

TEST NAME	NORMAL RANGE	CRITICAL LOW	CRITICAL HIGH
HEMATOLOGY			
WBC (X 10 ³ /uL)		≤1.0	≥30.0
0 days – 15 days	9.0-30.0		
15 days – 3 months	5.0-19.5		
3 months - 1 year	6.0-17.5		
1 year - 2 years	6.0-17.0		
2 years – 7 years	5.0-16.0		
>7 years	M: 4.23-9.07		
	F: 3.98-10.04		
NRBC %	0-1		
NEUTROPHIL %			
Male	34.0-67.9		
Female	34.0-71.1		
NEUTROPHIL # (X 10 ³ /uL)			
0 days – 3 days	6.00-26.00		
3 days – 15 days	5.00-21.00		
15 days – 1 month	1.50-10.00		
1 month – 2 months	1.00-8.80		
2 months – 6 months	1.00-8.50		
6 months – 7 years	1.50-8.50		
>7 years	M: 1.78-5.38		
	F: 1.56-6.13		
LYMPHOCYTE %			
Male	21.8-53.1		
Female	19.3-51.7		
LYMPHOCYTE # (X 10 ³ /uL)			
0 days – 4 days	2.00-11.50		
4 days – 15 days	2.00-17.00		
15 days – 1 month	2.50-16.50		
1 month – 2 months	3.30-15.00		
2 months – 6 months	4.00-13.50		
6 months – 2 years	4.00-10.50		
2 years – 7 years	2.00-8.00		
>7 years	M: 1.32-3.57		
	F: 1.18-3.74		
MONOCYTE %			
Male	5.3-12.2		
Female	4.7-12.5		
MONOCYTE # (X 10 ³ /uL)			
0 days – 3 days	0.20-3.50		
3 days – 15 days	0.30-2.40		
15 days – 6 months	0.20-1.40		

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6 months – 2 years	0.20-1.00		
2 years – 6 years	0.20-0.90		
>7 years	M: 0.30-0.82 F: 0.24-0.86		
EOSINOPHIL %			
Male	0.8-7.0		
Female	0.7-5.8		
EOSINOPHIL # (X 10 ³ /uL)			
0 days – 3 days	0.00-0.90		
3 days – 1 month	0.02-0.80		
1 month – 2 years	0.02-0.70		
2 years – 7 years	0.02-0.60		
>7 years	M: 0.04-0.54 F: 0.04-0.36		
BASOPHIL %			
Male	0.2-1.2		
Female	0.1-1.2		
BASOPHIL # (X 10 ³ /uL)			
0 days – 3 days	0.02-0.20		
3 days – 4 days	0.00-0.30		
4 days – 7 years	0.00-0.25		
>7 years	0.01-0.08		
RBC (X 10 ⁶ /uL)			
0 days – 15 days	3.90-5.90		
15 days - 2 months	3.10-5.30		
2 months - 3 months	2.70-4.50		
3 months - 6 months	3.10-5.10		
6 months – 7 years	3.90-5.50		
>7 years	M: 4.63-6.08 F: 3.93-5.22		
HEMOGLOBIN (HGB) (g/dL)		≤7.0	≥20
0 days – 15 days	13.4-19.9		
15 days – 1 month	10.7-17.1		
1 month – 2 months	9.1-14.0		
2 months – 3 months	9.1-14.1		
3 months – 6 months	9.5-14.1		
6 months – 2 years	11.3-14.1		
2 years – 7 years	11.5-14.0		
>7 years	M: 13.7-17.5 F: 11.2-15.7		
HEMATOCRIT (HCT) %		≤20.0	≥60.0

