Normal Values

Serum ferritin Transferrin saturation

Hematologic values		Male	Female	Units
Hemoglobin		14.0 – 18.0	12.0 – 16.0	gm/dl
Hematocrit		41 – 50%	36 – 45%	
Erythrocytes (RBC)		4.7 – 6.1	4.2 – 5.4	M/μL
White Blood Cells		4.8 – 10.8	4.8 – 10.8	K/μL
(WBC)				
WBC Differential:	Neutrophils	50 – 75 %	45 – 70 %	
	Lymphocytes	20 – 45 %	20 – 45 %	
	Monocytes	0 –10 %	0 –10 %	
	Eosinophils	0-5%	0-5%	
	Basophils	0-5%	0-5%	
Platelets		140 – 440	140 – 440	K/μL
Sedimentation Rate		< 50 yr: 0 – 15	< 50 yr: 0 – 20	mm/hr
		<u>></u> 50 yr: 0−20	≥ 50 yr: 0 – 30	
MCH	25 25 ng/sell			
	25 - 35 pg/cell			
MCV	78-100 μm ³			
MCHC	31-37 g/dl			
RDW	11.5 – 14.5 %			
Iron/Transport				
Proteins:				
Iron	60-150 μg/dL			
TIBC	250-400 μg/dL			
c c	40.000 / 1			

Clotting Studies			Units
PT	Infant: 10.9 - 13.9	>30 days: 12.2 - 14.2	sec
aPTT	Infant: 34 - 51	> 30 days: 23 - 36	sec

12-300 μg/ml

20-45%

Lymphocytes in	CD19	4 – 20%	96-421 cells/μL
peripheral blood	CD3	62 – 85%	700-2500 cells/μL
	CD2	70 – 88%	840-2800 cells/μL
	CD4	34 - 59%	430-1600 cells/μL
	CD8	16 - 38%	280-1100 cells/μL

Blood Gases		Units
рН	7.38 - 7.44	
pO ₂	80 - 100	mmHg
pCO ₂	35 - 45	mmHg
HCO ₃	21 - 28	mmol/L

Enzymes	Male	Female	Units
Aspartate Aminotransferase (AST)	10 - 40	9 - 25	U/L
Alkaline Phosphatase (ALP)	45 - 115	30 - 100	U/L
Alanine Aminotransferase (ALT)	10 - 55	7 - 30	U/L
Gamma glutamyl transferase (GGT)	1 - 94	1 - 70	U/L
		Unit	
Lactate Dehydrogenase (LDH)	90 - 250	U/L	
Lipase	3 - 19	U/dL	
Serum amylase	53 - 123	U/L	
Plasma amylase	43 - 115	U/L	

