

MGH Laboratory Handbook

Online Lab Handbook:
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Reference Intervals - MGH Clinical Laboratories

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<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
1-25-OH Vitamin D		Core lab (Sendouts)
1-3-Beta D glucan assay		Core lab (Sendouts)
17-OH Progesterone		Core lab (Sendouts)
25-OH Vitamin D	Desired: > 32 ng/mL	Core
3-Methylhistidine, urine	Age matched reference range and interpretation provided	Neurochemistry
5-Nucleotidase		Core lab (Sendouts)
A1AT deficiency profile		Core lab (Sendouts)
ABO/Rh Type		Blood Transfusion Service
Acetaminophen	Negative	Core
Acetone	Negative	Core
Acetylaspartate, urine	Interpretation provided	Neurochemistry
ACTH	6-76 pg/ml	Core
Acylcarnitines (plasma)		Core lab (Sendouts)
ADAMTS13 activity/inhibitor		Core lab (Sendouts)
Adenosine deaminase (fluid--NOT CSF)		Core lab (Sendouts)
Adenovirus antibody	Reported with results	Microbiology
Adenovirus antigen	Negative	Microbiology
Adenylosuccinase deficiency, screen	Interpretation provided	Neurochemistry
AFP (non-maternal specimens)		Core
Alanine, CSF	Interpretation and age-matched reference ranges provided.	Neurochemistry

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Alanine, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
Albumin	3.1-4.3 g/dl	Chelsea Healthcenter
Albumin	3.3-5.0 g/dl	Core
Albumin (fluid--NOT CSF)		Core
Alcohols (ethanol, MeOH, isoprop)	Negative	Core
Aldolase		Core lab (Sendouts)
Aldosterone		Core lab (Sendouts)
Alk Phos	Adults: male: 45-115 U/L; Female: 30-100 U/L; <20 yrs.: 15-350 U/L	Core
Alkaline phosphatase	Adults: male: 45-115 U/L female: 30-100 U/L <20 yrs.: 15-350 U/L	Chelsea Healthcenter
Alpha-1-antitrypsin 1	Adult normal range: 76-189 mg/dl	Immunology
Alpha-2-antiplasmin	80-130% activity	Special Coagulation
ALT (SGPT)	Male: 10-55 U/L; Female: 7-30 U/L	Core
Aluminum		Core lab (Sendouts)
Amikacin (peak)		Core lab (Sendouts)
Amikacin (random)		Core lab (Sendouts)
Amikacin (trough)		Core lab (Sendouts)
Amino acid analysis, quantitative, amniotic fluid	Reference ranges provided with results.	Neurochemistry
Amino acid analysis, quantitative, CSF	Reported with results	Neurochemistry
Amino acid analysis, quantitative, fluid misc		Neurochemistry
Amino acid analysis, quantitative, plasma	Age matched; reported with results	Neurochemistry
Amino acid analysis, quantitative, urine	Age matched; reported with results	Neurochemistry
Amino acid analysis, quantitative, vitreous fluid	Reference ranges provided with results.	Neurochemistry
Amino acid screen, urine	Interpretation provided	Neurochemistry
Aminolevulinic acid (urine)		Core lab (Sendouts)
Ammonia	12-48 umol/L	Core
Amylase	3-100 U/L	Chelsea Healthcenter
Amylase (fluid--NOT CSF)		Core
Amylase (plasma)	3-100 U/L	Core
Amylase (urine)	3-460 U/L	Core

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
ANCA		Immunopathology
Angiotensin converting enzyme		Core lab (Sendouts)
Angiotensin converting enzyme (CSF)		Core lab (Sendouts)
Antibody screen		Blood Transfusion Service
Anti-cardiolipin antibody	IgG: 0-15 GPL; IgM: 0-15 MPL	Special Coagulation
Anti-CCP	Negative <20 units (Normal); Weak Positive 20-39 units; Moderate Positive 40-59 units; Strong Positive >60 units;	Immunology
Antidiuretic hormone (ADH)		Core lab (Sendouts)
Anti-double stranded DNA		Immunology
Anti-GBM antibody		Immunopathology
Anti-histone antibody		Core lab (Sendouts)
Anti-islet cell antibody		Core lab (Sendouts)
Anti-Jo-1 antibody		Immunology
Anti-liver kidney microsomal		Core lab (Sendouts)
Anti-mitochondrial antibody	Negative at 1:20	Immunology
Anti-nuclear antibody (ANA)	Negative at 1:40 and 1:160	Immunology
Anti-parietal cell antibody	Negative at 1:20	Immunology
Antiphospholipid antibody panel		Special Coagulation
Anti-Ro and Anti-La antibodies		Immunology
Anti-Scl-70 antibody		Immunology
Anti-smooth muscle antibody	Negative at 1:20	Immunology
Antithrombin III	> 6 months: 80-130%	Special Coagulation
Anti-thyroid antibodies (Anti-TPO)		Core
Anti-tissue transglutaminase IgA		Core lab (Sendouts)
Anti-U1RNP and anti-Smith		Immunology
Anti-Xa (for Fondaparinux)		Special Coagulation
Anti-Xa (for Fragmin)		Special Coagulation
Anti-Xa (for Lovenox)		Special Coagulation
Anti-Xa (for UF Heparin)		Special Coagulation
APCR (Factor V Leiden)	Normal > 2.0	Special Coagulation

