 02/07/2024 17:20:12
Age:	Department:	Sample Type: Whole Blood EDTA	Sample ld: 12503403
Gender:			Total Area: 13301

Peak Name	Retention Time(s)	Absorbance	Area	Result (Area %)
нь ао	69	3637	11943	86.5
HbA1c	39	75	826	6.0
La1c	25	35	248	1.8
HbF	21	11	15	0.1
Hba1b	13	58	161	1.2
Hba1a	10	34	108	0.8





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Value Unit Test Name **Biological Reference interval** 

### **ERYTHROCYTE SEDIMENTATION RATE (ESR)**

**ERYTHROCYTE SEDIMENTATION RATE (ESR)** 

36<sup>H</sup>

mm/1st hr

0 - 20

by MODIFIED WESTERGREN AUTOMATED METHOD INTERPRETATION:

1. ESR is a non-specific test because an elevated result often indicates the presence of inflammation associated with infection, cancer and auto-

immune disease, but does not tell the health practitioner exactly where the inflammation is in the body or what is causing it.

2. An ESR can be affected by other conditions besides inflammation. For this reason, the ESR is typically used in conjunction with other test such as C-reactive protein

3. This test may also be used to monitor disease activity and response to therapy in both of the above diseases as well as some others, such as systemic lupus erythematosus

#### CONDITION WITH LOW ESR

A low ESR can be seen with conditions that inhibit the normal sedimentation of red blood cells, such as a high red blood cell count (polycythaemia), significantly high white blood cell count (leucocytosis), and some protein abnormalities. Some changes in red cell shape (such as sickle cells in sickle cell anaemia) also lower the ESR.

### NOTE:

- 1. ESR and C reactive protein (C-RP) are both markers of inflammation.

- CRP is not affected by as many other factors as is ESR, making it a better marker of inflammation.
   If the ESR is elevated, it is typically a result of two types of proteins, globulins or fibrinogen.
   Women tend to have a higher ESR, and menstruation and pregnancy can cause temporary elevations.
   Drugs such as dextran, methyldopa, oral contraceptives, penicillamine procainamide, theophylline, and vitamin A can increase ESR, while assignment and quining may decrease it. aspirin, cortisone, and quinine may decrease it



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#### PERIPHERAL BLOOD SMEAR

### **TEST NAME:**

#### PERIPHERAL BLOOD FILM/SMEAR (PBF)

### RED BLOOD CELLS (RBC'S):

RBCs mostly appear normocytic & normochromic. No polychromatic cells or normoblastic activity evident.

### WHITE BLOOD CELLS (WBC'S):

No immature leucocytes seen.

### PLATELETS:

Platelets appear slightly reduced on smear & show clumps also.

### **HEMOPARASITES:**

NOT SEEN

### **IMPRESSION:**

Normocytic normochromic picture.



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Value Unit **Biological Reference interval** Test Name

# **CLINICAL CHEMISTRY/BIOCHEMISTRY GLUCOSE FASTING (F)**

87.45 GLUCOSE FASTING (F): PLASMA mg/dL NORMAL: < 100.0

by GLUCOSE OXIDASE - PEROXIDASE (GOD-POD) PREDIABETIC: 100.0 - 125.0 DIABETIC: > 0R = 126.0

IN ACCORDANCE WITH AMERICAN DIABETES ASSOCIATION GUIDELINES:

1. A fasting plasma glucose level below 100 mg/dl is considered normal.

2. A fasting plasma glucose level between 100 - 125 mg/dl is considered as glucose intolerant or prediabetic. A fasting and post-prandial blood test (after consumption of 75 gms of glucose) is recommended for all such patients. 3. A fasting plasma glucose level of above 125 mg/dl is highly suggestive of diabetic state. A repeat post-prandial is strongly recommended for all such patients. A fasting plasma glucose level in excess of 125 mg/dl on both occasions is confirmatory for diabetic state.



