

**REFERENCE RANGES FOR CLINICAL LABORATORY TESTS**

Please note: These reference ranges are applicable for both East and West Campuses.

***(Last updated 01/14/2010 - CHECK ONLINE LAB MANUAL for most current information)***

<b>TEST NAME</b>	<b>REFERENCE RANGE</b>	<b>UNITS</b>
Acetaminophen	10 - 30	ug/ml
Acetone	Negative	
Acid Fast Bacillus Stain	Negative	
Acid Fast Bacillus Stain, Modified	Negative	
Alanine Aminotransferase	0 - 40	IU/L
Albumin (Serum)	3.5 – 5.2	g/dL
Albumin/Creatinine Ratio	<30	mg albumin / g creatinine
Alkaline Phosphatase	Up to 1 year: 0 – 450 1 – 12 years: 0 – 300  13 – 17 years Male: 0 – 390 Female: 0 – 187  > 17 years Male: 40 – 130 Female: 35 – 105	IU/L
Alpha-2-Antiplasmin	85 - 120% of reference plasma	
Alpha-Fetoprotein, Tumor Marker (Serum)	<8.7	ng/ml
Ammonia	10 – 60	umol/L
Amniotic Fluid Scan	Varies with gestational age. Refer to report.	
Amphetamines	Negative	
Amylase (Serum)	0 - 100	IU/L
Amylase (Urine)	None available. Contact laboratory.	
Antibody Screen, Red Blood Cell	Negative	
Anti-Cardiolipin Antibody	IgG: less than 15 IgM: less than 12.5	GPL or MPL units
Anti-Gliadin Antibody, IgA	0-19; Negative 20-30; Borderline >30; Positive	units
Anti-Native (ds) DNA	Negative	
Anti-Neutrophil Cytoplasmic Antibody	Negative	
Anti-Nuclear Antibody Screen and Titer	Negative	POS / NEG
Anti-Parietal Cell Antibodies	Negative	Pos/Neg
Anti-Platelet Antibodies, Drug-Associated	No antibodies detected	

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<b>Anti-Platelet Antibodies, Heparin-Associated</b>	No antibodies detected	
<b>Anti-Platelet Antibodies, Indirect</b>	Negative for platelet-specific and HLA class I antibodies	
<b>Anti-Platelet Antibody, Direct</b>	None Detected	
<b>Anti-Smooth Muscle Antibody</b>	Negative	
<b>Anti-Streptolysin O Antibody</b>	Less than 200 Children less than 6 years of age: less than 100	IU/ml
<b>Antithrombin III - Functional assay</b>	69 - 121	%
<b>Anti-Thyroglobulin Antibody</b>	Less than 40	IU/mL
<b>Anti-Thyroid Peroxidase Antibody</b>	0-35	IU/mL
<b>Anti-Tissue Transglutaminase Antibody, IgA</b>	0-19; Negative 20-30; Borderline >30; Positive	units
<b>APT Test</b>	Negative (i.e., if adult hemoglobin is present)	
<b>Arsenic (Urine)</b>	Quest manual: "not well established". In acute toxicities, >100 ug/dL (Ref: Howanitz Lab Medicine 1991)	ug/L
<b>Arterial Blood Gas Analysis</b>	See individual tests	
<b>Aspartate Aminotransferase</b>	0 - 40	IU/L
<b>Barbiturates (Serum)</b>	None	
<b>Barbiturates (Urine)</b>	None	
<b>Benzodiazepines (Serum)</b>	Negative	
<b>Benzodiazepines (Urine)</b>	Negative	
<b>Beta-2 Microglobulin</b>	0.8 - 2.2	mg/L
<b>Bicarbonate (Serum)</b>	22-32 Note that the reference range was changed as of 7/1/2005.	mEq/L
<b>Bicarbonate (Urine)</b>	Usually absent in urine; if pH is less than 6.0, bicarbonate cannot be present.	mmol/L
<b>Bilirubin, Direct</b>	0 - 0.3	mg/dL
<b>Bilirubin, Indirect</b>	0 - 1.2	mg/dL
<b>Bilirubin, Neonatal</b>	Varies with neonate's age. See link below for the AAP guideline on management of hyperbilirubinemia including the charts of bilirubin versus postnatal age in hours. <a href="http://pediatrics.aappublications.org/cgi/content/full/114/1/297">http://pediatrics.aappublications.org/cgi/content/full/114/1/297</a>	mg/dL