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0 days – 15 days	42.0-65.0		≥65.0
15 days – 1 month	33.0-55.0		
1 month – 2 months	28.0-42.0		
2 months – 6 months	29.0-41.0		
6 months – 2 years	31.0-41.0		
2 years – 7 years	34.0-42.0		
>7 years	M: 40.1-51.0 F: 34.1-44.9		
MEAN CORPUSCULAR VOLUME (MCV) (fL)			
0 days – 1 month	88.0-123.0		
1 month – 2 months	91.0-112.0		
2 months – 6 months	74.0-108.0		
6 months – 2 years	70.0-86.0		
2 years – 7 years	73.0-87.0		
>7 years	M: 79.0-92.2 F: 79.4-94.8		
MEAN CORPUSCULAR HEMOGLOBIN (MCH) (pg)			
0 days – 15 days	31.0-37.0		
15 days – 2 months	27.0-36.0		
2 months – 6 months	25.0-35.0		
6 months – 2 years	23.0-31.0		
2 years – 7 years	24.0-30.0		
>7 years	M: 25.7-32.2 F: 25.6-32.2		
MEAN CORPUSCULAR HGB CONCENTRATION (MCHC) (g/dL)			
0 days – 3 months	28.0-36.0		
3 months – 2 years	30.0-36.0		
2 years – 7 years	31.0-36.0		
>7 years	M: 32.3-36.5 F: 32.2-35.5		
RED CELL DISTRIBUTION WIDTH (RDW) %			
0 days – 4 days	13.0-18.0		
4 days – 6 months	11.5-16.0		
6 months – 7 years	11.0-15.0		
>7 years	M: 11.6-14.4 F: 11.7-14.4		
PLATELET COUNT (PLT) (X 10 ³ /uL)		≤40	≥1000
0 days – 4 days	150-450		
4 days – 6 months	150-400		
6 months – 7 years	140-400		
>7 years	M: 163-337 F: 182-369		

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MEAN PLATELET VOLUME (MPV) (fL)			
0 days – 1 year	7.5-11.6		
1 year – 7 years	7.5-11.5		
>7 years	M: 9.4-12.4 F: 9.4-12.3		
RETICULOCYTE %	M: 0.51-1.81		
RETICULOCYTE CORRECTED %			
0 days – 15 days	2.5-6.5		
>15 days	0.5-1.5		
RETICULOCYTE ABSOLUTE #	M: 0.026-0.095		
MEAN RETICULOCYTE VOLUME (MRV) (fL)	102.73-124.89		
IMMATURE RETIC FRACTION (IRF) (ratio)	0.163-0.362		
MANUAL DIFF			
SEGMENTED NEUTROPHIL (SEG) (MANUAL) %			
0 days – 2 days	32-62		
2 days – 3 months	20-40		
3 months – 2 years	15-35		
2 years – 5 years	23-45		
5 years – 9 years	34-54		
9 years – 16 years	32-64		
>16 years	50-70		
BANDED NEUTROPHIL (BAND) (MANUAL) %			
0 days – 15 days	10-15		
15 days – 11 months	8-10		
>11 months	5-12		
LYMPHOCYTE (MANUAL) %			
0 days – 3 days	23-36		
3 days – 15 days	36-46		
15 days – 22 days	43-53		
22 days – 11 months	41-71		
11 months – 2 years	45-75		
2 years – 5 years	35-65		
5 years – 12 years	28-52		
12 years – 20 years	23-47		
>20 years	15-41		
MONOCYTE (MANUAL) %	2-10		
EOSINOPHIL (MANUAL) %	1-4		
BASOPHIL (MANUAL) %	0-1		
ERYTHROCYTE SEDIMENTATION RATE (ESR) mm/hr	M: 2-10 F: 2-15		
PROTHROMBIN TIME (PT) seconds	9.4-12.5		