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Arginase activity	Reference ranges and interpretation provided	Neurochemistry
Arginine, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
Argininosuccinate lyase activity	Reference ranges and interpretation provided	Neurochemistry
Argininosuccinate, amniotic fluid	Normally not detectable	Neurochemistry
Argininosuccinate, plasma	Normally not detectable	Neurochemistry
Arsenic (blood)		Core lab (Sendouts)
Arterial blood gas		Acute Care Lab
AST (SGOT)	Adults: Male: 10-40 U/L; Female: 9-32 U/L	Core
Babesia (thick and thin smear)		Microbiology
Babesia serology		Microbiology
Bartonella antibody		Microbiology
Basic Metabolic Panel	See individual tests	Chelsea Healthcenter
Basic metabolic panel		Core
Basic metabolic panel 7		Core
Basic serum tox panel		Core
Bcr/abl gene rearrangement PCR		Core lab (Sendouts)
Bence Jones protein (serum)	No Bence Jones protein detected in serum	Immunology
Bence Jones protein (urine)	No Bence Jones protein detected in 50x concentrated urine	Immunology
Benzodiazepines (serum)		Core
Beta 2 microglobulin		Core lab (Sendouts)
Beta hydroxybutyrate		Core lab (Sendouts)
Beta-2-glycoprotein I antibodies		Core lab (Sendouts)
Bicarbonate (random urine)		Core
Bili direct	0-0.4 mg/dl	Core
Bili total	Total: 0-1.0 mg/dl	Core
Bilirubin (direct and total)	Adult: Direct: 0-0.4 mg/dl; Total: 0-1.0 mg/dl	Core
Bilirubin (fluid--NOT CSF)		Core
Bilirubin, direct	0-0.4 mg/dl	Chelsea Healthcenter
Bilirubin, total	0-1.0 mg/dl	Chelsea Healthcenter
Biopsy for immunoperoxidase staining		Anatomic Pathology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
BK virus PCR (urine)		Core lab (Sendouts)
Blood culture/sensitivity		Microbiology
Blood gas glucose		Acute Care Lab
Blood gas hemoglobin		Acute Care Lab
Blood gas potassium		Acute Care Lab
Blood gas sodium		Acute Care Lab
Body cavity fluids, cytology	Negative	Cytopathology
Bone biopsy		Anatomic Pathology
Bone marrow biopsy/aspirate		Anatomic Pathology
Bone marrow iron stain		Core
Bone marrow MPO stain		Core
Bone marrow NSE stain		Core
Bone marrow transplant stem cell monitoring	Reported with results	Flow Cytometry
Bone marrow Wright stain		Core
Bordetella pertussis antibody		Microbiology
Brain biopsy		Anatomic Pathology
Breast biopsy		Anatomic Pathology
Breast cyst aspiration	Negative	Cytopathology
Breast, smear of discharge	Negative	Cytopathology
Bronchial brushings cytology	Negative	Cytopathology
Bronchial wash/lavage cytology	Negative	Cytopathology
Brucella antibody	< 1:160	Microbiology
Buffy coat preparation		Core
Buffy coats (immunopathology)	Interpretation with results	Immunopathology
BUN	Adults: 8-25 mg/dl	Core
BUN/Creatinine		Core
C- reactive protein	For inflammation assessment reference range is < 8.0 mg/L. For cardiac risk assessment: Quintile 1, Lowest risk: <0.7 mg/L; Quintile 2, Low risk: 0.7-1.1 mg/L; Quintile 3, Moderate risk: 1.2-1.9 mg/L; Quintile 4, High risk: 2.0-3.8 mg/L; Quint	Core
C.difficile toxin assay		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
C1 inhibitor (antigen)	12.4-24 mg/dl	Immunology
C1 inhibitor (functional)		Core lab (Sendouts)
C3	Adult range: 86-184 mg/dl	Immunology
C4	Adult range: 20-58 mg/dl	Immunology
Ca/Mg/PO4		Core
CA-125	<35 U/ml	Core
CA-15-3	<30 U/ml	Core
CA-19-9		Core lab (Sendouts)
Cadmium		Core lab (Sendouts)
Calcitonin		Core lab (Sendouts)
Calcium	8.5-10.5 mg/dl	Core
Calcium (24 hour urine)	Up to 300 mg/24 hours	Core
Calcium (random urine)		Core
Calcium, serum	8.5-10.5 mg/dl	Chelsea Healthcenter
Canavans disease		Core lab (Sendouts)
Capillary blood gas		Acute Care Lab
Carbamazepine (Tegretol)	Adult: 4-12 mcg/ml; <18 yrs: 8-12 mcg/ml	Core
Carbon dioxide	23-29 mmol/L	Chelsea Healthcenter
Carbon dioxide (bicarb)	Adult: 23-31.9 mmol/L; Newborn: (<2 weeks): 19-22 mmol/L; 2 weeks-1 year: 22-27 mmol/L	Core
Cardiac valves		Anatomic Pathology
Carnitine (free and total serum)		Core lab (Sendouts)
CBC	Reported with results	Chelsea Healthcenter
CBC	Reported with results	Core
CBC with Diff	Reported with results	Core
CEA	< 3.4 ng/ml	Core
Celiac disease panel		Core lab (Sendouts)
Cell count (CSF)	Colorless, clear; RBC: None; WBC: 0-5/cumm	Core
Cell count (fluid--NOT CSF)		Core
Cell surface markers for hematologic malignancy	Interpretation included with results.	Flow Cytometry
Ceruloplasmin	27-50 mg/dl	Immunology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Chimerism analysis		Histocompatibility
Chlamydia culture		Microbiology
Chlamydia nucleic acid detection		Microbiology
Chlamydia pneumoniae antibody		Microbiology
Chlamydia psittaci antibody		Microbiology
Chlamydia trachomatis DFA		Microbiology
Chloride	100 - 108 mmol/L	Chelsea Healthcenter
Chloride	Adult: 100-108 mmol/L; < 1 year: 98-106 mmol/L	Core
Chloride (random urine)		Core
Chloride (stool)		Core
Cholesterol	Desirable: < 200 mg/dl Borderline-high: 200-239 mg/dl High: > 240 mg/dl	Chelsea Healthcenter
Cholesterol (fluid--NOT CSF)		Core
Cholesterol (total)	Desirable: < 200 mg/dl; Borderline-high: 200-239 mg/dl; High: > or = 240 mg/dl	Core
Chromium (blood)		Core lab (Sendouts)
Chromogenic factor X	60-140%	Special Coagulation
Chromogranin A		Core lab (Sendouts)
Chromosomal microarray		Core lab (Sendouts)
Chromosome 1p/19q allele loss (anaplastic oligod		Neurogenetics
Chromosome analysis (karyotype) - blood lympho	46 XX; 46 XY Call lab if questions, (617)-732-7981	Cytogenetics
Chromosome analysis (karyotype) - bone marrow,	46 XX; 46 XY Call lab with questions, (617)-732-7981	Cytogenetics
Citrulline, plasma	Age matched reference range and interpretation provided	Neurochemistry
CK isoenzymes (CKMB+CPK)	CK-MB: <7.0 ng/ml; Relative index: < or = 3.5%	Core
Clozapine (quantitative, serum)		Core lab (Sendouts)
CMV antibody (IgG)		Microbiology
CMV antibody (IgM)		Core lab (Sendouts)
CMV antigenemia assay (blood)		Microbiology
CMV PCR (blood)		Core lab (Sendouts)
CMV PCR (CSF)		Core lab (Sendouts)

