

Johns Hopkins Department of Pathology Core Laboratory Reference Ranges

September, 2022

Hematology	Reference Values	Units
WBC	4.50-11.00	K/cu mm
Band neutrophils	2-6	%
Lymphocytes	24-44	%
Monocytes	2-11	%
Eosinophils	1-4	%
Basophils	0-2	%
RBC	M: 4.5-5.9; F 4.0-5.2	M/CU MM
Hemoglobin	M: 13.9-16.3; F: 12.0-15.0	G/DL
Hemoglobin A1C	<5.7	%
Hematocrit	M: 41.0-53.0; F: 36.0-46.0	%
Retic %	>6 mths	0.5 -1.8%
Polys (Segmented Neutrophils)	31-76	%
Neutrophils	40.0-70.0	%
MCH	Adults	26.0 -34.0 pg
MCHC	2 yrs - Adults	31.0 -37.0 g/dL
Mean Corpuscular Vol (MCV)	80.0-100.0	fL
Mean platelet volume (MPV)	9.2-12.7	fL
RDW	Birth through Adult	11.5 -14.5 %
Absolute Neutrophils	1.50-7.80	K/cu mm
Absolute Lymphocytes	1.1-4.8	K/cu mm
Absolute Eosinophils	0.12-0.3	K/cu mm
Absolute Monocytes	0.1-1.2	K/cu mm
Platelet Count	150-350	K/cu mm
Morphology	normocytic normchromic	
Immature Gran Number	0.0-0.05	K/cu mm
Nucleated RBC Number	0.0-0.01	K/cu mm
INR	0.9-1.1	
PT	9.3-11.7	seconds
PTT	23.1-30.9	seconds
Fibrinogen	170.0-422.0	mg/dL
Urinalysis	Reference Values	
Specific Gravity	** 1.003-1.030	**
pH	** 4.6-8.0	**
Urobilinogen	≤ 1.0 mg/dL	**
Luekocyte esterase	Negative	**
Glucose	** negative	**
Protein	** negative	**
Bilirubin	** negative	**
Ketones	** negative; trace	**
Nitrate	** negative	**
Occult Blood	** negative	**
Microscopic	-	-
RBC	* 0-5	#/HPF
WBC	* 0-5	#/HPF
Eosinophil	None	#/HPF
Squamous epithelial	* Any number	#/HPF
Transitional cells	* None	#/HPF
Renal Epithelial	* None	#/HPF
Bacteria	* few to none	#/HPF
Casts	* 0-3 hyaline	#/LPF
Crystals	* few	#/HPF
Body Fluids	Reference Values	Units
Differentials, Other Cells:		
Cell Count:		
RBC	<100	cu/mm
WBC	<500	cu/mm
Differential: polymorphonuclear	<25	%
CSF		
Differential		
WBC	0-5	cu/mm
Mononuclear cells	0-5	%

*all tests performed by urinalysis microscopic

**all tests performed by urinalysis dipstick

Chemistry (serum)	Reference Values	Units
Sodium	135-148	mmol/L
Potassium	3.5-5.1	mmol/L
Chloride	96-109	mmol/L
CO2	21-31	mmol/L
Glucose	71-99	mg/dL
BUN	7.0-22.0	mg/dL
Creatinine	M: 0.6-1.3; F: 0.5-1.2	mg/dL
Calcium	8.4-10.5	mg/dL
Total Protein	6.0-8.2	g/dL
Albumin	3.5-5.3	g/dL
Bilirubin, Total	0.0-1.2	mg/dL
AST	M: 0-37; F: 0-31	U/L
ALT	M: 0-40; F: 0-31	U/L
Alkaline Phosphatase	30-120	U/L
Amylase	28-100	U/L
Bilirubin, Direct	0.0-0.4	mg/dL
C-Reactive Protein	0 - 0.5	mg/dL
Creatine Kinase	M: 24-195; F:24-170	U/L
Gamma Glutamyl Transferase	M: 12-55; F: 8 -51	U/L
LDH	M: 118-273; F: 122-220	U/L
Lipase	16-63	U/L
Magnesium	1.6-2.4	mg/dL
Phosphorus	2.7-4.5	mg/dL
Uric Acid	M: 3.5-7.2; F: 2.4-6.4	mg/dL
Cholesterol	0-200	mg/dL
Triglycerides	0-150	mg/dL
LDL	0-130	mg/dL
HDL	>40	mg/dL
Non-HDL Cholesterol	30 mg/dL higher than target LDL-Cholesterol	mg/dL
Beta-Hydroxybutyrate (BHB)	0.00-0.27	mmol/L
Iron	Male and Female, Birth to 1 month 15 days	100-250 ug/dL
	Male and Female, 1 month 15 days to 1 year	40-100 ug/dL
	Male and Female, 1 year to 16 years	50-120 ug/dL
	Female, 16 years to 70 years	50-170 ug/dL
	Male, 16 years to 70 years	65-170 ug/dL
	Male and Female, greater than 70 years	40-80 ug/dL
Ferritin	Female	13-150 ng/mL
	Male	30-400 ng/mL
Transferrin	200-400	mg/dL
Cystatin C	0.61-1.03	mg/L
Apolipoprotein B	0-90	mg/dL
Lactate	0.5-2.0	mmol/L
Ammonia	0-32	umol/L
C-Reactive Protein, High Sensitivity	Relative risk of cardiovascular disease:	
	Low risk:	<1.0 mg/L
	Average risk:	1.0 - 3.0 mg/L
	High risk:	>3.0 mg/L

Reviewed and Approved :

Michael J. Borowitz, MD., Ph.D.
 CLIA Lab Director, Department of Pathology
 Johns Hopkins Hospital

Date _____

Chemistry (serum)	Reference Values	Units
TSH	0.5-4.5	mIU/mL
FT4	0.8-1.8	ng/dL
T4	4.5-11.5	mcg/dL
FT3	2.0-4.9	pg/mL
T3	0.80-2.00	ng/mL
Cortisol	7am - 9am: 4.6 - 23.4 4pm - 6pm: 2.7 - 15.9	mcg/dL
PSA	0.0-4.0	ng/mL
Troponin I	<0.04	ng/mL
CK-MB	0.0-7.0	ug/L
NT-ProBNP	<75 years: 0-125 ≥75 years: 0-450	pg/mL

FLOW CYTOMETRY		
CD8%	Percent %	Absolute cu/mm
0-3 mo.	12-28	-
3-6 mo.	12-23	-
6-12 mo.	12-24	-
1-2 yrs.	14-30	-
2-6 yrs.	16-30	-
6-12 yrs.	18-35	-
12-18 yrs.	18-35	-
18-23 yrs.	10-39	-
> 23 yrs.	10-36	735-1904
CD4%		
0-3 mo.	35-64	1600-4000
3-6 mo.	35-56	1800-4000
6-12 mo.	31-56	1400-4300
1-2 yrs.	32-51	1300-3400
2-6 yrs.	28-47	700-2200
6-12 yrs.	31-47	650-1500
12-18 yrs.	31-52	530-1300
18-23 yrs.	28-57	300-1400
> 23 yrs.	32-68	458-1344
CD3%		
0-3 mo.	53-84	-
3-6 mo.	51-77	-
6-12 mo.	49-76	-
1-2 yrs.	53-75	-
2-6 yrs.	56-75	-
6-12 yrs.	60-76	-
12-18 yrs.	56-84	-
18-23 yrs.	55-83	-
> 23 yrs.	51-91	735-1904
CD34 (Blood)	<0.01-0.07	-
CD34 (Bone Marrow)	0.38-1.82	-