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INTERNATIONAL RATIO (INR)	0.9-1.1		≥5.0
PARTIAL THROMBOPLASTIN TIME (PTT)	25.1-36.5		≥200
FIBRINOGEN (FIB) mg/dL	276-471	≤100	
D-DIMER ng/mL	0-230		≥600
URINALYSIS			
SPECIFIC GRAVITY	1.001-1.035		
pH	4.5-8.0		
UROBILINOGEN	<1.0		
BLOOD GAS			
ARTERIAL BLOOD GAS (ABG)			
pH (ABG)		≤7.2	≥7.6
0 days – 5 days	7.27-7.47		
>5 days	7.35-7.45		
PCO2 (ABG) mm/Hg		≤20	≥70
0 days – 6 days	27-40		
6 days – 2 years	27-41		
>2 years	35-45		
PO2 (ABG) mm/Hg		≤40	
0 days – 2 days	54-95		
>2 days	80-100		
HCO3 (ABG) mmol/L			
0 days – 5 days	16-23		
5 days – 13 years	19-27		
>13 years	21-31		
TCO2 (ABG) mmol/L			
0 days – 5 days	17-24		
5 days – 13 years	20-28		
>13 years	24-30		
BASE EXCESS (ABG) mmol/L	(-)2.0-2.0		
OXYGEN SATURATION (O2SAT) (ABG) %	95-98		
VENOUS BLOOD GAS (VBG)			
pH (VBG)	7.32-7.42		
PCO2 (VBG) mm/Hg	41-51		
PO2 (VBG) mm/Hg	25-40		
HCO3 (VBG) mmol/L	(-)5.0-5.0		
TCO2 (VBG) mmol/L			
0 days – 5 days	17-24		
5 days – 13 years	20-28		
>13 years	21-31		
CAPILLARY BLOOD GAS			
pH (CAPILLARY)			
0 days – 5 days	7.27-7.47		

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>5 days	7.35-7.45		
PCO2 (CAPILLARY) mm/Hg			
0 days – 6 days	27-40		
6 days – 2 years	27-41		
>2 years	35-45		
PO2 (CAPILLARY) mm/Hg			
0 days – 2 days	54-95		
>2 days	80-100		
HCO3 (CAPILLARY) mmol/L			
0 days – 5 days	16-23		
5 days – 13 years	19-27		
>13 years	23-29		
TCO2 (CAPILLARY) mmol/L			
0 days – 5 days	17-24		
5 days – 13 years	20-28		
>13 years	21-31		
BASE EXCESS (CAPILLARY) mmol/L	(-)2.0-2.0		
CORD BLOOD GAS (ARTERIAL)			
pH	7.18-7.38	≤7.00	
PCO2 mm/Hg	32-66		
PO2 mm/Hg	6-30		
HCO3 mmol/L	17-27		
BASE EXCESS mmol/L	(-)10-(-)2		
CORD BLOOD GAS (VENOUS)		≤7.00	
pH	7.25-7.45		
PCO2 mm/Hg	27-49		
PO2 mm/Hg	17-41		
HCO3 mmol/L	12-28		
BASE EXCESS mmol/L	(-)10-(-)2		
CARBOXYHEMOGLOBIN (COHb) %	0.0-1.5		≥20
CHEMISTRY			
ACETAMINOPHEN ug/mL	10.0-30.0		≥40.0
ALANINE AMINOTRANSFERASE (ALT) U/L	12.0-78.0		
ALBUMIN (ALB) gm/dL	2.6-4.6		
ALKALINE PHOSPHATASE (ALP) U/L			
0 days – 11 months	20-225		
11 months – 10 years	65-265		
10 years – 15 years	M: 55-295		
	F: 10-250		
15 years – 21 years	M: 20-180		
	F: 30-130		
>21 years	45-117		