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<b>Bilirubin, Total</b>	Birth to 1 day: 0.0 - 6.0 2 days: 0.0 - 7.0 3 to 5 days: 0.0 - 12.0 Greater than 5 days: 0.0 - 1.5	mg/dL
<b>Blastomyces dermatitidis Antibody</b>	<1:8 (no antibodies detected)	Titer
<b>Bleeding Time</b>	2 - 8	minutes
<b>Bloom Syndrome DNA Mutation Analysis</b>	No mutation detected	
<b>Bone Marrow Examination</b>	Refer to report	
<b>Borrelia burgdorferi (Lyme) (IgG/IgM) Antibodies</b>	Negative	
<b>C1 Esterase Inhibitor, Protein, Quantitation</b>	6 - 25	
<b>C1q</b>	5.0 - 8.6	
<b>C3</b>	90 - 180	mg/dL
<b>C4</b>	10 - 40	mg/dL
<b>CA 125</b>	<35	u/ml
<b>CA 27.29</b>	Up to 39 U/mL in adult females No reference range established for males.	U/mL
<b>Calcitonin</b>	Females: <4 ; Males: <8	
<b>Calcium (Urine)</b>	Varies with diet. See BIDMC Laboratory Manual for more information	mg/dL
<b>Calcium, Free (Blood)</b>	1.12 - 1.32	mmol/L
<b>Calcium, Total (Serum)</b>	8.4 - 10.3	mg/dL
<b>Carbamazepine</b>	4.0 - 12.0 (single drug regimen)	ug/ml
<b>Carbon Dioxide, Partial Pressure (Blood)</b>	35 - 45	mm Hg
<b>Carboxyhemoglobin</b>	0.5 - 1.5% of total hemoglobin	percent
<b>Carcinoembryonic Antigen</b>	0 - 4	ng/ml
<b>Catecholamines, Urine</b>	Epinephrine: 0 – 20 Norepinephrine: 15 – 80 Dopamine: 65 - 400	
<b>Cell Count and Differential (Body Fluid)</b>	Refer to report	
<b>Cell Count and Differential (Cerebrospinal Fluid)</b>	WBC: 0-5 uL	cells/uL
<b>CH50 (Complement, Total)</b>	22 - 60	
<b>Chlamydia trachomatis Nucleic Acid Amplification</b>	No Chlamydia trachomatis present	

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<b>Chloride (Serum)</b>	96 - 108	mEq/L
<b>Chloride (Urine)</b>	None available.	mmol/L
<b>Cholesterol, HDL</b>	Very low HDL cholesterol levels (<40) represent an independent risk factor for coronary artery disease. However, LDL cholesterol levels should be the primary focus of risk assignment. Elevated HDL cholesterol levels (>60) are protective.	mg/dL
<b>Cholesterol, LDL</b>	Optimal <100 Near optimal <130 Borderline high 130-159 High 160-189 Very high >189	mg/dL
<b>Cholesterol, Total</b>	Desirable: <200 Borderline High: 200-239 High: > 239	mg/dL
<b>Chromosome Analysis (Amniotic Fluid)</b>	Males: 46,XY; Females: 46,XX	
<b>Chromosome Analysis (Bone Marrow/Leukemic Blood)</b>	Female: 46,XX; Male: 46,XY	
<b>Chromosome Analysis (Chorionic Villus)</b>	Male: 46,XY; Female: 46,XX	
<b>Chromosome Analysis (Cord Blood, PUBS or Neonate)</b>	Female: 46,XX; Male: 46,XY	
<b>Chromosome Analysis (Non-Leukemic Peripheral Blood)</b>	Male: 46,XY; Female: 46,XX	
<b>Chromosome Analysis (Tissue)</b>	Male: 46,XY; Female: 46,XX	
<b>Clorazepate</b>	0.5 - 1.3	
<b>Clostridium difficile Toxin A EIA</b>	Negative	
<b>Clostridium difficile Toxin B Cytotoxicity Assay</b>	Toxin B not detected	
<b>Cocaine</b>	Negative	
<b>Cold Agglutinin Evaluation</b>	Negative	
<b>Cold Agglutinin Screen</b>	Negative	
<b>Complete Blood Count</b>	See individual tests or <a href="http://home.caregroup.org/departments/pathology/lab_manual/addinfo/cbcref.htm">http://home.caregroup.org/departments/pathology/lab_manual/addinfo/cbcref.htm</a>	
<b>Complete Blood Count with Differential</b>	See individual tests or <a href="http://home.caregroup.org/departments/pathology/lab_manual/addinfo/cbcref.htm">http://home.caregroup.org/departments/pathology/lab_manual/addinfo/cbcref.htm</a>	
<b>Copper (Serum)</b>	590 - 1180	
<b>Cord Blood, Neonatal</b>	See individual tests	