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
CMV shell vial culture		Microbiology
Cobalt		Core lab (Sendouts)
Cold agglutinin screen	normal: <1:16; borderline: 1:16-1:64; abnormal: >1:64	Blood Transfusion Service
Compatibility test, adults		Blood Transfusion Service
Compatibility test, neonates		Blood Transfusion Service
Comprehensive Metabolic Panel	See individual tests	Chelsea Healthcenter
Comprehensive metabolic panel		Core
Copper (liver tissue)		Core lab (Sendouts)
Copper (serum)		Core lab (Sendouts)
Copper (urine)		Core lab (Sendouts)
Cortisol	5-25 ug/dl (8AM-12PM); <10 ug/dl (8PM-8AM); 5-15 ug/dl (12PM-8PM); <5.0 ug/dl (post dexamethasone)	Core
Cox panel		Core
Coxiella burnetii antibody		Microbiology
C-peptide		Core lab (Sendouts)
CPK (creatine kinase)	Male: 60-400 U/L; Female: 40-150 U/L	Core
Creatine phosphokinase, (CPK, CK)	Male: 60-400 U/L Female: 40-150 U/L	Chelsea Healthcenter
Creatinine	0.6-1.5 mg/dl	Chelsea Healthcenter
Creatinine	Adults: 0.6-1.5 mg/dl; < 10 yrs: 0.3-1.0 mg/dl	Core
Creatinine (24 hour urine)	15-25 mg/kg body weight/24 hours	Core
Creatinine (fluid--NOT CSF)		Core
Creatinine (random urine)		Core
Cryoprotein analysis		Immunology
Cryptococcal antigen		Microbiology
CSF culture/sensitivity		Microbiology
CSF cytology	Negative	Cytopathology
CSF for oligoclonal bands		Immunology
CSF gram stain		Microbiology
Cyclosporin level		Core
Cystathionine synthase, G307S/I278T mutations	Interpretation provided	Neurochemistry

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Cystathionine, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
Cystic fibrosis mutation screen		Core lab (Sendouts)
Cysticercus antibody		Microbiology
Cystine amino acid panel, urine	Interpretation and age-matched reference ranges provided.	Neurochemistry
Cystine and homocystine screen, urine	Interpretation provided	Neurochemistry
Cystine, quantitative, urine	Interpretation and age-matched reference ranges provided.	Neurochemistry
Cytogenetics (peripheral blood)		Cytogenetics
Cytopathology		Anatomic Pathology
D-dimer	< 500 ng/ml	Core
Dengue fever (1-4) antibody		Microbiology
DHEA (serum)		Core lab (Sendouts)
DHEA-S (serum)		Core lab (Sendouts)
Differential count, peripheral blood	Reported with results	Chelsea Healthcenter
Digoxin level		Core
Dilantin (free) level		Core lab (Sendouts)
Dilantin level	5.0-20.0 mcg/ml	Core
Direct antiglobulin (Coombs) test		Blood Transfusion Service
Direct LDL (reference lab test)		Core lab (Sendouts)
DNA ploidy	Interpretation with results	Flow Cytometry
DNPH Test panel, urine	Interpretation provided	Neurochemistry
Doxepin	Reported with results.	Core
Drugs of abuse (urine)		Core
Dystonia - Dopa Responsive Dystonia		Neurogenetics
Dystonia - DYT1		Neurogenetics
Dystonia - Myoclonus Dystonia		Neurogenetics
Dystonia - Rapid Onset Dystonia		Neurogenetics
EBV DNA quantitation by PCR		Core lab (Sendouts)
EBV serology (sendout)		Microbiology
Echinococcus antibody		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
ED Kiosk (Cardiac Markers)		ED Kiosk
ED Kiosk (D-Dimer)		ED Kiosk
ED Kiosk (Drugs of Abuse)		ED Kiosk
ED Kiosk (Rapid Influenza A/B)		ED Kiosk
ED Kiosk (Rapid Strep)		ED Kiosk
ED Kiosk (RSV Antigen)		ED Kiosk
ED Kiosk (Urinalysis)		ED Kiosk
ED Kiosk (Urine HCG)		ED Kiosk
Ehrlichia antibody		Microbiology
Ehrlichia PCR (blood)		Core lab (Sendouts)
Elastase (stool)		Core lab (Sendouts)
Electrolytes		Core
Electrolytes panel (Na, K, Cl, CO2)	See individual tests	Chelsea Healthcenter
Electron microscopy		Anatomic Pathology
Encephalitis antibody		Microbiology
Endomysial IgA antibody		Core lab (Sendouts)
Enterovirus RNA (CSF)		Core lab (Sendouts)
Erythrocyte sedimentation rate	Male: 1-13 mm/hr Female: 1-20 mm/hr	Chelsea Healthcenter
Erythropoietin (serum)		Core lab (Sendouts)
Estradiol	Males: < 50 pg/ml; Menstruating women: Follicular phase: < 20-145 pg/ml; Ovulatory peak: 112-443 pg/ml; Luteal phase: < 20-241 pg/ml; Postmenopausal: < 59 pg/ml	Core
Ethylene glycol		Core lab (Sendouts)
Fabry disease		Neurogenetics
Factor B	17-42 mg/dl	Immunology
Factor II	> 8 months: 60-140% Activity	Special Coagulation
Factor inhibitor assay	< 0.5 BU (Bethesda Units)	Special Coagulation
Factor V	> 8 months: 60-140% Activity	Special Coagulation
Factor VII	> 8 months: 60-140% Activity	Special Coagulation
Factor VIII	> 8 months: 50-200% Activity	Special Coagulation
Factor X	> 8 months: 60-140% Activity	Special Coagulation