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Test Name	Value	Unit	Biological Reference interval
	LIPID PROFILE	: BASIC	
CHOLESTEROL TOTAL: SERUM by CHOLESTEROL OXIDASE PAP	182.55	mg/dL	OPTIMAL: < 200.0 BORDERLINE HIGH: 200.0 - 239.0 HIGH CHOLESTEROL: > OR = 240.0
TRIGLYCERIDES: SERUM by GLYCEROL PHOSPHATE OXIDASE (ENZYMATIC)	125.11	mg/dL	OPTIMAL: < 150.0 BORDERLINE HIGH: 150.0 - 199.0 HIGH: 200.0 - 499.0 VERY HIGH: > OR = 500.0
HDL CHOLESTEROL (DIRECT): SERUM by SELECTIVE INHIBITION	50.91	mg/dL	LOW HDL: < 30.0 BORDERLINE HIGH HDL: 30.0 - 60.0 HIGH HDL: > OR = 60.0
LDL CHOLESTEROL: SERUM by CALCULATED, SPECTROPHOTOMETRY	106.62	mg/dL	OPTIMAL: < 100.0 ABOVE OPTIMAL: 100.0 - 129.0 BORDERLINE HIGH: 130.0 - 159.0 HIGH: 160.0 - 189.0 VERY HIGH: > OR = 190.0
NON HDL CHOLESTEROL: SERUM by CALCULATED, SPECTROPHOTOMETRY	131.64 <sup>H</sup>	mg/dL	OPTIMAL: < 130.0 ABOVE OPTIMAL: 130.0 - 159.0 BORDERLINE HIGH: 160.0 - 189.0 HIGH: 190.0 - 219.0 VERY HIGH: > OR = 220.0
VLDL CHOLESTEROL: SERUM by CALCULATED, SPECTROPHOTOMETRY	25.02	mg/dL	0.00 - 45.00
TOTAL LIPIDS: SERUM by CALCULATED, SPECTROPHOTOMETRY	490.21	mg/dL	350.00 - 700.00
CHOLESTEROL/HDL RATIO: SERUM by CALCULATED, SPECTROPHOTOMETRY	3.59	RATIO	LOW RISK: 3.30 - 4.40 AVERAGE RISK: 4.50 - 7.0 MODERATE RISK: 7.10 - 11.0 HIGH RISK: > 11.0
LDL/HDL RATIO: SERUM by CALCULATED, SPECTROPHOTOMETRY	2.09	RATIO	LOW RISK: 0.50 - 3.0 MODERATE RISK: 3.10 - 6.0 HIGH RISK: > 6.0



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Test Name Value Unit **Biological Reference interval** 

TRIGLYCERIDES/HDL RATIO: SERUM **RATIO** 3.00 - 5.002.46<sup>L</sup> by CALCULATED, SPECTROPHOTOMETRY

**INTERPRETATION:** 

1. Measurements in the same patient can show physiological & analytical variations. Three serial samples 1 week apart are recommended for Total Cholesterol, Triglycerides, HDL & LDL Cholesterol.

2. As per NLA-2014 guidelines, all adults above the age of 20 years should be screened for lipid status. Selective screening of children above the age of 2 years with a family history of premature cardiovascular disease or those with at least one parent with high total cholesterol is recommended.

3. Low HDL levels are associated with increased risk for Atherosclerotic Cardiovascular disease (ASCVD) due to insufficient HDL being available

to participate in reverse cholesterol transport, the process by which cholesterol is eliminated from peripheral tissues.

4. NLA-2014 identifies Non HDL Cholesterol (an indicator of all atherogeniclipoproteins such as LDL, VLDL, IDL, Lpa, Chylomicron remnants) along with LDL-cholesterol as co-primary target for cholesterol lowering therapy. Note that major risk factors can modify treatment goals for LDL &Non

5. Additional testing for Apolipoprotein B, hsCRP,Lp(a) & LP-PLA2 should be considered among patients with moderate risk for ASCVD for risk refinement



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### LIVER FUNCTION TEST (COMPLETE)

BILIRUBIN TOTAL: SERUM  by DIAZOTIZATION, SPECTROPHOTOMETRY	0.34	mg/dL	INFANT: 0.20 - 8.00 ADULT: 0.00 - 1.20
BILIRUBIN DIRECT (CONJUGATED): SERUM by DIAZO MODIFIED, SPECTROPHOTOMETRY	0.15	mg/dL	0.00 - 0.40
BILIRUBIN INDIRECT (UNCONJUGATED): SERUM by CALCULATED, SPECTROPHOTOMETRY	0.19	mg/dL	0.10 - 1.00
SGOT/AST: SERUM by IFCC, WITHOUT PYRIDOXAL PHOSPHATE	60.3 <sup>H</sup>	U/L	7.00 - 45.00
SGPT/ALT: SERUM by IFCC, WITHOUT PYRIDOXAL PHOSPHATE	40.72	U/L	0.00 - 49.00
AST/ALT RATIO: SERUM by CALCULATED, SPECTROPHOTOMETRY	1.48	RATIO	0.00 - 46.00
ALKALINE PHOSPHATASE: SERUM by para nitrophenyl phosphatase by amino methyl propanol	72.12	U/L	40.0 - 130.0
GAMMA GLUTAMYL TRANSFERASE (GGT): SERUM by SZASZ, SPECTROPHTOMETRY	175.01 <sup>H</sup>	U/L	0.00 - 55.0
TOTAL PROTEINS: SERUM  by BIURET, SPECTROPHOTOMETRY	7.52	gm/dL	6.20 - 8.00
ALBUMIN: SERUM by BROMOCRESOL GREEN	4.58	gm/dL	3.50 - 5.50
GLOBULIN: SERUM  by CALCULATED, SPECTROPHOTOMETRY	2.94	gm/dL	2.30 - 3.50
A : G RATIO: SERUM	1.56	RATIO	1.00 - 2.00

#### **INTERPRETATION**

by CALCULATED, SPECTROPHOTOMETRY

NOTE:- To be correlated in individuals having SGOT and SGPT values higher than Normal Referance Range.