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<b>Cortisol (Serum)</b>	2 – 20 Note that a normal diurnal variation exists for cortisol: 7 to 10 AM: 6.2 - 19.4 4 to 8 PM: 2.3 - 11.9	ug/dL
<b>Cortisol (Urine)</b>	2.9 - 34.0	
<b>C-Peptide</b>	Fasting: 0.8 - 4.0	ng/ml
<b>C-Reactive Protein</b>	0.0 - 5.0	mg/L
<b>Creatine Kinase</b>	Male: 47 – 322 Female: 29 – 201	IU/L
<b>Creatine Kinase - MB</b>	0 - 10	ng/ml
<b>Creatinine (Serum)</b>	Birth to 12 years: 0.0 - 0.7 Male >12 years: 0.5 - 1.2 Female >12 years: 0.4 - 1.1	mg/dL
<b>Creatinine (Urine)</b>	The urine creatinine concentration varies with the degree of hydration. However, 24 hour excretion of creatinine is related to muscle mass as follows: 15 mg/kg for women, 20 mg/kg for men. Thus a 70 kg man should excrete roughly 1400 mg/day of creatinine; this fact can be used to establish the adequacy of collection (as opposed to the volume, which will vary with fluid intake).	mg/dL
<b>Creatinine Clearance</b>	Male: 85 – 125 Female: 75 - 115	ml/minute
<b>Crossmatch</b>	Not applicable	
<b>Cryoglobulin Panel</b>	Negative	NEG/POS
<b>Cryptococcal Antigen (Cerebrospinal Fluid)</b>	Negative	Titer
<b>Cryptococcal Antigen (Serum)</b>	Negative	Titer
<b>Cryptosporidium / Giardia (DFA)</b>	Negative	
<b>CSF IgG Ratio/Index</b>	<1.0	none (ratio)
<b>Culture, Anaerobic</b>	Negative	
<b>Culture, Aspirate</b>	No growth	
<b>Culture, Biopsy/Tissue</b>	No growth	
<b>Culture, Blood Bag Fluid</b>	Negative	
<b>Culture, Blood, Bartonella</b>	No growth	
<b>Culture, Blood, for Dimorphic Fungi and Mycobacteria</b>	No growth	
<b>Culture, Blood, Neonate</b>	No growth	

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<b>Culture, Blood, Routine</b>	No growth	
<b>Culture, Body Fluid</b>	No growth	
<b>Culture, Bone Marrow</b>	No growth	
<b>Culture, Brucella</b>	No Brucella isolated	
<b>Culture, Campylobacter</b>	No Campylobacter present	
<b>Culture, Catheter or Line</b>	No growth	
<b>Culture, Cerebrospinal Fluid</b>	No growth	
<b>Culture, Cytomegalovirus</b>	No CMV present	
<b>Culture, Dialysis Fluid</b>	No growth	
<b>Culture, Enterovirus</b>	No Enterovirus present	
<b>Culture, Fungal</b>	No fungi detected	
<b>Culture, Fungal, Hair/Skin/Nail</b>	No fungi detected	
<b>Culture, Genital, for Staphylococcus aureus (TSS)</b>	Normal genital flora	
<b>Culture, Genital, for Yeast vaginitis</b>	No yeast detected	
<b>Culture, Group B Strep</b>	No Group B strep present	
<b>Culture, Herpes Simplex Virus (HSV)</b>	No HSV detected	
<b>Culture, Legionella</b>	No Legionella detected	
<b>Culture, Malassezia furfur</b>	No Malassezia detected	
<b>Culture, MRSA Screen</b>	None detected	
<b>Culture, Mycobacterial</b>	No Mycobacteria detected	
<b>Culture, Mycoplasma/Ureaplasma</b>	No Mycoplasma/Ureaplasma detected	
<b>Culture, Nocardia</b>	No Nocardia isolated	
<b>Culture, Nose/Nasal/Nares</b>	No Staphylococcus isolated	
<b>Culture, r/o GC Only</b>	No GC isolated	
<b>Culture, Respiratory (Bronchial Brush)</b>	No growth or normal respiratory flora	
<b>Culture, Respiratory (Bronchial Washings)</b>	Oropharyngeal flora	
<b>Culture, Respiratory (Bronchoalveolar Lavage)</b>	Oropharyngeal flora	
<b>Culture, Respiratory (Endotracheal Lavage)</b>	Oropharyngeal flora	
<b>Culture, Respiratory (Sputum)</b>	Oropharyngeal flora	