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AMMONIA			≥100
0 days – 6 days	64-107		
6 days – 15 days	55-90		
15 days – 47 months	20-55		
47 months – 16 years	29-59		
>16 years	11-32		
AMYLASE (AMY) U/L	25 - 115		
ASPARTATE AMINO TRANSFERASE (AST) U/L	22-37		
BETA HCG,QUANTITATIVE (BHCG) mIU/MI	0-10		
BILIRUBIN, DIRECT mg/dL	0.00-0.20		
BILIRUBIN, TOTAL mg/dL			≥15.0
0 – 3 days	0.1-7.0		
3 days – 15 days	2.0-10.0		
15 days – 21 days	0.1-12.0		
>21 days	0.2-1.0		
BLOOD UREA NITROGEN (BUN) mg/dL			
0 days – 1 year	4-19		
1 year – 5 years	7-22		
>5 years	7-18		
CALCIUM (CA) mg/dL	8.5-10.1	≤6.5	≥13.0
CARBAMAZEPINE ug/mL	4.0-12.0		≥15.0
CARBON DIOXIDE (CO2) mEq/L	21-32		
CARCINOEMBRYONIC ANTIGEN (CEA) ng/mL	0.2-5.0		
CHLORIDE (CL) mEq/L	98-107		
CHOLESTEROL, TOTAL (CHOL) mg/dL	0-200		
CHOLESTEROL HDL mg/dL	40-59		
CHOLESTEROL DIRECT LDL mg/dL	0-100		
CREATINE KINASE (CK) IU/L	39-308		
CREATINE KINASE (CK-MB) ng/mL	0.5-3.6		
CREATININE mg/dL			≥5.0
0 days – 5 years	0.3-0.5		
5 years – 10 years	0.5-0.8		
>10 years	0.55-1.3		
C-REACTIVE PROTEIN HIGH SENSITIVITY (CARDIAC) (CRPC) mg/dL	0.00-0.30		
C-REACTIVE PROTEIN HIGH SENSITIVITY (INFLAMMATION) (CRPI) mg/dL	0.00-0.90		
DIGOXIN ng/mL	0.90-2.00		≥3.00
ETHANOL (ALCOHOL) mg/dL	0.0-80.0		≥250.0
ESTRADIOL (E2) pg/mL	M: 0-52.5		
	F:		
	Follicular Phase: 21.4-164.8		
	Mid-Cycle: 49.9-367.2		
	Luteal Phase: 40.2-259.0		

TEST NAME	NORMAL RANGE	CRITICAL LOW	CRITICAL HIGH
	Postmenopausal:		
	On Hormone Therapy: 0-462.1		
	Untreated: 0-58.3		
FERRITIN ng/mL	8-388		
FOLATE ng/mL	3.1-17.5		
GAMMA GLUTAMYL TRANSPEPTIDASE (GGT) U/L	5-85		
GENTAMYCIN, RANDOM ug/dL	2.0-12.0		>14.0
GENTAMYCIN, PEAK ug/dL	3.0-10.0		>12.0
GENTAMYCIN, TROUGH ug/dL	0.0-1.9		>2.0
GLOBULIN (CALUCLATED) gm/dL	2.3 - 3.5		
GLUCOSE mg/dL	Fasting: 70-110	≤25	≥400
	2hr pp: 70-110		
	Random: 70-110		
	Waived: 70-110		
HEMOGLOBIN A1C (HGB A1C) %	4.8-6.0		
IONIZED CALCIUM mg/dL	4.60-5.40	≤2.0	≥6.0
IRON ug/dL	50-175		
IRON, TIBC	250-450		
IRON, SATURATION (CALCULATED) %	20-50		
KETONE (POINT OF CARE, WAIVED) mmol/L	<0.6		>1.5
LACTIC ACID (LA) mEq/L	0.4-2.0		≥5.0
LACTATE DEHYDROGENASE (LDH/LD) U/L			
0 - 23 months	100-450		
23 months – 5 years	100-320		
5 – 7 years	100-270		
7 – 13 years	100-260		
>13 years	87-246		
LIPASE U/L	65-230		
LITHIUM mmol/L	0.60-1.20		≥1.6
MAGNESIUM mg/dL	1.8-2.4	≤1.0	≥9.0
MYOGLOBIN ng/mL	14-106		
PHENOBARBITAL ug/mL	15.0-40.0		≥60.0
PHENYTOIN/DILANTIN ug/mL	10.0-20.0		≥30.0
PHOSPHORUS mg/dL		≤1.0	
0 – 1 days	5.6-8.0		
1 – 10 days	6.0-10.0		
10 days – 15 years	4.0-7.0		
≥15 years	2.5-4.9		
pH BLOOD	7.32-7.42		
POTASSIUM (K) mEq/L	3.5-5.1	≤2.5	≥6.0
PREALBUMIN mg/dL	20.0-40.0		
PROGESTERONE ng/mL	M: 0-1.97		