**USE**:- Differential diagnosis of diseases of hepatobiliary system and pancreas.

#### INCREASED:

DRUG HEPATOTOXICITY_	> 2
ALCOHOLIC HEPATITIS	> 2 (Highly Suggestive)
CIRRHOSIS	1.4 - 2.0
INTRAHEPATIC CHOLESTATIS	> 1.5
HEPATOCELLULAR CARCINOMA & CHRONIC HEPATITIS	> 1.3 (Slightly Increased)



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REFERRED BY **REGISTRATION DATE** : 02/Jul/2024 11:41 AM BARCODE NO. : 12503403 **COLLECTION DATE** : 02/Jul/2024 11:47AM

CLIENT CODE. : P.K.R JAIN HEALTHCARE INSTITUTE REPORTING DATE : 02/Jul/2024 01:38PM

**CLIENT ADDRESS** : NASIRPUR, HISSAR ROAD, AMBALA CITY - HARYANA

Test Name Value Unit **Biological Reference interval** 

#### **DECREASED:**

1. Acute Hepatitis due to virus, drugs, toxins (with AST increased 3 to 10 times upper limit of normal)

2. Extra Hepatic cholestatis: 0.8 (normal or slightly decreased).

#### PROGNOSTIC SIGNIFICANCE:

NORMAL	< 0.65
GOOD PROGNOSTIC SIGN	0.3 - 0.6
POOR PROGNOSTIC SIGN	1.2 - 1.6



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DR.YUGAM CHOPRA CONSULTANT PATHOLOGIST MBBS, MD (PATHOLOGY)





# A PIONEER DIAGNOSTIC CENTRE

**■** 0171-2532620, 8222896961 ■ pkrjainhealthcare@gmail.com

**NAME** : Mr. BALWINDER SETHI

**AGE/ GENDER** : 56 YRS/MALE **PATIENT ID** : 1535798

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**CLIENT ADDRESS** : NASIRPUR, HISSAR ROAD, AMBALA CITY - HARYANA

Test Name	Value	Unit	Biological Reference interval

### VIDNEY CLINICTION TEST (COMBLETE

	KIDNEY FUNCTION TEST	T (COMPLETE)	
UREA: SERUM by urease - glutamate dehydrogenase (gldh	31.83	mg/dL	10.00 - 50.00
CREATININE: SERUM by ENZYMATIC, SPECTROPHOTOMETERY	0.61	mg/dL	0.40 - 1.40
BLOOD UREA NITROGEN (BUN): SERUM by CALCULATED, SPECTROPHOTOMETRY	14.87	mg/dL	7.0 - 25.0
BLOOD UREA NITROGEN (BUN)/CREATININE	24.38 <sup>H</sup>	RATIO	10.0 - 20.0
RATIO: SERUM by CALCULATED, SPECTROPHOTOMETRY			
UREA/CREATININE RATIO: SERUM by CALCULATED, SPECTROPHOTOMETRY	52.18	RATIO	
URIC ACID: SERUM by URICASE - OXIDASE PEROXIDASE	5.73	mg/dL	3.60 - 7.70
CALCIUM: SERUM by ARSENAZO III. SPECTROPHOTOMETRY	8.63	mg/dL	8.50 - 10.60
PHOSPHOROUS: SERUM by PHOSPHOMOLYBDATE, SPECTROPHOTOMETRY	2.52	mg/dL	2.30 - 4.70
ELECTROLYTES			
SODIUM: SERUM by ISE (ION SELECTIVE ELECTRODE)	141.9	mmol/L	135.0 - 150.0
POTASSIUM: SERUM by ISE (ION SELECTIVE ELECTRODE)	4.33	mmol/L	3.50 - 5.00
CHLORIDE: SERUM  by ISE (ION SELECTIVE ELECTRODE)	106.43	mmol/L	90.0 - 110.0
<b>ESTIMATED GLOMERULAR FILTERATION RATE</b>			
ESTIMATED GLOMERULAR FILTERATION RATE (eGFR): SFRUM	112.7		

(eGFR): SERUM by CALCULATED **INTERPRETATION:** 

To differentiate between pre- and post renal azotemia.

### **INCREASED RATIO (>20:1) WITH NORMAL CREATININE:**

- 1. Prerenal azotemia (BUN rises without increase in creatinine) e.g. heart failure, salt depletion, dehydration, blood loss) due to decreased glomerular filtration rate.
- 2. Catabolic states with increased tissue breakdown.



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Test Name Value Unit **Biological Reference interval** 

3. GI haemorrhage.

4. High protein intake.

5. Impaired renal function plus

6. Excess protein intake or production or tissue breakdown (e.g. infection, GI bleeding, thyrotoxicosis, Cushing's syndrome, high protein diet, burns, surgery, cachexia, high fever).