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<b>Culture, Respiratory (Throat)</b>	No Beta streptococcus isolated No Neisseria gonorrhoeae (when requested) isolated	
<b>Culture, Respiratory (Tracheal Aspirate)</b>	Oropharyngeal flora	
<b>Culture, Respiratory Viruses</b>	No respiratory viruses present	
<b>Culture, Staph aureus Screen</b>	No Staph aureus isolated	
<b>Culture, Stool (Neonate Fecal Swab)</b>	No pathogens detected	
<b>Culture, Stool (Routine)</b>	No pathogens present	
<b>Culture, Stool, E coli 0157:H7</b>	None detected	
<b>Culture, Stool, Vibrio</b>	None detected	
<b>Culture, Stool, Yersinia</b>	None detected	
<b>Culture, Urine (Prostatic Massage)</b>	No growth	
<b>Culture, Urine (Routine)</b>	No growth	
<b>Culture, Urine (Sterile Site)</b>	Negative	
<b>Culture, Varicella-Zoster Virus</b>	Negative	
<b>Culture, Virus (Unspecified)</b>	Negative	
<b>Culture, VRE Screen</b>	None detected	
<b>Culture, Wound (Swab)</b>	No growth	
<b>Cyclospora Smear</b>	None detected	
<b>Cyclosporine</b>	Reference range varies with type of transplant as well as specific indication. Unlike most therapeutic drugs, there is no simple reference range for cyclosporine. The optimal concentration varies with the type of transplant, the time interval post-transplant, and a variety of factors unique to each individual (such as drug metabolism kinetics and co-administration of other immunosuppressive drugs). In general, the therapeutic range is roughly 100-400 ng/mL. Furthermore, it should be noted that cyclosporine assays are not well standardized and, thus, values from different methods should NOT be used interchangeably. Differences include specimen type (whole blood versus serum) as well as antibody specificity in immunoassays (some detect parent compound only vs others that detect parent plus different metabolites (of which there are roughly 20!)). We use the Abbott TDx whole blood, monoclonal assay, which is relatively specific for the parent compound, showing only limited cross-reactivity with one or two metabolites.	ng/ml
<b>Cytomegalovirus (CMV) IgG Antibody</b>	Negative	
<b>Cytomegalovirus (CMV) IgG/IgM Antibody Panel</b>	Negative	

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<b>Cytomegalovirus (CMV) viral load</b>	Not detected or <600 copies/ml Linear range: 600 to 100,000 copies/ml	copies/ml
<b>Cytomegalovirus Antigenemia</b>	Negative	
<b>Cytomegalovirus Early Antigen</b>	Negative	
<b>Cytomegalovirus PCR (CSF)</b>	Negative	
<b>D-Dimer</b>	Less than 500	ng/ml
<b>Dehydroepiandrosterone-Sulfate</b>	See link below <a href="http://home.caregroup.org/departments/pathology/lab_manual/PLM_dhea.htm">http://home.caregroup.org/departments/pathology/lab_manual/PLM_dhea.htm</a>	ug/dL
<b>Digoxin</b>	0.9 - 2.0	ng/ml
<b>Direct Coombs Test</b>	Negative Elate analysis performed to determine specificity of antibody following Transfusion Medicine specialist review.	
<b>Direct RSV Antigen Test</b>	Negative	
<b>eGFR</b>	Mean values in healthy individuals: Ages 20-29. . . . .116 Ages 30-39. . . . .107 Ages 40-49. . . . . 99 Ages 50-59. . . . . 93 Ages 60-69. . . . . 85 Ages 70+. . . . .75	mL/min/1.73 m2
<b>Epstein Barr Virus (EBV) IgG/IgM/EBNA Antibody</b>	Negative	
<b>Erythrocyte Sedimentation Rate</b>	Male 0 – 15 Female 0 - 20	mm/hour
<b>Estradiol</b>	Female: Follicular phase: 13 – 166 Ovulation: 86 – 498 Luteal phase: 44 – 211 Postmenopausal : 0 – 55  Male: 8 - 45	pg/mL
<b>Estriol, Unconjugated</b>	Varies with gestational age. Refer to separate maternal screening report.	ng/ml
<b>Ethanol</b>	<10 (reported as "none detected")	mg/dL
<b>Factor II</b>	50 - 150% of reference plasma	
<b>Factor IX</b>	50 - 150% of reference plasma	
<b>Factor V</b>	50 - 150% of reference plasma	
<b>Factor V Leiden</b>	No mutation detected	

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<b>Factor VII</b>	50 - 150% of reference plasma	
<b>Factor VIII</b>	50-150% of reference plasma	
<b>Factor VIII Inhibitor</b>	Negative	Bethesda unit or "BU"
<b>Factor X</b>	50 - 150% of reference plasma	
<b>Factor XI</b>	50 - 150% of reference plasma	
<b>Factor XII</b>	40 - 150% of reference plasma	
<b>Factor XIII Screen</b>	Present	
<b>Ferritin</b>	Male: 30 – 400 Female: 13 - 150	ng/ml
<b>Fetal Fibronectin</b>	Neg	Pos/Neg
<b>Fetal Lung Maturity</b>	<40: immature 40-54: indeterminate >55: mature	
<b>Fibrin Degradation Products</b>	0 - 10	ug/ml
<b>Fibrinogen</b>	150 - 400	mg/dL
<b>Folate</b>	2 – 20	ng/ml
<b>Follicle Stimulating Hormone</b>	Female: Follicular phase: 3.5 - 12.5 Ovulation: 4.7 -21.5 Luteal phase: 1.7 - 7.7 Post menopausal: 25.8 - 134.8  Male: 1.5 - 12.4	mIU/ml
<b>Free T4 Index</b>	4.4 - 11.4	none (ratio)
<b>Fungal Smear (KOH Preparation)</b>	No fungal elements seen	
<b>Gamma Glutamyltransferase</b>	Male: 8 – 61 Female: 5 - 36	IU/L
<b>Gentamicin</b>	Peak: 5.0 - 10.0; Trough: 0.5 - 2.0 For patients on "once daily regimen", the reference range is <2.5 (trough)	ug/ml
<b>Glucose (Serum)</b>	Birth to 30 days: 50 – 80 30 days to 18 years: 60 – 110 Over 18 years: 70 - 100	mg/dL
<b>Glucose (Urine)</b>	None detected	mg/dL
<b>Glucose-6-Phosphate Dehydrogenase, Profile</b>	6 - 12.4	U/g hemoglobin
<b>Glycated Hemoglobin</b>	4.8-5.9 (in non-diabetic patients)	%