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Factor XI	> 8 months: 60-140% Activity	Special Coagulation
Factor XII	> 8 months: 60-140% Activity	Special Coagulation
Factor XIII Screen	No deficiency detected	Special Coagulation
Familial Amyotrophic Lateral Sclerosis (FALS)		Neurogenetics
Ferritin	Male: 30-300 ng/ml; Female: 10-200 ng/ml	Core
Fetal fibronectin	Negative	Acute Care Lab
Fetal Rh and cell screen		Blood Transfusion Service
Fibrinogen	150-400 mg/dl	Core
Fibroblast culture, skin biopsy		Neurochemistry
Filarial antibody		Microbiology
Fine needle aspirations	Negative	Cytopathology
Fine needle biopsies (aspirations) with cores	Negative	Cytopathology
Fluid culture/sensi (NOT CSF)		Microbiology
Fluid gram stain (NOT CSF)		Microbiology
Folate	Deficient:< 2.2 ng/ml; Borderline: 2.2-3.0 ng/ml; Normal: 3.1-17.5 ng/ml; Excess: > 17.5 ng/ml	Core
Fractionated alkaline phosphatase		Core lab (Sendouts)
Fragile X DNA analysis		Core lab (Sendouts)
Free light chains (serum)	Free kappa: 3.3-19.4 mg/L; Free lambda: 5.7-26.3 mg/L Normal K/L Ratio is 0.3-1.7.	Immunology
Free light chains (urine)	Urine free kappa: 0.4-15.1 mg/L; Urine free lambda: 0.8-10.1 mg/L. Reference interval for K/L ratio is 0.5-4.0.	Immunology
Free T4	0.9-1.8 ng/dL	Core
FSH	Reported with results	Core
Full serum toxicology		Core
Fumarase activity	Interpretation and age-matched reference ranges provided.	Neurochemistry
Fumarate hydratase mutation analysis	Interpretation provided	Neurochemistry
Fungal culture (blood)		Microbiology
Fungal serology panel		Microbiology
Fungal wet prep	Negative	Chelsea Healthcenter
Fungal wet prep		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
G6PD (Glucose-6-phosphate dehydrogenase)		Core lab (Sendouts)
GAD65 antibody assay		Core lab (Sendouts)
Galactomannan		Core lab (Sendouts)
Gastric occult blood with pH		Acute Care Lab
Gastrin		Core lab (Sendouts)
Gastroesophageal brush cytology	Negative	Cytopathology
Gastroesophageal wash cytology	Negative	Cytopathology
Gentamicin (peak)		Core
Gentamicin (random)		Core
Gentamicin (trough)		Core
GGT (gamma glutamyl transferase)	Male: 8-61 U/L; Female: 5-36 U/L	Core
Gliadin IgG and IgA antibodies		Core lab (Sendouts)
Glucagon		Core lab (Sendouts)
Glucose	70-110 mg/dl	Chelsea Healthcenter
Glucose	70-110 mg/dl	Core
Glucose (CSF)		Core
Glucose (fluid--NOT CSF)		Core
Glucose (urine, random)	< 0.05 g%	Core
Glutamine, CSF		Neurochemistry
Glycine, CSF	Reported with results	Neurochemistry
Glycine, plasma	Age matched; ratio of blood glycine/CSF glycine , >35	Neurochemistry
Gonococcal culture		Microbiology
Gonococcal nucleic acid detection		Microbiology
Group B strep culture (GBS)		Microbiology
GU culture/sensitivity		Microbiology
GU gram stain		Microbiology
Gyrate atrophy test - plasma ornithine	Age matched reference range and interpretation provided	Neurochemistry

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
H pylori IgG antibody	H. pylori immune ratio: 0.0-0.9: Denotes a negative test for the presence of active H. pylori infection; H. pylori immune ratio: 0.91–1.09: Denotes a positive antibody response to H. pylori. This is clinically equivocal in that this may or may n	Immunology
H pylori stool antigen		Core lab (Sendouts)
Hantavirus antibody		Microbiology
Haptoglobin	16-199 mg/dl	Immunology
HBV core antibody (IgM only)		Core lab (Sendouts)
HBV core antibody (total)		Core lab (Sendouts)
HBV DNA (quantitative)	<60 HBV DNA IU/mL	Core
HBV e antigen and antibody		Core lab (Sendouts)
HBV surface antibody (qualitative)		Core
HBV surface antibody (quantitative)		Core lab (Sendouts)
HBV surface antigen		Core
HCG (quantitative blood)	< 6 IU/L negative; 6-15 IU/L borderline; >15 IU/L positive	Core
HCG (tumor marker, sendout)		Core lab (Sendouts)
HCV antibody (qualitative)		Core
HCV genotyping		Core
HCV viral RNA (qualitative)	Negative	Core
HCV viral RNA (quantitative)	< 600 HCV IU/ml	Core
HDL	35 - 100 mg/dl; High > or = 60 mg/dl	Core
Hematocrit (manual)	Reported with results	Core
Hematocrit, manual	Male (adult) 41-53% Female (adult) 36-46%	Revere Healthcenter
Hematocrit, manual	Male (adult) 41-53% Female (adult) 36-46%	Chelsea Healthcenter
Hemochromatosis DNA testing		Core
Hemoglobin A1c	3.8-6.4%	Core
Hemoglobin electrophoresis		Core lab (Sendouts)
Hep A virus antibody (IgM and total)		Core lab (Sendouts)
Heparin PF4 antibody (HIT)		Special Coagulation
Hepatic Panel	See individual tests	Chelsea Healthcenter