7. Urine reabsorption (e.g. ureter colostomy)

8. Reduced muscle mass (subnormal creatinine production)

9. Certain drugs (e.g. tetracycline, glucocorticoids)

#### INCREASED RATIO (>20:1) WITH ELEVATED CREATININE LEVELS:

- 1. Postrenal azotemia (BUN rises disproportionately more than creatinine) (e.g. obstructive uropathy).
- 2. Prerenal azotemia superimposed on renal disease.

#### DECREASED RATIO (<10:1) WITH DECREASED BUN:

- 1. Acute tubular necrosis.
- 2. Low protein diet and starvation.
- 3. Severe liver disease.
- 4. Other causes of decreased urea synthesis.
- 5. Repeated dialysis (urea rather than creatinine diffuses out of extracellular fluid).
- 6. Inherited hyperammonemias (urea is virtually absent in blood).
- 7. SIADH (syndrome of inappropiate antidiuretic harmone) due to tubular secretion of urea.
- 8. Pregnancy.

### DECREASED RATIO (<10:1) WITH INCREASED CREATININE:

- 1. Phenacimide therapy (accelerates conversion of creatine to creatinine).
- 2. Rhabdomyolysis (releases muscle creatinine).
- 3. Muscular patients who develop renal failure.

#### **INAPPROPIATE RATIO:**

- 1. Diabetic ketoacidosis (acetoacetate causes false increase in creatinine with certain methodologies, resulting in normal ratio when dehydration should produce an increased BUN/creatinine ratio)
- 2. Cephalosporin therapy (interferes with creatinine measurement). ESTIMATED GLOMERULAR FILTERATION RATE:

OVER OTHER DESCRIPTION AND DESCRIPTION OF A 1/1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1 /				
CKD STAGE	DESCRIPTION	GFR ( mL/min/1.73m2 )	ASSOCIATED FINDINGS	
G1	Normal kidney function	>90	No proteinuria	
G2	Kidney damage with	>90	Presence of Protein,	
	normal or high GFR		Albumin or cast in urine	
G3a	Mild decrease in GFR	60 -89		
G3b	Moderate decrease in GFR	30-59		
G4	Severe decrease in GFR	15-29		
G5	Kidney failure	<15		



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440 Dated 17.5.2012 u/s 80 G OF INCOME TAX ACT. PAN NO. AAAAP1600. REPORT ATTRACTS THE CONDITIONS PRINTED OVERLEAF (P.T.O.)





# A PIONEER DIAGNOSTIC CENTRE

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REPORTING DATE

: 02/Jul/2024 02:05PM

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: P.K.R JAIN HEALTHCARE INSTITUTE

Test Name Value Unit **Biological Reference interval** 

COMMENTS:

CLIENT CODE.

1. Estimated Glomerular filtration rate (eGFR) is the sum of filtration rates in all functioning nephrons and so an estimation of the GFR provides a measure of functioning nephrons of the kidney.

2. eGFR calculated using the 2009 CKD-EPI creatinine equation and GFR category reported as per KDIGO guideline 2012

3. In patients, with eGFR creatinine between 45-59 ml/min/1.73 m2 (G3) and without any marker of Kidney damage, It is recommended to measure eGFR with Cystatin C for confirmation of CKD

4. eGFR category G1 OR G2 does not fullfill the criteria for CKD, in the absence of evidence of Kidney Damage
5. In a suspected case of Acute Kidney Injury (AKI), measurement of eGFR should be done after 48-96 hours of any Intervention or procedure
6. eGFR calculated by Serum Creatinine may be less accurate due to certain factors like Race, Muscle Mass, Diet, Certain Drugs. In such cases, eGFR should be calculated using Serum Cystatin C
7. A decrease in eGFR implies either progressive renal disease, or a reversible process causing decreased nephron function (eg, severe dehydration).

ADVICE:

KDIGO guideline, 2012 recommends Chronic Kidney Disease (CKD) should be classified based on cause, eGFR category and Albuminuria (ACR) category. GFR & ACR category combined together reflect risk of progression and helps Clinician to identify the individual who are progressing at more rapid rate than anticipated



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**Test Name** Value Unit **Biological Reference interval** 

IDON DDOFILE

	INONFROTILL		
IRON: SERUM by FERROZINE, SPECTROPHOTOMETRY	53.13 <sup>L</sup>	μg/dL	59.0 - 158.0
UNSATURATED IRON BINDING CAPACITY (UIBC):SERUM	181.33	μg/dL	150.0 - 336.0
by FERROZINE, SPECTROPHOTOMETERY			
TOTAL IRON BINDING CAPACITY (TIBC) :SERUM	234.46	μg/dL	230 - 430
by SPECTROPHOTOMETERY			
%TRANSFERRIN SATURATION: SERUM by CALCULATED, SPECTROPHOTOMETERY (FERENE)	22.66	%	15.0 - 50.0
TRANSFERRIN: SERUM	166.47 <sup>L</sup>	mg/dL	200.0 - 350.0

by SPECTROPHOTOMETERY (FERENE)