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<b>Haptoglobin</b>	30 - 200	mg/dL
<b>Heinz Body Preparation</b>	Negative	
<b>Helicobacter pylori IgG Antibody</b>	Negative	
<b>Hematocrit, Automated</b>	Adults: Female 36 - 48% Male: 40 - 52%	
<b>Hematocrit, Spun</b>	Female: 36 - 48%; Male: 40 - 52%	
<b>Hemochromatosis</b>	No mutation, or Heterozygous mutation, or Homozygous mutation	None
<b>Hemoglobin</b>	Female 12 - 16; Male 14 - 18	g/dL
<b>Hemoglobin A2</b>	2.5 - 3.3% of total hemoglobin	
<b>Hemoglobin Electrophoresis Evaluation</b>	No abnormal bands seen	
<b>Hemoglobin F</b>	0 - 2% of total hemoglobin	
<b>Hemosiderin</b>	Negative	
<b>Heparin Level (Unfractionated)</b>	Unfractionated heparin: 0.3 - 0.7	U/ml
<b>Heparin, Low molecular weight (LMWH)</b>	0.6-1 IU/ml is the target therapeutic range, for BID dosing Specimen should be drawn 4 hours after subcutaneous injection (peak level)	U/mL
<b>Hepatitis A Virus Antibody</b>	Negative	POS / NEG
<b>Hepatitis A Virus Antibody, IgM</b>	Negative	POS / NEG
<b>Hepatitis B Virus (HBV) Viral Load</b>	300 to 200,000	copies/mL
<b>Hepatitis B Virus Core Antibody</b>	Negative	POS / NEG
<b>Hepatitis B Virus Core Antibody, IgM</b>	Negative	POS / NEG
<b>Hepatitis B Virus Surface Antibody</b>	This assay is reported semi-quantitatively. Negative means less than 10 mIU/mL (not protective) Positive means greater than 10 mIU/mL (generally regarded as a protective level). Full quantitation is no longer available from the BIDMC lab.	POS/NEG
<b>Hepatitis B Virus Surface Antigen</b>	Negative	POS / NEG
<b>Hepatitis C Virus (HCV) Genotype</b>	N/A	
<b>Hepatitis C Virus (HCV) Viral Load</b>	30 - 40,000,000 IU <30 IU (not detected)	RNA International Units
<b>Hepatitis C Virus Antibody</b>	Negative	POS / NEG
<b>Hepatitis D (Delta) Virus Antibody</b>	Negative	

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<b>Herpes Simplex Virus (HSV) Antigen (DFA)</b>	Negative	
<b>HLA - Narcolepsy Evaluation (DNA)</b>	Positive or Negative	
<b>Homocysteine (Blood)</b>	4.5-12.4	micromol/l
<b>Human Chorionic Gonadotropin</b>	Males and non-pregnant premenopausal females: Less than 5 (<5) For pregnant women, the levels vary according to week of gestation, but are usually less than 200,000. For post-menopausal women the reference range is <8.	mIU/mL
<b>Human Chorionic Gonadotropin Screen (Serum)</b>	Negative	POS/NEG
<b>Human Chorionic Gonadotropin Screen (Urine)</b>	Negative	POS/NEG
<b>Human Immunodeficiency Virus (HIV) Viral Load Ultrasensitive</b>	Plasma: <50 copies/ml (not detected) CSF: <200 copies/ml (not detected)	RNA copies
<b>Human Immunodeficiency Virus 1,2 Antibody</b>	Negative	POS/ NEG
<b>Human Leukocyte Antigen Crossmatch - Final</b>	Compatible.	
<b>Human Leukocyte Antigen Crossmatch - Initial</b>	Compatible.	
<b>Human Leukocyte Antigen Typing, A2</b>	Present or Absent	
<b>Human Leukocyte Antigen Typing, B27</b>	Present or Absent	
<b>Immunofixation Electrophoresis</b>	No monoclonal immunoglobulin present	None
<b>Immunofixation Electrophoresis (Urine)</b>	Negative	None
<b>Immunoglobulin A</b>	Greater than 6 years: 70 - 400	mg/dL
<b>Immunoglobulin E</b>	0 - 180	
<b>Immunoglobulin G (Serum)</b>	Greater than 6 years: 700 - 1600	mg/dL
<b>Immunoglobulin Heavy Chain Rearrangements</b>	Polyclonal smear or no rearrangements seen	
<b>Immunoglobulin M</b>	Greater than 6 years: 40 - 230	mg/dL
<b>Immunoglobulins, Serum</b>	See individual tests	mg/dl
<b>Influenza A/B DFA</b>	Negative	
<b>Inhibitor Screen</b>	Negative	
<b>International Normalized Ratio [INR]</b>	0.9 - 1.1	