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Herpes simplex viral culture		Microbiology
Heterophile antibody	Negative	Chelsea Healthcenter
Heterophile antibody	Negative	Revere Healthcenter
Heterophile antibody (monospot)		Microbiology
HHH Syndrome mutation analysis	Interpretation provided	Neurochemistry
HHV-6 PCR (blood)		Core lab (Sendouts)
High density lipoprotein cholesterol	35-100 mg/dl	Chelsea Healthcenter
HIV genotyping		Core lab (Sendouts)
HIV viral load (standard)	< 400 HIV RNA copies/ml	Microbiology
HIV viral load (ultrasensitive)	< 50 HIV RNA copies/ml	Microbiology
HIV-1/2 antibody		Core
HLA antibody identification, solid phase panel Cla	Not applicable	Histocompatibility
HLA antibody identification, solid phase panel Cla	Not applicable	Histocompatibility
HLA antibody screen, mixed pools	Not applicable	Histocompatibility
HLA molecular typing, A locus		Histocompatibility
HLA molecular typing, B locus	Not applicable	Histocompatibility
HLA molecular typing, C locus	Not applicable	Histocompatibility
HLA molecular typing, single locus or allele	Not applicable	Histocompatibility
HLA-A,B serologic typing	Not applicable	Histocompatibility
HLA-ABC low resolution molecular typing	Not applicable	Histocompatibility
HLA-B27 antigen		Histocompatibility
HLA-DR DQ serologic typing	Not applicable	Histocompatibility
HLA-DR or DQ high resolution molecular typing	Not applicable	Histocompatibility
Homocitrulline, urine	Interpretation provided	Neurochemistry
Homocysteine		Core
HPV typing, high risk	Negative	Cytopathology
HSV nucleic acid amplification (CSF)		Microbiology
HSV types 1 and 2 antibodies (IgG and IgM)		Core lab (Sendouts)
HSV viral antigen detection		Microbiology
HTLV-I/II antibodies		Core lab (Sendouts)

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Human chorionic gonadotropin, serum	Negative; <10 mIU/ml	Chelsea Healthcenter
Human chorionic gonadotropin, serum	Negative; <10 mIU/ml	Revere Healthcenter
Human chorionic gonadotropin, urine	Negative; <25 mIU/ml	Chelsea Healthcenter
Human chorionic gonadotropin, urine	Negative; <25 mIU/ml	Revere Healthcenter
Human growth hormone	2-6 ng/ml (resting adult)	Core
Huntington disease		Neurogenetics
Hypercoagulation panel		Special Coagulation
Hyperkalemic Periodic Paralysis		Neurogenetics
Hypersensitivity pneumonitis screen	Precipitating antibodies to hypersensitivity pneumonitis antigens: None detected.	Immunology
Hypokalemic Periodic Paralysis		Neurogenetics
Hypokalemic Periodic Paralysis type 2		Neurogenetics
IgE (total)	0 - 100 IU/ml	Immunology
IGF Binding Protein-3		Core lab (Sendouts)
IGF-1		Core
IgG subclasses		Core lab (Sendouts)
Immunodeficiency lymphocyte subsets	Interpretation with results	Flow Cytometry
Immunofixation (serum)		Immunology
Immunoglobulin A	Adult normal range: 60-309 mg/dl	Immunology
Immunoglobulin G	Adult normal range: 614-1295 mg/dl	Immunology
Immunoglobulin M	Adult normal range: 53-334 mg/dl	Immunology
Indirect immunofluorescence for detection of Pem	Negative	Immunopathology
Influenza A & B antigen		Microbiology
Influenza A and B antibodies		Microbiology
Insulin		Core lab (Sendouts)
Intestinal biopsy		Anatomic Pathology
Intrinsic factor blocking abs		Core lab (Sendouts)
Ionized calcium	1.14-1.30 mmol/L	Acute Care Lab
Iron/TIBC	Iron Male: 45-160 mcg/dl; Iron Female: 30-160 mcg/dl; TIBC: 228-428 mcg/dl	Core
JAK2 mutation analysis (V617F)		Diagnostic Molecular Path
JC virus PCR (CSF)		Core lab (Sendouts)

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Joint fluid crystals		Immunology
Kleihauer-Betke		Core lab (Sendouts)
Lactic acid (lactate)	0.5-2.2 mmol/L	Core
Lactoferrin (stool)		Core lab (Sendouts)
Lamotrigine level		Core
LCM virus antibody		Microbiology
LDH	110-210 U/L	Core
LDH (CSF)		Core
LDH (fluid--NOT CSF)		Core
Lead (blood, adult)		Core lab (Sendouts)
Lead (blood, pediatric)		Core lab (Sendouts)
Legionella culture		Microbiology
Legionella urinary antigen		Microbiology
Leptin		Core lab (Sendouts)
Leptospirosis antibody		Microbiology
Leukocyte alk phos (LAP) score		Core lab (Sendouts)
Levetiracetam (Keppra)		Core lab (Sendouts)
LFTs (hepatic panel)		Core
LH	Reported with results	Core
Lipase	13-60 U/L	Chelsea Healthcenter
Lipase	13-60 U/L	Core
Lipase (fluid--NOT CSF)		Core
Lipid Panel	See individual tests	Chelsea Healthcenter
Lipid panel		Core
Lipoprotein (a)		Core lab (Sendouts)
Lithium level	0.5-1.5 mmol/L	Core
Liver biopsy		Anatomic Pathology
Low dose ristocetin platelet agg		Special Coagulation
Lung biopsy		Anatomic Pathology
Lupus anticoagulant		Special Coagulation

