

PATHOLOGICAL DATA

HEMATOLOGICAL DATA

HAEMOGLOBIN :

	Normal values
Male	13 - 18 gm %
Female	11 - 16 gm %
Infants	13 - 19 gm %
Children	11 - 15 gm %

Haemoglobin Test Determines :

- Drop in Value ® Anaemia, Leukaemia, etc.
- Rise in value ® Splenomegaly, Dehydration, etc.

TOTAL COUNT OF RED BLOOD CORPUSCLES (RBC) :

Male	4.2 - 6.5 Million/Cumm
Female	3.7 - 5.6 Million/Cumm
Infants	4.0 - 5.5 Million/Cumm
Children	3.5 - 5.0 Million/Cumm

R.B.C. Count Determines :

Variations in normal values is observed in pregnancy, rehydration, severe burns, diseased conditions and it also depends upon altitude.

When a man travels from a sea coast to mountainous city, the decrease in the oxygen content of the air stimulates bone marrow to produce more red cells and the count increases and vice-versa.

TOTAL COUNT OF WHITE BLOOD CORPUSCLES (WBC OR TLC) :

Adults	4,000-11,000/cumm
Infants	6,000-20,000/cumm
Children	5,000-15,000/cumm

Total Leucocyte Count or WBC Count determines :

More than Normal (Leucocytosis)	Less than Normal (Leucopenia)
Appendicitis	Influenza
Pneumonia	Typhoid
Leukemia	Infectious Hepatitis
Tonsilitis	Cirrhosis of Liver
Meningitis	Myxedema
Rheumatic Fever	Agranulocytosis
Small Pox	Paratyphoid

DIFFERENTIAL LEUCOCYTE COUNT (D.C.) (ADULT) :

	Normal Values
Neutrophils	40% - 75%
Lymphocytes	20% - 35%
Monocytes	1% - 8%
Eosinophils	1% - 6%
Basophils	0% - 1%

Increased Neutrophils Count Indicates : Appendicitis, Pneumonia, Tonsilitis, Meningitis, Abscesses, Granulocytic, Leukaemia, Internal bleeding, Rheumatoid Arthritis, Any tissue damage, metabolic disorder (e.g. gout,) Heavy Smoking, etc.

Increased Eosinophils Count Indicates : Allergic conditions, Asthma, Food and drug sensitivities, Hay Fever, Skin diseases, Filariasis, Blood cancer, Psoriasis, Malaria, etc.

Increased Basophil Count Indicates : Granulocytic, Leukaemia, Radiation therapy, Hemolytic Anaemia, etc.

Increased Monocytes Count Indicates : T.B., Typhoid fever, Monocytic leukaemia, Blood Cancer, Rheumatoid Arthritis, etc.

Increased Lymphocytes Count Indicates : Lymphocytic Leukaemia, Whooping Cough, Chicken Pox, Hepatitis, T.B., Rheumatoid Arthritis, Myasthenia Gravis, Influenza, etc.

ERYTHROCYTE SEDIMENTATION RATE (ESR) :

Definition : The rate of growth at which the erythrocytes or RBC sediment when they are allowed to settle out from plasma is defined as "ESR".

Normal Values of ESR in various Method :

Method	Normal Values
Westergen	Male < 50 years : 0 - 10
	Male > 50 years : 0 - 20
	Female < 50 years : 0 - 20
	Female > 50 years : 0 - 30
Wintrobe	Male : 0 - 5mm in 1 hour
	Female : 0 - 15mm in 1 hour

Increment in ESR is observed in the following conditions :

- a) Rheumatic fever and arthritis
- b) Penumonia
- c) Nephritis
- d) Cancer
- e) Syphilis
- f) Anaemia
- g) Menstruation
- h) Pregnancy
- i) Tuberculosis
- j) Leukaemia