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	F:		
	Follicular Phase: 0.21-1.70		
	Mid-Luteal: 8.76-21.6		
	Luteal Phase: 2.25-24.2		
	Post-menopausal: 0.00-0.901		
	Pregnant Females:		
	1st Trimester: 11.4-41.0		
	2nd Trimester: 13.8-156		
	3rd Trimester: 51.4->200		
PROSTATE SPECIFIC ANTIGEN, TOTAL ng/mL	0.01-4.00		
RHEUMATOID FACTOR QUANT	0.0-15.0		
SALICYLATE mg/dL	3.0-20.0		≥30.0
SODIUM (NA) mEq/L	136-145	≤120	≥160
TESTOSTERONE, TOTAL	M:		
0 - 51 years	113-1065		
≥ 51 years	95-948		
	F:		
	Pre-menopausal: 9-53		
	Post-menopausal: 0-48		
T3 UPTAKE %	31-39		
THYROXINE (T4) ug/dL	4.7-13.3		
T3 FREE (FT3) pg/mL			
1 month – 2 years	3.34-5.24		
2 years – 12 years	3.31-4.88		
12 years – 20 years	2.91-4.93		
≥ 20 years	2.18-3.98		
T4 FREE (FT4) ng/dL			
1 month – 2 years	0.88-1.48		
> 2 years	0.76-1.46		
THEOPHYLLINE ug/mL	10.0-20.0		≥20.0
THYROID STIMULATING HORMONE (TSH) uIU/mL			
1 day – 2 days	3.20-34.60		
2 days – 4 days	0.70-15.40		
4 days – 1 month	1.70-9.10		
1 month – 1 year	0.80-8.20		
> 1 year	0.36-3.74		
TOBRAMYCIN, RANDOM ug/mL	2.0-12.0		>14.0
TOBRAMYCIN, PEAK ug/mL	3.0-10.0		>12.0
TOBRAMYCIN, TROUGH ug/mL	0.0-1.9		>2.0
TOTAL PROTEIN gm/dL	6.0-8.7		
TRIGLYCERIDES mg/dL	0-150		
TROPONIN I (high sensitivity) pg/mL	M: 5.0-78.5		M: >78.5

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	F: 5.0-53.7		F: >53.7
URIC ACID mg/dL	3.5-7.2		
VALPROIC ACID ug/mL	50.0-100.0		≥150.0
VANCOMYCIN, RANDOM ug/mL	10.0-26.0		>30.0
VANCOMYCIN, TROUGH ug/mL	10.0-20.0		>30.0
VITAMIN B12 pg/mL	193-986		
URINE CHEMISTRY			
AMYLASE, URINE	Random: NOT ESTABLISHED		
	2 HR: NOT ESTABLISHED		
	24 HR: NOT ESTABLISHED		
CHLORIDE, URINE	98.0-107.0		
CREATININE, URINE	NOT ESTABLISHED		
MICROALBUMIN, URINE	NOT ESTABLISHED		
POTASSIUM, URINE	16.0-123.0		
PROTEIN, URINE	Random: NOT ESTABLISHED		
	12 HR: NOT ESTABLISHED		
	24 HR: NOT ESTABLISHED		
SODIUM, URINE	43.0-217.0		
CREATININE CLEARANCE			
0 days – 16 years	70-140		
>16 years	M: 85-125		
	F: 75-115		
SPINAL FLUID			
GLUCOSE CSF mg/dL	40-70		
LACTIC ACID CSF mEq/L	0.6-2.2		
PROTEIN CSF mg/dL	15-45		
RBC CSF (10 ⁶ /uL)	NOT ESTABLISHED		
WBC CSF (X 10 ³ /uL)			≥100
0 – 1 month	0-30 cells/uL		
>1 month	0-5 cells/uL		
BODY FLUID			
RBC (BODY FLUID) 10 ⁶ /uL	NOT ESTABLISHED		
WBC (BODY FLUID) 10 ³ /uL	NOT ESTABLISHED		
CALCULATIONS			
ANION GAP	5-15		
AG RATIO	>1.0		
CHOL/HDL RATIO (RISK)	M: 0-5.0		
	F: 0-4.5		
CKMB RELATIVE INDEX	0-4		
BLOOD BANK			
ABO/Rh DISCREPANCIES			
CROSSMATCH INTERPRETATION	COMPATIBLE		INCOMPATIBLE