INTERPRETATION:-

MATERIA RETAINED.				
VARIABLES	ANEMIA OF CHRONIC DISEASE	IRON DEFICIENCY ANEMIA	THALASSEMIA α/β TRAIT	
SERUM IRON: Normal to Reduced		Reduced	Normal	
TOTAL IRON BINDING CAPACITY:	Decreased	Increased	Normal	
% TRANSFERRIN SATURATION:	Decreased	Decreased < 12-15 %	Normal	
SERUM FERRITIN:	Normal to Increased	Decreased	Normal or Increased	

#### **IRON:**

- 1. Serum iron studies is recommended for differential diagnosis of microcytic hypochromic anemia.i.e iron deficiency anemia, zinc deficiency anemia, anemia of chronic disease and thalassemia syndromes.
- 2. It is essential to isolate iron deficiency anemia from Beta thalassemia syndromes because during iron replacement which is therapeutic for iron deficiency anemia, is severely contra-indicated in Thalassemia.

TOTAL IRON BÍNDING CAPACITY (TÍBC):

1.It is a direct measure of protein transferrin which transports iron from the gut to storage sites in the bone marrow.

% TRANSFERRIN SATURATION:

1.Occurs in idiopathic hemochromatosis and transfusional hemosiderosis where no unsaturated iron binding capacity is available for iron mobilization. Similar condition is seen in congenital deficiency of transferrin.



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Test Name Value Unit **Biological Reference interval** 

#### HOMOCYSTEINE

**HOMOCYSTEINE: SERUM** 24.9<sup>H</sup> μmol/L 5.0 - 22.0

by ECLIA (ELECTROCHEMILUMINESCENCE IMMUNOASSAY)

INTERPRETATION:

- 1. Homocysteine is a sulphur containing amino acid. There is an association between elevated levels of circulating homocysteine and various vascular and cardiovascular disorders
- 2. Serum Homocystein level aid in screening patients suspected of having an inherited disorder of methionine metabolism including genetic defects in vitamin cofactors (vitamin B6, B12, and folate).
- 3. Nutritional deficiency of B12 and folate also lead to abnormal homocysteine accumulation.
- 4. Homocysteine concentration is an indicator of acquired folate or cobalamin deficiency, and is a contributing factor in the pathogenesis of neural tube defects.
- 5. Homocystenemia was previously thought to be an independent risk factor for coronary artery disease but current understanding suggests that the use of homocysteine for assessment of cardiovascular risk is uncertain and controversial. Based on several meta-analyses, at present, homocysteine may be regarded as a weak risk factor for coronary heart disease, and there is a lack of direct causal relationship between hyperhomocysteinemia and cardiovascular disease. It is most likely an indicator of poor lifestyle and diet.
- 6. Specially useful in young CVD patients (< 40 yrs) In known cases of CVD, high homocysteine levels should be used as a prognostic marker for CVD events and mortality CVD patients with homocysteine levels > 15 umol/L belong to a high risk group Increased homocysteine levels with low vitamin concentrations should be handled as a potential vitamin deficiency case.
- 7. This test should be used in conjunction with plasma amino acids and urine organic acids to aid in the biochemical screening for primary and secondary disorders of methionine metabolism.
- 8.Note:-Homocysteine concentrations >13 mcmol/L are considered abnormal in patients evaluated for suspected nutritional deficiencies (B12, folate) and inborn errors of metabolism. Measurement of methylmalonic acid (MMA) distinguishes between B12 (cobalamin) and folate deficiencies, as MMA is only elevated in B12 deficiency. Response to dietary treatment can be evaluated by monitoring serum homocysteine concentrations over time.
- 9. Homocysteine concentrations < or =10 mcmol/L are desirable when utilized for cardiovascular risk.
- 10. Other factors that may influence and increase serum homocysteine include: Age, Smoking, Poor diet, Chronic renal, disease, Hypothyroidism

#### NOTE:

- 1. Medications that may increase homocysteine concentrations include: Methotrexate, Azuridine, Nitrous Oxide, Phenytoin, Carbamazepine, Oral Contraceptives
- 2.A fasting specimen is recommended; however, nonfasting homocysteine concentrations produce slightly higher, but likely clinically insignificant changes.



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Test Name Value Unit **Biological Reference interval** 

### **ENDOCRINOLOGY**

### THYROID FUNCTION TEST: TOTAL

TRIIODOTHYRONINE (T3): SERUM 1.15 ng/mL 0.35 - 1.93

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

THYROXINE (T4): SERUM 7.46 4.87 - 12.60 μgm/dL

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

THYROID STIMULATING HORMONE (TSH): SERUM 5.074 μIU/mL 0.35 - 5.50

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

3rd GENERATION, ULTRASENSITIVE

### INTERPRETATION:

TSH levels are subject to circadian variation, reaching peak levels between 2-4 a.m and at a minimum between 6-10 pm. The variation is of the order of 50%. Hence time of the day has influence on the measured serum TSH concentrations. TSH stimulates the production and secretion of the metabolically active hormones, thyroxine (T4) and trilodothyronine (T3). Failure at any level of regulation of the hypothalamic-pituitary-thyroid axis will result in either underproduction (hypothyroidism) or overproduction(hyperthyroidism) of T4 and/or T3.