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<b>Iron</b>	Male: 45 – 160 Female: 30 - 160	ug/dL
<b>Iron Binding Capacity, Total</b>	260 - 470	ug/dL
<b>Joint Fluid Examination</b>	Negative	
<b>Kleihauer-Betke Stain</b>	No fetal cells seen	
<b>Lactate - STAT</b>	0.5 - 2.0	mmol/L
<b>Lactate Dehydrogenase</b>	Birth to 4 days: 290 – 775 5 to 10 days: 545 – 2000 11 days to 24 months: 180 – 430 Greater than 24 months: 94 - 250	U/L
<b>Legionella Urinary Antigen</b>	Negative	
<b>Leukocyte Alkaline Phosphatase</b>	30 - 130	
<b>Lipase</b>	0 - 60	U/L
<b>Lipid Profile</b>	See individual tests	
<b>Lithium</b>	0.5 - 1.5	mmol/L
<b>Lupus Anticoagulant Screen</b>	Negative	
<b>Luteinizing Hormone</b>	Female: Follicular phase: 2.4 - 12.6 Ovulation: 14.0 - 95.6 Luteal phase: 1.0 - 11.4 Postmenopausal: 7.7 - 58.5  Male: 1.7 - 8.6	mIU/ml
<b>Magnesium (Serum)</b>	Birth to 20 years: 1.5 - 2.2 Greater than 20 years: 1.6 - 2.6	mg/dL
<b>Magnesium (Urine)</b>	A typical 24-hour excretion is 70 - 120 mg.	mg/dL
<b>Marijuana</b>	Negative	
<b>Methadone</b>	Negative	
<b>Methemoglobin</b>	<1.5%	percent
<b>Microsporidium Smear (Trichrome)</b>	None detected	
<b>Monospot (Heterophile Antibody, Infectious Mononucleosis Antibody)</b>	Negative	
<b>Mumps IgG Antibody</b>	Negative	
<b>Mycobacterium Tuberculosis Direct Molecular Amplification (Gen Probe) Test</b>	Negative	
<b>N-Acetyl Procainamide (NAPA)</b>	The sum of procainamide + NAPA should be <30 ug/ml.	ug/ml

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<b>TEST NAME</b>	<b>REFERENCE RANGE</b>	<b>UNITS</b>
<b>Neisseria gonorrhoeae (GC) and Chlamydia trachomatis PCR</b>	Negative	
<b>Neisseria gonorrhoeae PCR</b>	Negative	
<b>NTproBNP</b>	Reference ranges vary with gender and age.  For screening outpatients, the manufacturer recommends maximizing sensitivity (and negative predictive value) by using two thresholds based on age. <125 pg/mL for patients younger than 75 <450 pg/mL for patients age 75 and older  For acute dyspnea in ED patients, at 35% prevalence, study show that NTproBNP values <450 pg/mL have 99% negative predictive value for CHF >1000 pg/mL have 77% positive predictive value for CHF	pg/mL
<b>O&amp;P Exam- Macro Arthropod</b>	None detected	
<b>O&amp;P Exam-Macro Parasite, Worm</b>	None detected	
<b>Opiates (Urine)</b>	Negative	
<b>Osmolality (Serum)</b>	275 - 310	mosm/Kg
<b>Osmolality (Urine)</b>	None available. Call the Laboratory.	mosm/Kg
<b>Osmotic Fragility, Red Blood Cell</b>	Normal	
<b>Ova and Parasites</b>	None detected	
<b>Oxygen Saturation</b>	Varies with pO <sub>2</sub> . Call the Laboratory.	%
<b>Oxygen, Partial Pressure (Blood)</b>	85 - 105 (room air)	mm Hg
<b>Parasite (Blood) Smear</b>	Negative	
<b>Parathyroid Hormone</b>	15 - 65	pg/ml
<b>Parathyroid Hormone (Intraoperative)</b>	10 - 65	pg/ml
<b>Paroxysmal Nocturnal Hemolysis Screen (Sugar Water Test)</b>	Negative	
<b>Partial Thromboplastin Time</b>	NEW RANGE as of 9/28/00: 22.0 - 35.0 Old range (12/98): 22.00 - 32.0	seconds
<b>pH (Blood)</b>	7.35 - 7.45	
<b>Phenobarbital</b>	10.0 - 40.0 (single drug regimen)	ug/ml
<b>Phenytoin</b>	10 - 20 (single drug regimen)	ug/ml
<b>Phenytoin, Free</b>	1.0 - 2.0	ug/ml