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Lyme antibody		Microbiology
Lymph node biopsy		Anatomic Pathology
Lymphocytotoxic crossmatch B cell		Histocompatibility
Lymphocytotoxic crossmatch T cell	Not applicable	Histocompatibility
Magnesium	1.4-2.0 mEq/L	Chelsea Healthcenter
Magnesium	1.4-2.0 mEq/L	Core
Magnesium (random urine)		Core
Malaria (thick and thin smear)		Microbiology
Manganese (blood)		Core lab (Sendouts)
Maternal quad screen		Core lab (Sendouts)
MCAD deficiency, DNA test for G-985 mutation	Interpretation provided	Neurochemistry
Measles antibody (IgG)		Microbiology
Meconium drug screen		Core lab (Sendouts)
Mercury (blood)		Core lab (Sendouts)
Methionine (plasma)		Core
Methionine, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
Methotrexate level		Core
Methylmalonic acid (serum)		Core lab (Sendouts)
Methylmalonic acid screen (urine)	Interpretation provided	Neurochemistry
Microalbumin (urine)		Core
Microsatellite genotyping	Not applicable	Histocompatibility
MRSA nasal swab		Microbiology
MSUD amino acid panel, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
MTHFR DNA testing		Core
Mumps antibody (IgM)		Microbiology
Mumps immunity		Microbiology
Muscle biopsy		Anatomic Pathology
Myasthenia gravis ab panel		Core lab (Sendouts)
Mycobacterial (TB/AFB) cx bld		Microbiology
Mycobacterial (TB/AFB) smear		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Mycophenolate (CellCept)		Core lab (Sendouts)
Mycoplasma culture		Microbiology
Mycoplasma PCR		Microbiology
Myocardial biopsy		Anatomic Pathology
Myoglobin (urine)		Core lab (Sendouts)
NaCl split skin assay by Indirect immunofluoresce	Negative	Immunopathology
Nerve biopsy		Anatomic Pathology
Neurofibromatosis type 2		Neurogenetics
Neuronal Ceroid Lipofuscinosis - Infantile		Neurogenetics
Neuronal Ceroid Lipofuscinosis - Juvenile		Neurogenetics
Neuronal Ceroid Lipofuscinosis - Late Infantile		Neurogenetics
Neuronal Ceroid Lipofuscinosis - Progressive Epil		Neurogenetics
Neuronal Ceroid Lipofuscinosis - Variant Late Infa		Neurogenetics
Neuropathy - Hereditary Sensory and Autonomic		Neurogenetics
Neuropathy - Hereditary Sensory Neuropathy		Neurogenetics
Norrie disease		Neurogenetics
N-telopeptides (urine)		Core lab (Sendouts)
NT-proBNP	< 50 yrs: 0-450 pg/ml; 50-75 yrs: 0-900 pg/ml; > 75 yrs: 0-1500 pg/ml	Core
Organic acid analysis by GCMS, semi-quantitativ	Interpretation provided	Neurochemistry
Organic acids (urine)		Core lab (Sendouts)
Ornithine disorders amino acid panel, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
Ornithine incorporation assay	Interpretation provided	Neurochemistry
Ornithine, plasma	Age matched reference range and interpretation provided	Neurochemistry
Orotic acid, urine	< 45 nmols/mg creatinine	Neurochemistry
Osmolality (serum)	Adult: 280-296 mOsm/kg; Pedi (<1yr): 275-295 mOsm/kg	Core
Osmolality (stool)		Core
Osmolality (urine, random)		Core
Other site culture/sensitivity		Microbiology
Other site gram stain		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Pain management profile (VPAIN)		Core
Pancreatic enzymes (duodenal fluid)		Core lab (Sendouts)
Papanicolaou (Pap) test	Bethesda system-2001 No evidence of intra-epithelial lesion or malignancy	Cytopathology
PAPP-A		Core lab (Sendouts)
Paragonimus antibody		Microbiology
Parainfluenza antibody		Microbiology
Parainfluenza antigen detection		Microbiology
Parasite identification		Microbiology
Parvovirus B19 antibodies		Core lab (Sendouts)
Paternity and identity test		Neurogenetics
Pertussis culture		Microbiology
pH (fluid--NOT CSF)		Core
Phenobarbital level	15-50 mcg/ml	Core
Phenylalanine, (PKU), blood	Age matched; reported with results	Neurochemistry
Phosphorus	Adults: 2.6-4.5 mg/dl 0-9.9 days: 4.5-9.0 mg/dl 10d-1.9yr: 4.5-6.7 mg/dl 2y-11.9yr: 4.5-5.5 mg/dl 12y-17.9yr: 3.0-4.5 mg/dl	Chelsea Healthcenter
Phosphorus	Adults: 2.6-4.5 mg/dl 0-9.9 days: 4.5-9.0 mg/dl 10d-1.9yr: 4.5-6.7 mg/dl 2y-11.9yr: 4.5-5.5 mg/dl 12y-17.9yr: 3.0-4.5 mg/dl	Core
Phosphorus (random urine)		Core
Pinworm examination	No parasites found.	Microbiology
PKU carrier testing	Interpretation and age-matched reference ranges provided.	Neurochemistry
Plasma amino acids (quantitative)		Core
Plasma fractionated porphyrins		Core lab (Sendouts)
Plasma free catecholamines		Core lab (Sendouts)
Plasma free hemoglobin		Core lab (Sendouts)
Plasma metanephrines		Core lab (Sendouts)
Plasminogen (functional assay)	80-130% Activity	Special Coagulation
Plasminogen Activator Inhibitor-1		Core lab (Sendouts)