CLINICAL CONDITION	Т3	T4	TSH
Primary Hypothyroidism:	Reduced	Reduced	Increased (Significantly)
Subclinical Hypothyroidism:	Normal or Low Normal	Normal or Low Normal	High
Primary Hyperthyroidism:	Increased	Increased	Reduced (at times undetectable)
Subclinical Hyperthyroidism:	Normal or High Normal	Normal or High Normal	Reduced

- 1. T3 and T4 circulates in reversibly bound form with Thyroid binding globulins (TBG), and to a lesser extent albumin and Thyroid binding Pre Albumin so conditions in which TBG and protein levels alter such as pregnancy, excess estrogens, androgens, anabolic steroids and glucocorticoids may falsely affect the T3 and T4 levels and may cause false thyroid values for thyroid function tests.
- 2. Normal levels of T4 can also be seen in Hyperthyroid patients with :T3 Thyrotoxicosis, Decreased binding capacity due to hypoproteinemia or ingestion of certain drugs
- 3. Serum T4 levies in neonates and infants are higher than values in the normal adult, due to the increased concentration of TBG in neonate serum.
- 4. TSH may be normal in central hypothyroidism, recent rapid correction of hyperthyroidism or hypothroidism, pregnancy, phenytoin therapy.

TRIIODOTHYRONINE (T3)		THYROXINE (T4)		THYROID STIMULATING HORMONE (TSH)	
Age	Refferance Range (ng/mL)	Age	Refferance Range (μg/dL)	Age	Reference Range ( μΙυ/mL)
0 - 7 Days	0.20 - 2.65	0 - 7 Days	5.90 - 18.58	0 - 7 Days	2.43 - 24.3
7 Days - 3 Months	0.36 - 2.59	7 Days - 3 Months	6.39 - 17.66	7 Days - 3 Months	0.58 - 11.00
3 - 6 Months	0.51 - 2.52	3 - 6 Months	6.75 – 17.04	3 Days – 6 Months	0.70 - 8.40



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Test Name			Value	Unit		Biological Reference interva	I
6 - 12 Months	0.74 - 2.40	6 - 12 Months	7.10 – 16.16	6 – 12 Months	0.70 - 7.00		
1 - 10 Years	0.92 - 2.28	1 - 10 Years	6.00 - 13.80	1 – 10 Years	0.60 - 5.50		
11- 19 Years	0.35 - 1.93	11 - 19 Years	4.87- 13.20	11 – 19 Years	0.50 - 5.50		
> 20 years (Adults)	0.35 - 1.93	> 20 Years (Adults)	4.87 - 12.60	> 20 Years (Adults)	0.35- 5.50		
	RECO	MMENDATIONS OF TSH LI	EVELS DURING PRE	GNANCY ( µIU/mL)			
	1st Trimester		0.10 - 2.50				
	2nd Trimester		0.20 - 3.00				
3rd Trimester		0.30 - 4.10					

#### **INCREASED TSH LEVELS:**

- 1. Primary or untreated hypothyroidism may vary from 3 times to more than 100 times normal depending upon degree of hypofunction.
- 2. Hypothyroid patients receiving insufficient thyroid replacement therapy.
- 3. Hashimotos thyroiditis
- 4.DRUGS: Amphetamines, idonie containing agents & dopamine antagonist.
- 5. Neonatal period, increase in 1st 2-3 days of life due to post-natal surge

#### **DECREASED TSH LEVELS:**

- 1.Toxic multi-nodular goitre & Thyroiditis.
- 2. Over replacement of thyroid harmone in treatment of hypothyroidism.
- 3. Autonomously functioning Thyroid adenoma
- 4. Secondary pituatary or hypothalmic hypothyroidism
- 5. Acute psychiatric illness
- 6. Severe dehydration.
- 7.DRUGS: Glucocorticoids, Dopamine, Levodopa, T4 replacement therapy, Anti-thyroid drugs for thyrotoxicosis.