Blood Biochemistry:	Normal Value
Fasting Blood Sugar (FBS)	70 - 120 mg/dl
Post Prandial Plasma Glucose (P.P)	70 - 140 mg/dl
Post Glucose Plasma Glucose	70 - 140 mg/dl
Random Plasma Glucose	70 - 140 mg/dl
Serum Sodium	130 - 155 mEq/L
Serum Potassium	3 - 4.5 mEq/L
Serum Chlorides	90 - 110 mEq/L
Serum Calcium	8 - 10 mgm/dl
Serum Magnesium	1.5 - 2.5 mEq/L
Serum Copper	100 - 128 mg/dl
Serum Phosphorus	2.7 - 5.5 mgm/dl
Serum Phosphorus (Child)	4.0 - 7.0 mgm/dl
Serum Zinc	100 - 140 m/dl

Serum Creatinine	0.8 - 2.0	mgm/dl
Serum Urea	12 - 40	mgm/dl
Serum Uric Acid	2.5 - 7.5	mgm/dl
Serum Protein (Total)	5.5 - 8.0	gm/dl
Serum Albumin	3.6 - 4.8	gm/dl
Serum Globulin	1.5 - 3	gm/dl
Serum Bilirubin	0.3 - 1.0	mgm/dl

Lipid Profile	Value	High (Border Line)	High Risk
Total Serum Lipid	500 - 600		
Serum Cholesterol	< 200 mg ^m /dl	200-400 mgm/dl	> 240 mgm/dl
Serum Triglyceride	< 170 mg ^m /dl	170-500 mgm/dl	> 500 mgm/dl
HDL Cholesterol	> 30 mg ^m /dl	30 - 20 mgm/dl	< 20 mgm/dl
LDL Cholesterol	< 150 mg ^m /dl	150-170 mgm/dl	> 170 mgm/dl

Liver Functional Test (LFT) :	Normal Value
Serum Bilirubin Direct	0.1 - 0.4 mg/dl
TOTAL	0.2 - 1.2 mg/dl
S.G.O.T./AST	5 - 40 IU/L
S.G.P.T./ALT	5 - 40 IU/L
Alkaline Phosphatase	upto - 250 UI/L

Vitamins: Normal Value	Normal Value
Vitamin A (Serum)	20 - 100 mg/dl
Vitamin C (Plasma)	0.7 - 1.5 mgm/dl
Vitamin B ₁	5.5 - 9.5 m/dl
Vitamin B ₁₂	200 - 600 pg/ml

Hormones:	Normal Value
Plasma ACTH	< 80 pg/ml
Plasma Cortisol	5-25 mg/dl 8 AM
	3-12 mg/dl 4 PM
Plasma Angiotensin II	10 - 30 pg/ml 8 AM
Plasma Calcitonin	< 50 pg/ml
Plasma Glucagon	50 - 100 pg/ml

Plasma Gonadotropin:	Normal Value
Male : FSH	5 - 20 mu/ml
LH	5 - 20 mu/ml
Females : FSH	5 - 20 mu/ml
LH	5 - 25 mu/ml

Thyroid Hormone Test :	Normal Value
T ₃	0.8 - 2.0 mgm/dl
T ₄	5.3 - 14.0 mgm/dl
TSH	0.23-4.2 mgm/dl

Stool	
Amount	80 - 140 gm/day

Dry weight	< 60 gm/day
	60%-70% water
Reaction	7.0 - 7.5 PH
Total Fats	150 - 250 mg
Total Fatty Acids	90 - 130 mg

Urine

Quantity (Passed in 24 hours)	About 1500 ml
Colour	Straw colour
Albumin	Nil
Creatine	0.0 - 0.06 gm/day
Creatinine	1.64 gm/day
Urea	25 - 30 gm/day
Uric acid	1 - 4 mgm/day
Sodium	4 gm/day
Potassium	2 gm/day
Calcium	0.1 - 0.2 gm/day

The normal values mentioned here may marginally vary among the reports of different pathological laboratories.