Normal Values

Sodium (Na) 135 - 144 mmol/L	Blood Chemistries		Units	
0 − 12 months: 3.5 − 6.0 mmol/L > 12 months: 3.5 − 5.0 mmol/L CO₂ 22 − 32 mmol/L BUN: 0 − 7 days: 3 − 12 mmol/L > 7 days: 8 − 20 mmol/L Creatinine (Cr): Male 0.7 − 1.3 mg/dL Female 0.6 − 1.1 mg/dL Glucose (fasting): mg/dL mg/dL 0 − 1 month 45 − 90 mg/dL > 1 month 65 − 110 mg/dL Ammonia 20 − 120 µg/dL Phosphorus 2.3 − 4.7 mg/dL Calcium total 9.2 − 11.0 mg/dL Calcium ionized 4.0 − 4.8 mg/dL Magnesium 1.8 − 3.0 mg/dL Serum bilirubin, Total: 0.2 − 1.3 mg/dL Direct: 0.0 − 0.3 mg/dL Total Serum Protein: 6 − 8 g/dL Albumin 3.9 − 5.0 g/dL Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤ 12.8 U/mL Carcinoembryonic antigen 0 − 4.9<	Sodium (Na)	135 - 144	mmol/L	
> 12 months: 3.5 - 5.0 Chloride (CI) 98 - 107 mmol/L CO₂ 22 - 32 mmol/L BUN: 0 - 7 days: 3 - 12 mmol/L > 7 days: 8 - 20 mmol/L Creatinine (Cr): Male 0.7 - 1.3 mg/dL Female 0.6 - 1.1 mg/dL Glucose (fasting): mg/dL mg/dL 0 - 1 month 45 - 90 mg/dL > 1 month 45 - 90 mg/dL Ammonia 20 - 120 μg/dL Phosphorus 2.3 - 4.7 mg/dL Calcium total 9.2 - 11.0 mg/dL Calcium total 9.2 - 11.0 mg/dL Magnesium 1.8 - 3.0 mg/dL Serum bilirubin, Total: 0.2 - 1.3 mg/dL Direct: 0.0 - 0.3 mg/dL Total Serum Protein: 6 - 8 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen 0 - 4.9 0 - 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs </td <td>Potassium (K):</td> <td></td> <td></td>	Potassium (K):			
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Phosphorus 2.3 – 4.7 mg/dL Calcium total 9.2 − 11.0 mg/dL Calcium ionized 4.0 – 4.8 mg/dL Magnesium 1.8 – 3.0 mg/dL Serum bilirubin, Total: 0.2 - 1.3 mg/dL Direct: 0.0 – 0.3 mg/dL Total Serum Protein: 6 - 8 g/dL Pre-albumin 18 – 38 mg/dL Albumin 3.9 – 5.0 g/dL Globulin 2.3 – 3.5 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen 0 – 4.9 ng/ml (CEA): Non-Smokers: 0 – 9.9 0 – 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Ammonia	20 - 120	μg/dL	
Calcium total 9.2 − 11.0 mg/dL Calcium ionized 4.0 − 4.8 mg/dL Magnesium 1.8 − 3.0 mg/dL Serum bilirubin, Total: 0.2 − 1.3 mg/dL Direct: 0.0 − 0.3 mg/dL Total Serum Protein: 6 − 8 g/dL Pre-albumin 18 − 38 mg/dL Albumin 3.9 − 5.0 g/dL Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen ng/ml (CEA): Non-Smokers: 0 − 4.9 ng/ml Smokers: 0 − 9.9 OTHER Total Urinary Protein: 0.050 − 0.100 gm/24 hrs	Phosphorus	2.3 – 4.7		
Calcium ionized 4.0 − 4.8 mg/dL Magnesium 1.8 − 3.0 mg/dL Serum bilirubin, Total: 0.2 − 1.3 mg/dL Direct: 0.0 − 0.3 mg/dL Total Serum Protein: 6 − 8 g/dL Pre-albumin 18 − 38 mg/dL Albumin 3.9 − 5.0 g/dL Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤ 12.8 U/mL Carcinoembryonic antigen 0 − 4.9 ng/ml (CEA): Non-Smokers: 0 − 9.9 0 − 9.9 OTHER Total Urinary Protein: 0.050 − 0.100 gm/24 hrs		9.2 – 11.0	_	
Magnesium 1.8 − 3.0 mg/dL Serum bilirubin, Total: 0.2 − 1.3 mg/dL Direct: 0.0 − 0.3 mg/dL Total Serum Protein: 6 − 8 g/dL Pre-albumin 18 − 38 mg/dL Albumin 3.9 − 5.0 g/dL Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen ng/ml (CEA): Non-Smokers: 0 − 4.9 ng/ml Smokers: 0 − 9.9 mg/24 hrs OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Calcium ionized	4.0 – 4.8	_	