8. Pregnancy: 1st and 2nd Trimester

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Test Name Value Unit **Biological Reference interval** 

### **VITAMINS**

### VITAMIN D/25 HYDROXY VITAMIN D3

VITAMIN D (25-HYDROXY VITAMIN D3): SERUM by CLIA (CHEMILUMINESCENCE IMMUNOASSAY)

14.5<sup>L</sup> ng/mL

INSUFFICIENCY: 20.0 - 30.0 SUFFICIENCY: 30.0 - 100.0

**TOXICITY: > 100.0** 

**DEFICIENCY:** < 20.0

**INTERPRETATION:** 

DEFICIENT:	< 20	ng/mL
INSUFFICIENT:	21 - 29	ng/mL
PREFFERED RANGE:	30 - 100	ng/mL
INTOXICATION:	> 100	ng/mL

1. Vitamin D compounds are derived from dietary ergocalciferol (from plants, Vitamin D2), or cholecalciferol (from animals, Vitamin D3), or by conversion of 7- dihydrocholecalciferol to Vitamin D3 in the skin upon Ultraviolet exposure.

2.25-OH--Vitamin D represents the main body resevoir and transport form of Vitamin D and transport form of Vitamin D, being stored in adipose tissue and tightly bound by a transport protein while in circulation.

3. Vitamin D plays a primary role in the maintenance of calcium homeostatis. It promotes calcium absorption, renal calcium absorption and phosphate reabsorption, skeletal calcium deposition, calcium mobilization, mainly regulated by parathyroid harmone (PTH).

4. Severe deficiency may lead to failure to mineralize newly formed osteoid in bone, resulting in rickets in children and osteomalacia in adults.

#### **DECREASED:**

- 1.Lack of sunshine exposure
- 2.Inadequate intake, malabsorption (celiac disease)
  3.Depressed Hepatic Vitamin D 25- hydroxylase activity
- 4. Secondary to advanced Liver disease
- 5. Osteoporosis and Secondary Hyperparathroidism (Mild to Moderate deficiency)
- 6.Enzyme Inducing drugs: anti-epileptic drugs like phenytoin, phenobarbital and carbamazepine, that increases Vitamin D metabolism.

1. Hypervitaminosis D is Rare, and is seen only after prolonged exposure to extremely high doses of Vitamin D. When it occurs, it can result in severe hypercalcemia and hyperphophatemia.

CAUTION: Replacement therapy in deficient individuals must be monitored by periodic assessment of Vitamin D levels in order to prevent hypervitaminosis D

NOTE:-Dark coloured individuals as compare to whites, is at higher risk of developing Vitamin D deficiency due to excess of melanin pigment which interefere with Vitamin D absorption.



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Test Name Value Unit **Biological Reference interval** 

#### VITAMIN B12/COBALAMIN

VITAMIN B12/COBALAMIN: SERUM 260 pg/mL 200 - 940

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

#### **INTERPRETATION:-**

INCREASED VITAMIN B12	DECREASED VITAMIN B12		
1.Ingestion of Vitamin C	1.Pregnancy		
2.Ingestion of Estrogen	2.DRUGS:Aspirin, Anti-convulsants, Colchicine		
3.Ingestion of Vitamin A	3.Ethanol Igestion		
4.Hepatocellular injury	4. Contraceptive Harmones		
5.Myeloproliferative disorder	5.Haemodialysis 5.Haemodialysi 5.Haemodialysis 5.Haemodialysis 5.Haemodialysis 5.Haemodialysis		
6.Uremia	6. Multiple Myeloma		

- 1. Vitamin B12 (cobalamin) is necessary for hematopoiesis and normal neuronal function.
- 2.In humans, it is obtained only from animal proteins and requires intrinsic factor (IF) for absorption.
- 3. The body uses its vitamin B12 stores very economically, reabsorbing vitamin B12 from the ileum and returning it to the liver; very little is excreted.
- 4.Vitamin B12 deficiency may be due to lack of IF secretion by gastric mucosa (eg, gastrectomy, gastric atrophy) or intestinal malabsorption (eg, ileal resection, small intestinal diseases).
- 5. Vitamin B12 deficiency frequently causes macrocytic anemia, glossitis, peripheral neuropathy, weakness, hyperreflexia, ataxia, loss of proprioception, poor coordination, and affective behavioral changes. These manifestations may occur in any combination; many patients have the neurologic defects without macrocytic anemia.
- 6.Serum methylmalonic acid and homocysteine levels are also elevated in vitamin B12 deficiency states.
- 7. Follow-up testing for antibodies to intrinsic factor (IF) is recommended to identify this potential cause of vitamin B12 malabsorption. NOTE:A normal serum concentration of vitamin B12 does not rule out tissue deficiency of vitamin B12. The most sensitive test for vitamin B12 deficiency at the cellular level is the assay for MMA. If clinical symptoms suggest deficiency, measurement of MMA and homocysteine should be considered, even if serum vitamin B12 concentrations are normal.