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DAT (Direct Antiglobulin Test)	NEGATIVE		POSITIVE
SEROLOGY			
C.DIFF (Clostridium Difficile) A/B	NEGATIVE		POSITIVE
FLU (Influenza) A or B	NEGATIVE		POSITIVE
STREP (Group A)	NEGATIVE		POSITIVE
RSV (RESPIRATORY SYNCYTIAL VIRUS)	NEGATIVE		POSITIVE
COVID RAPID	NEGATIVE		POSITIVE
MICROBIOLOGY			
CAMPYLOBACTER ANTIGEN	NEGATIVE		POSITIVE
GRAM STAIN FOR BLOOD, CSF, JOINT OR WOUND ASPIRATES OR OTHER INVASIVELY COLLECTED SPECIMENS	NO ORGANISMS SEEN (NOS)		POSITIVE
CSF OR BODY FLUID INDIA INK OR KOH FOR INFECTIOUS PATHOGENIC YEASTS OR FUNGAL ELEMENTS	NO ORGANISMS SEEN (NOS)		POSITIVE
CLINICALLY SIGNIFICANT GROWTH FOR BLOOD CULTURES	NEGATIVE		POSITIVE
GROWTH FOR CSF, JOINT OR WOUND ASPIRATES OR OTHER INVASIVELY COLLECTED CULTURES AND TRANSFUSION REACTION CULTURES	NO ORGANISMS SEEN (NOS)		POSITIVE
ENTERIC PATHOGEN SCREEN (SALMONELLA, SHIGELLA, E. COLI, SHIGA-LIKE TOXINS, AND PARASITE IF OBSERVED)	NEGATIVE		POSITIVE
LABORATORY SIGNIFICANT OR UNEXPECTED FINDINGS			
POSITIVE RPR SCREEN (RAPID PLASMA REAGIN)			
POSITIVE HIV SCREEN			
POSITIVE ROTAVIRUS			
POSITIVE MRSA (Methicillin Resistant Staphylococcus Aureus)			
POSITIVE ESBL (Extended-Spectrum Beta-Lactamase)			
POSITIVE VRE (Vancomycin Resistant Enterococcus)			
POSITIVE MDRO (Multiple Drug Restant Organism)			
POSITIVE XDRO (Extremely Drug Restant Organism)			
CYTOPATHOLOGY SIGNIFICANT OR UNEXPECTED FINDINGS			
MALIGNANCY IN A FLUID WITH A NEGATIVE CLINICAL HISTORY			
INVASIVE CARCINOMA IDENTIFIED IN A CERVICAL/VAGINAL SAMPLING			
SIGNIFICANT DISPARITIES BETWEEN HISTOLOGICAL AND CYTOLOGICAL FINDINGS			
ANATOMICAL PATHOLOGY SIGNIFICANT OR UNEXPECTED FINDINGS			
FINDINGS NOT EXPECTED ACCORDING TO CLINICAL HISTORY			
MALIGNANCY (ESPECIALLY NOT HISTORICAL AND/OR IN UNCOMMON LOCATION OR SPECIMEN TYPE)			
LIFE-THREATENING INFECTION			
FAT IN ENDOMETRIAL CURETTING			
NO CHORIONIC VILLI OR TROPHOBLASTIC CELLS IN PRODUCTS OF CONCEPTION (RULE OUT ECTOPIC PREGNANCY)			
CHANGE IN FROZEN SECTION DIAGNOSIS AFTER REVIEW OF PERMANENT SECTIONS			
AMENDMENTS TO REPORTS THAT MAY SIGNIFICANTLY AFFECT PATIENT CARE			
EVIDENCE OF ORGAN REJECTION OR GRAFT VS. HOST DISEASE			