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Platelet aggregation		Special Coagulation
Pneumococcus IgG Ab (23 serotypes)		Core lab (Sendouts)
Pneumocystis (PCP) exam		Microbiology
Porphobilinogen (urine)		Core lab (Sendouts)
Porphyrins (urine fractionated)		Core lab (Sendouts)
Potassium	Adult: 3.4-4.8 mmol/L; <1 month: 4.0-5.6 mmol/L	Core
Potassium (random urine)		Core
Potassium (stool)		Core
Potassium, serum	3.4-4.8 mmol/L	Chelsea Healthcenter
Prealbumin		Core lab (Sendouts)
Prekallikrein screen		Special Coagulation
Procainamide and NAPA		Core lab (Sendouts)
Progesterone		Core
Proinsulin		Core lab (Sendouts)
Prolactin		Core
Protein C	> 8 months: 70-140%	Special Coagulation
Protein S	> 8 months: 70-140%	Special Coagulation
Prothrombin gene mutation (G20210A)		Special Coagulation
Protozoa (specific) exam		Microbiology
PSA (total)	Males: <0.2 to 4.0 ng/ml	Core
PSA, free and total		Core lab (Sendouts)
PT mixing study		Special Coagulation
PTH	10-60 pg/ml	Core
PTH related protein		Core lab (Sendouts)
PT-INR	PT 10.3-13.2 sec (age 6 months to adult); PT-INR values for Warfarin Anti-Coag Therapy: Standard Intensity 2.0-3.0; High Intensity 2.5-3.5	Core
PTT	7 months-adult: 21.0-33.0 seconds.	Core
PTT mixing study		Special Coagulation
Pyruvate		Core lab (Sendouts)
Quantiferon gold		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Quinidine		Core lab (Sendouts)
RAST (radioallergosorbent) testing		Core lab (Sendouts)
Rectal biopsy for Hirschsprung's disease		Anatomic Pathology
Reducing substances (stool)		Core lab (Sendouts)
Reducing substances (urine)	Interpretation provided	Neurochemistry
Renal biopsy		Anatomic Pathology
Renal Panel	See individual tests	Chelsea Healthcenter
Renin		Core lab (Sendouts)
Reptilase time	16-24 sec	Special Coagulation
Respiratory culture/sensitivity		Microbiology
Respiratory gram stain		Microbiology
Reticulocyte count	0.5-2.5%	Core
Rheumatoid factor	< 30 IU/ml	Immunology
Rift valley fever antibody		Microbiology
RMSF serology		Microbiology
Rotavirus antigen detection (stool)		Microbiology
Routine throat culture (Beta strep)		Microbiology
RSV antigen detection		Microbiology
Rubella diagnostic serology (IgM)		Microbiology
Rubella immunity status	Latex agglutination: Positive	Microbiology
Salicylates		Core
Schistosoma antibody		Microbiology
Sed rate (ESR)	Male: 0-11 mm/hr; Female: 0-17 mm/hr	Core
Selenium		Core lab (Sendouts)
Serologic test for syphilis, blood (RPR)	Non-Reactive	Chelsea Healthcenter
Sex hormone binding globulin	Adult Male: 11-71 nmol/L; Adult Female (non pregnant): 12-139 nmol/L	Core
Sickle cell screening		Core lab (Sendouts)
Sirolimus level		Core
Skin biopsy		Anatomic Pathology
Sodium	135-145 mmol/L	Core

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Sodium (random urine)		Core
Sodium (stool)		Core
Sodium, serum	135-145 mmol/L	Chelsea Healthcenter
Special slide box		Core
SPEP with immunoglobulins	IgG, IgA, IgM, see individual normal ranges; SPEP: normal pattern	Immunology
Sporothrix antibody		Microbiology
Sputum cytology	Negative	Cytopathology
Sputum for eosinophils		Core
State metabolic screen		Core
Stone analysis		Core lab (Sendouts)
Stool alpha-1 antitrypsin		Core lab (Sendouts)
Stool culture/sensitivity		Microbiology
Stool fat (quantitative)		Core lab (Sendouts)
Stool fat/fiber exam		Core lab (Sendouts)
Stool gram stain		Microbiology
Stool guaiac for occult blood	Negative for occult blood	Revere Healthcenter
Stool ova and parasites		Microbiology
Streptococcal antibodies profile		Core lab (Sendouts)
Strongyloides antibody		Microbiology
Succinylpurine screen	Interpretation provided	Neurochemistry
Sugar screen (lactose, galactose, fructose), urine	Interpretation provided	Neurochemistry
Sulfite oxidase mutation analysis	Interpretation provided	Neurochemistry
Suspected transfusion reaction workup	Results phoned to floor, written report to follow in CAS/Notes.	Blood Transfusion Service
Syphilis serology for blood (RPR)		Microbiology
Syphilis serology for CSF (VDRL)		Microbiology
T cell subsets (CD4/CD8 counts)	Reported with results	Flow Cytometry
T cell subsets (CD4/CD8 counts)		Core
T cell subsets (therapeutic antibody monitoring for	Interpretation with results	Flow Cytometry
T3 (total)	60-181 ng/dl	Core
T4 (total)	4.5-10.9 ug/dl	Core

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Tacrolimus level		Core
Tau protein		Immunology
Tay Sachs enzymes and DNA analysis		Core lab (Sendouts)
Testicular biopsy		Anatomic Pathology
Testosterone	Males: 270-1070 ng/dl; Females: < 86 ng/dl	Core
Testosterone (free)		Core lab (Sendouts)
Tetanus antitoxoid antibody		Core lab (Sendouts)
Thallium		Core lab (Sendouts)
Theophylline level		Core lab (Sendouts)
Thiopurine methyltransferase (RBC)		Core lab (Sendouts)
Thiosulfate, urine		Neurochemistry
Throat culture (full cx/sensi)		Microbiology
Thrombin time	16-24 sec	Special Coagulation
Thyroglobulin (with antibody screen)	Thyroglobulin: 4-40 ng/ml; Thyroglobulin antibody < 40 IU/ml;	Core
Thyroid screening panel		Core
Thyroid stimulating immunoglobulin		Core lab (Sendouts)
Thyrotropin binding inhib immunoglobulin		Core lab (Sendouts)
Tissue biopsy for immunofluorescence		Anatomic Pathology
Tobramycin (peak)		Core
Tobramycin (random)		Core
Tobramycin (trough)		Core
Topiramate (Topamax)		Core lab (Sendouts)
Total complement	63-145 U/ml (reference range for serum only)	Immunology
Total protein	6.0-8.0 g/dl	Chelsea Healthcenter
Total protein	Adults: 6.0-8.3 g/dl	Core
Total protein (24 hour urine)	< 165 mg/24 hr	Core
Total protein (CSF)		Core
Total protein (fluid--NOT CSF)		Core
Total protein (random urine)	< 135 mg/L	Core
Toxacara antibody		Microbiology