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<b>TEST NAME</b>	<b>REFERENCE RANGE</b>	<b>UNITS</b>
<b>Phosphate (Serum)</b>	Birth to 9 days: 4.5 - 9.0 10 days to 24 months: 4.5 - 6.7 2 to 12 years: 4.5 - 5.5 Greater than 12 years: 2.7 - 4.5	mg/dL
<b>Phosphate (Urine)</b>	None available.	mg/dL
<b>Pinworm Examination</b>	Negative for Pinworm	
<b>Platelet Count</b>	150 - 440	10(3)/ul
<b>Platelet Estimate</b>	Normal	
<b>Pneumocystis jirovecii (carinii) Examination</b>	Negative	
<b>Porphobilinogen Screen</b>	Negative	
<b>Postpartum Screen - FMH</b>	Negative	
<b>Potassium (Serum)</b>	3.3 - 5.1	mEq/L
<b>Potassium (Urine)</b>	None available.	mEq/L
<b>Prenatal Type and Screen</b>	Negative	
<b>Procainamide</b>	4.0 - 10.0	ug/ml
<b>Prolactin</b>	Male: 4 – 15 Female: 5 – 23 Note that the reference ranges were updated as of 7/1/06.	ng/ml
<b>Prostate Specific Antigen</b>	0.0 - 4.0	ng/mL
<b>Protein C Evaluation</b>	Functional: 67 - 123% Antigenic: 70-140	%
<b>Protein Electrophoresis (CSF)</b>	No oligoclonal banding seen	none
<b>Protein Electrophoresis (Serum)</b>	No specific abnormalities seen	none
<b>Protein Electrophoresis (Urine)</b>	Negative for Bence-Jones protein	none
<b>Protein S Evaluation</b>	Functional: 51-133; Antigenic: 70-140	%
<b>Protein, Total (Cerebrospinal Fluid)</b>	15 - 45	mg/dL
<b>Protein, Total (Serum)</b>	Birth to 18 years: 4.6 - 7.5 Greater than 18 years: 6.4 - 8.3	g/dL
<b>Protein, Total (Urine)</b>	The 24 hour excretion of protein should not exceed 100 mg (i.e., <100 mg/day). Alternatively, a random urine sample can be analyzed for total protein and creatinine; the normal protein/creatinine ratio is less than 0.2.	mg/dl
<b>Protein/Creatinine Ratio</b>	Up to 0.2	mg protein/mg creatinine
<b>Prothrombin Time</b>	NEW RANGE as of 01/25/06: 10.4 - 13.1 seconds	seconds

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<b>TEST NAME</b>	<b>REFERENCE RANGE</b>	<b>UNITS</b>
<b>QuantiFERON-TB Gold</b>	Positive, negative, indeterminate	
<b>Rapamycin</b>	5.0 - 12.0 (trough)	ng/mL
<b>Rapid Respiratory Viral Antigen-DFA</b>	Negative	
<b>Red Blood Cell Count</b>	Males: 4.6-6.2; Females: 4.2-5.4	10(6) cells/uL
<b>Red Blood Cell Enzyme Deficiency Screen</b>	Negative	
<b>Red Blood Cell Indices</b>	MCV: 82 - 98 fl/cell RDW: 10.5 - 15.5% MCH: 27 - 32 pg/cell MCHC: 31 - 35 g/dL	multiple
<b>Red Blood Cell Morphology Examination</b>	Normal	
<b>Red Blood Cell Typing, A2</b>	Not applicable	
<b>Reptilase Time</b>	15 - 22	seconds
<b>Reticulocyte Count</b>	0.5 - 1.5%	%
<b>Rheumatoid Factor</b>	0 - 14	IU/ML
<b>RPR</b>	Non-reactive	
<b>Rubella IgG Antibody</b>	Negative	
<b>Rubeola IgG Antibody</b>	Negative (positive if vaccinated)	
<b>Salicylate</b>	2 - 25	mg/dL
<b>Sickle Cell Anemia Screen</b>	Negative	
<b>Smear for Bacterial Vaginosis (BV)</b>	Normal genital flora	
<b>Sodium (Serum)</b>	133 - 145	mEq/L
<b>Sodium (Urine)</b>	The urine sodium concentration and total daily excretion vary with hydration and diet.	mEq/L
<b>Stool Blood Screen</b>	Negative	
<b>Syphilis Antibody Confirmation FTA-ABS</b>	Negative	
<b>Syphilis Antibody Confirmation TPPA</b>	Negative	
<b>T subset analysis</b>	CD4: 350 – 1100 CD8: 193 - 685	cells/mm <sup>3</sup>
<b>Tacrolimus</b>	5 - 20, 12-hour trough  (24-hour trough runs 33-50% lower)	ng/mL
<b>Testosterone</b>	Male: 280 – 800 Female: 6 - 82	ng/dL