Direct: 0.0 − 0.3 Total Serum Protein: 6 − 8 g/dL Pre-albumin 18 − 38 mg/dL Albumin 3.9 − 5.0 g/dL Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen ng/ml (CEA): Non-Smokers: 0 − 4.9 ng/ml Smokers: 0 − 9.9 mg/ml OTHER Total Urinary Protein: 0.050 − 0.100 gm/24 hrs	Magnesium	1.8 – 3.0	mg/dL	
Total Serum Protein: 6 - 8 g/dL Pre-albumin 18 - 38 mg/dL Albumin 3.9 - 5.0 g/dL Globulin 2.3 - 3.5 g/dL Alpha-fetoprotein ≤ 12.8 U/mL Carcinoembryonic antigen ng/ml (CEA): Non-Smokers: 0 - 4.9 ng/ml Smokers: 0 - 9.9 mg/ml OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Serum bilirubin, Total:	0.2 - 1.3	mg/dL	
Pre-albumin 18 − 38 mg/dL Albumin 3.9 − 5.0 g/dL Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen ng/ml (CEA): Non-Smokers: 0 − 4.9 ng/ml Smokers: 0 − 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Direct:	0.0 - 0.3		
Albumin Globulin 2.3 – 3.5 g/dL 2.3 – 3.5 g/dL Alpha-fetoprotein Carcinoembryonic antigen (CEA): Non-Smokers: Smokers: 0 – 4.9 0 – 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 g/dL g/dL g/dL ng/ml ng/ml org/ml	Total Serum Protein:	6 - 8	g/dL	
Globulin 2.3 − 3.5 g/dL Alpha-fetoprotein ≤12.8 U/mL Carcinoembryonic antigen (CEA): Non-Smokers: 0 − 4.9 Smokers: 0 − 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Pre-albumin	18 – 38	mg/dL	
Alpha-fetoprotein <= 12.8 U/mL Carcinoembryonic antigen (CEA): Non-Smokers: 0 - 4.9 Smokers: 0 - 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Albumin	3.9 – 5.0	g/dL	
Carcinoembryonic antigen (CEA): Non-Smokers: Smokers: 0 - 4.9 0 - 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Globulin	2.3 – 3.5	g/dL	
(CEA): Non-Smokers: 0 - 4.9 Smokers: 0 - 9.9 OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Alpha-fetoprotein	<u><</u> 12.8	U/mL	
Smokers: 0 - 9.9 OTHER	Carcinoembryonic antigen		ng/ml	
OTHER Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	(CEA): Non-Smokers:	0 – 4.9		
Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	Smokers:	0 – 9.9		
Total Urinary Protein: 0.050 - 0.100 gm/24 hrs	OTHER			
CSF Protein: 15 - 45 mg/dL		0.050 - 0.100	gm/24 hrs	
	CSF Protein:	15 - 45	mg/dL	
CSF Glucose: 50 - 75 mg/dL			_	

Serum immunoglobulins (mg	<u>/dL)</u>	$\underline{\text{IgA}}$	<u>IgM</u>	<u>IgE</u>
Newborn	611-1542	1.4 - 3.6	5.9 - 24	<53 IU/mL
1 year − 2 year	331 -1164	13.9 - 105.0	41 - 164	<352 IU/ mL
3 year – 4 year	423 - 1090	22 - 157	45 - 190	<352 IU/ mL
Adult	723-1685	69 - 382	63 - 277	<379.0 IU/ mL

Serum C3: 80-180 mg/dL

Serum C4: 20-58 mg/dL

C1q binding assay: ≤4 mEq Heat-aggregated IgG/mL

 $\underline{\textbf{Mitogenic responses}} \hspace{1cm} [^{3}\text{H}] \hspace{1cm} \text{Thymidine (Tdr) incorp.}$

mean \pm s.d.

PHA $15,000 \pm 6,000 \text{ cpm}$ Con A $10,000 \pm 2,000 \text{ cpm}$ Response to PWM a. IgG: $2-5 \mu g/10^6 \text{ cells}$

b. IgM: $3-12 \mu \mu g/10^6$ cells