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Toxoplasma gondii IgG (serum)		Microbiology
Toxoplasma gondii IgM (serum)		Microbiology
Transaminase, SGOT, AST	Adults Male: 10-40 U/L Female: 9-32 U/L	Chelsea Healthcenter
Transaminase, SGPT, ALT	Male: 10-55 U/L Female: 7-30 U/L	Chelsea Healthcenter
Transferrin		Core lab (Sendouts)
Treponema pallidum particle agglutination		Microbiology
Trichinella antibody		Microbiology
Trichomonas vaginalis antigen test		Microbiology
Trichomonas vaginalis culture		Microbiology
Triglyceride	40-150 mg/dl	Chelsea Healthcenter
Triglycerides	< 150 mg/dl normal; 150-199 mg/dl borderline high; 200-499 mg/dl high; > or = 500 mg/dl very high	Core
Triglycerides (fluid--NOT CSF)		Core
Trileptal (Oxcarbazepine)		Core lab (Sendouts)
Troponin T	<0.03 ng/mL: Negative; 0.03-0.09 ng/mL: Suggestive of myocardial necrosis; >.09 ng/mL: Indicative of myocardial necrosis.	Core
Trypanosoma cruzi antibody		Microbiology
Tryptase		Core lab (Sendouts)
Tryptophan, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
TSH	TSH: 0.4-5.0 uU/ml	Core
Tuberous sclerosis - known mutations only		Neurogenetics
Tularemia agglutination test		Microbiology
Type and screen		Blood Transfusion Service
U/A (urinalysis)	pH: 5.0-9.0; SPECIFIC GRAVITY: 1.001-1.035; CHEMICAL SCREENS: negative	Core
Urea cycle disorders amino acid panel, plasma	Interpretation and age-matched reference ranges provided.	Neurochemistry
Urea cycle disorders amino acid panel, urine	Interpretation and age-matched reference ranges provided.	Neurochemistry
Urea nitrogen (24 hour urine)	6-17 g/24 hours	Core
Urea nitrogen (BUN)	8-25 mg/dl	Chelsea Healthcenter

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Urea nitrogen (fluid--NOT CSF)		Core
Urea nitrogen (random urine)		Core
Uric acid	Males: 3.6-8.5 mg/dl Females: 2.3-6.6 mg/dl	Chelsea Healthcenter
Uric acid	Males: 3.6-8.5 mg/dl; Females: 2.3-6.6 mg/dl	Core
Urinalysis	Chem screen: Negative pH: 4.5 - 8.0 SpGr: 1.005 - 1.030	Chelsea Healthcenter
Urinalysis	Chem Screen: Negative pH: 4.5-8.0 SpGr: 1.005 - 1.030	Revere Healthcenter
Urine 5-HIAA		Core lab (Sendouts)
Urine culture/sensitivity		Microbiology
Urine cytology	Negative	Cytopathology
Urine eosinophils		Core
Urine fractionated catecholamines		Core lab (Sendouts)
Urine fractionated metanephrines		Core lab (Sendouts)
Urine free cortisol	17-47 mcg//24 hours	Core
Urine gram stain		Microbiology
Urine HCG		Core lab (Sendouts)
Urine heavy metals (24 hour)		Core lab (Sendouts)
Urine hemosiderin		Core
Urine histamine (24 h collection)		Core lab (Sendouts)
Urine histoplasma antigen		Core lab (Sendouts)
Urine homovanillic acid		Core lab (Sendouts)
Urine nicotine and metabolites		Core lab (Sendouts)
Urine sediment	Reported with results	Chelsea Healthcenter
Urine sediment	Reported with results	Revere Healthcenter
Urine vanillylmandelic acid		Core lab (Sendouts)
Vaginal smear for maturation index		Cytopathology
Valproic acid level	50-100 mcg/ml	Core
Vancomycin (peak)		Core
Vancomycin (random)		Core

<i>Test name</i>	<i>Reference Interval</i>	<i>Laboratory</i>
Vancomycin (trough)		Core
Varicella antibody (IgG)		Microbiology
Varicella-Zoster antigen detection		Microbiology
Venous blood gas		Acute Care Lab
Viral culture		Microbiology
Viral respiratory panel		Microbiology
Viscosity (serum)	1.4-1.8 relative viscosity units	Immunology
Vitamin A		Core lab (Sendouts)
Vitamin B1 (thiamine)		Core lab (Sendouts)
Vitamin B12	Deficient: < 175 pg/ml; Borderline:175-250 pg/ml; Normal: > 250 pg/ml	Core
Vitamin B2 (riboflavin)		Core lab (Sendouts)
Vitamin B6		Core lab (Sendouts)
Vitamin C		Core lab (Sendouts)
Vitamin E		Core lab (Sendouts)
Vitamin K		Core lab (Sendouts)
von Willebrand panel	Reported with results. Varies by blood type.	Special Coagulation
Voriconazole (blood)		Core lab (Sendouts)
VRE rectal swab		Microbiology
VZV PCR (CSF)		Core lab (Sendouts)
Whole blood glucose	70-110 mg/dl	Revere Healthcenter
Widal agglutination test		Microbiology
Wound culture/sensitivity		Microbiology
Wound gram stain		Microbiology
Zinc		Core lab (Sendouts)