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<b>TEST NAME</b>	<b>REFERENCE RANGE</b>	<b>UNITS</b>
<b>Testosterone (Free)</b>	Male: Up to 40 years: 8.8 – 27 40 - 60 years: 7.2 – 23 > 60 years: 5.6 – 19  Female: Up to 40 years: 0.0 - 2.6 40 - 60 years: 0.0 - 2.1 > 60 years: 0.0 - 1.6	pg/mL
<b>Theophylline</b>	10 - 20	ug/ml
<b>Thrombin Time</b>	16 - 20	seconds
<b>Thyroglobulin</b>	0-55	ng/mL
<b>Thyroid Stimulating Hormone</b>	0.27 - 4.2	uU/ml
<b>Thyroxine</b>	4.6 - 12.0	ug/dL
<b>Thyroxine, Free</b>	0.93 - 1.7	ng/dL
<b>Tobramycin</b>	Peak: 6.0 - 10.0	ug/ml
<b>Total Granulocyte Count</b>	2000 - 7150	cells/uL
<b>Toxoplasma IgG Antibody</b>	Negative	
<b>Toxoplasma IgG/IgM Antibody Panel</b>	Negative	
<b>Transferrin</b>	200 - 360	mg/dL
<b>Trichomonas Wet Prep</b>	None detected	
<b>Tricyclic Antidepressants</b>	Negative	
<b>Triglycerides (Serum)</b>	Normal: <150 Borderline High: 150-199 High: 200-499 Very high: >499	mg/dL
<b>Triiodothyronine (Serum)</b>	80 - 200	ng/dL
<b>Troponin I (in use before July 1, 2003)</b>	< 0.5	ng/mL
<b>Troponin T (in use from July 1, 2003)</b>	< 0.01	ng/mL
<b>T-Uptake</b>	0.77 - 1.25	none (ratio)
<b>Type and Screen</b>	Negative	
<b>Urea (Serum)</b>	6 - 20	mg/dL
<b>Urea (Urine)</b>	None available.	mg/dl
<b>Uric Acid (Serum)</b>	Male: 3.4 - 7.0 Female: 2.4 - 5.7	mg/dL
<b>Uric Acid (Urine)</b>	Uric acid excretion varies with purine content of the diet. Typical excretion is 250 - 750 mg/day.	mg/dl

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<b>TEST NAME</b>	<b>REFERENCE RANGE</b>	<b>UNITS</b>
<b>Urinalysis by Dipstick Only</b>	Negative for all results except pH: 5.0 - 8.0 urobilinogen: 0.2 – 1 Specific Gravity: 1.001 - 1.035	
<b>Urinalysis, Complete, including Reflex Microscopic Sediment</b>	Dipstick analytes: Negative except pH (5.0 - 8.0) Urobilinogen 0.2 – 1 Specific Gravity: 1.001 - 1.035 Microscopic elements: RBC: 0 - 2/high power field; WBC: 0 - 5/high power field	
<b>Valproic Acid</b>	50 - 100 (single drug regimen)	ug/ml
<b>Vancomycin</b>	10 - 20 (therapeutic trough)	ug/ml
<b>Varicella-Zoster IgG Antibody</b>	Negative	
<b>Varicella-Zoster Virus (VZV) Antigen (DFA)</b>	Negative	
<b>VDRL, Cerebrospinal Fluid</b>	Negative	
<b>Viscosity (Serum)</b>	1.4 - 1.8	
<b>Vitamin B12</b>	240 - 900	pg/ml
<b>Vitamin C</b>	0.20 - 1.90	mg/dL
<b>von Willebrand Ristocetin Cofactor (Activity)</b>	50 - 200%	
<b>von Willebrand's Antigen</b>	60 - 158	%
<b>von Willebrand's Disease Screen</b>	See individual tests	
<b>White Blood Cell Count, Blood</b>	0-1 years: 5.1 - 18.0 1-3 years: 5.5 - 17.5 4-7 years: 5.0 - 17.0 8-13 years : 4.5 - 13.5 Adults: 4.0 - 11.0	K/uL
<b>White Blood Cell Count, Differential</b>	Adults: Neutrophils: 50 - 70%; Bands: 0 - 5%; Lymphocytes: 18 - 42%; Monocytes: 2 - 11%; Eosinophils: 1 - 4%; Basophils: 0 - 2%	