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# A PIONEER DIAGNOSTIC CENTRE

■ 0171-2532620, 8222896961 pkrjainhealthcare@gmail.com

0.0 - 4.0

: Mr. BALWINDER SETHI **NAME** 

AGE/ GENDER : 56 YRS/MALE **PATIENT ID** : 1535798

**COLLECTED BY** : 122407020009 REG. NO./LAB NO.

REFERRED BY **REGISTRATION DATE** : 02/Jul/2024 11:41 AM BARCODE NO. : 12503403 **COLLECTION DATE** : 02/Jul/2024 11:47AM CLIENT CODE. : P.K.R JAIN HEALTHCARE INSTITUTE REPORTING DATE : 02/Jul/2024 04:28PM

0.74

**CLIENT ADDRESS** : NASIRPUR, HISSAR ROAD, AMBALA CITY - HARYANA

**Test Name** Value Unit **Biological Reference interval** 

# **TUMOUR MARKER**

### PROSTATE SPECIFIC ANTIGEN (PSA) - TOTAL

ng/mL

PROSTATE SPECIFIC ANTIGEN (PSA) - TOTAL:

by CLIA (CHEMILUMINESCENCE IMMUNOASSAY) **INTERPRETATION:-**

Expected Values for the PSA			
Smokers	< 4 ng/ml		
Non-smokers	< 4 ng/ml		

- 1. Prostate-specific antigen (PSA) is a glycoprotein that is produced by the prostate gland, the lining of the urethra, and the bulbourethral gland.
- 2. Normally, very little PSA is secreted in the blood.

#### **INCREASED:-**

- 1.Increased in glandular size and tissue damage caused by benign prostatic hypertrophy.
- 2. Prostatitis.
- 3. Prostate cancer may increase circulating PSA levels.
- 4.In patients with previously diagnosed prostate cance, PSA testing is advocated as an early indicator of tumor recurrence and as an indicator of response to therapy.

### The test is also useful for initial screening for prostate cancer:-

- 1. Total PSA levels < 2 ng/ml almost rule out the possibility of prostatic malignancy.
- 2.Total PSA levels between 2 and 10 ng/ml lie in the grey zone. Such values may be obtained in prostatitis, benign hyperplasia and malignancy. Further testing including a free PSA/PSA ratio and prostate biopsy is recommended for these patients for confirmation of the diagnosis. 3. Total PSA values >10 ng/ml are highly suspicious for prostate cancer but further testing, such as prostate biopsy, is needed to diagnose the

exact pathology.



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# PKR JAIN HEALTHCARE INSTITUTE

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: 02/Jul/2024 01:38PM

**NAME** : Mr. BALWINDER SETHI

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: P.K.R JAIN HEALTHCARE INSTITUTE

Value Unit Test Name **Biological Reference interval** 

# **CLINICAL PATHOLOGY** URINE ROUTINE & MICROSCOPIC EXAMINATION

REPORTING DATE

#### PHYSICAL EXAMINATION

CLIENT CODE.

QUANTITY RECIEVED 20 ml by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

PALE YELLOW PALE YELLOW **COLOUR** by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

TRANSPARANCY **CLEAR CLEAR** 

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY 1.02 1.002 - 1.030 SPECIFIC GRAVITY

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

#### **CHEMICAL EXAMINATION**

REACTION **ACIDIC** 

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY.

**PROTEIN** NEGATIVE (-ve) NEGATIVE (-ve)

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY **SUGAR NEGATIVE** (-ve) **NEGATIVE** (-ve)

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY рΗ 5.0 - 7.56.5

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY **BILIRUBIN NEGATIVE** (-ve) **NEGATIVE** (-ve)

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

**NITRITE NEGATIVE** (-ve) **NEGATIVE** (-ve)

EU/dL **NOT DETECTED** UROBILINOGEN 0.2 - 1.0

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY KETONE BODIES NEGATIVE (-ve) NEGATIVE (-ve)

by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

**NEGATIVE (-ve)** NEGATIVE (-ve) **BLOOD** by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

ASCORBIC ACID **NEGATIVE** (-ve) **NEGATIVE** (-ve) by DIP STICK/REFLECTANCE SPECTROPHOTOMETRY

**MICROSCOPIC EXAMINATION** 



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CLIENT CODE.



# PKR JAIN HEALTHCARE INSTITUTE NASIRPUR, Hissar Road, AMBALA CITY- (Haryana)

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: P.K.R JAIN HEALTHCARE INSTITUTE

Test Name	Value	Unit	Biological Reference interval
RED BLOOD CELLS (RBCs) by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	NEGATIVE (-ve)	/HPF	0 - 3
PUS CELLS by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	3-4	/HPF	0 - 5
EPITHELIAL CELLS  by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	2-3	/HPF	ABSENT
CRYSTALS by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	NEGATIVE (-ve)		NEGATIVE (-ve)
CASTS by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	NEGATIVE (-ve)		NEGATIVE (-ve)
BACTERIA by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	NEGATIVE (-ve)		NEGATIVE (-ve)
OTHERS by MICROSCOPY ON CENTRIFUGED URINARY SEDIMENT	NEGATIVE (-ve)		NEGATIVE (-ve)
TRICHOMONAS VAGINALIS (PROTOZOA) by microscopy on centrifuged urinary sediment	ABSENT		ABSENT

\* End Of Report



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