

Always refer to the laboratory report for appropriate reference ranges at the time of analysis.

This document lists the test reference ranges that were established for the analysis methodologies used only by Nova Scotia Health Central Zone (Central Zone) Department of Pathology and Laboratory Medicine facilities.

Anatomical Pathology Blood Tests					
Name of Test	Specimen Type	Units	Low	High	Critical
Anti-Cardiac Muscle Antibody	Serum (SST)	Qualitative	N/A	N/A	N/A
Anti-Skeletal Muscle Antibody	Serum (SST)	Qualitative	N/A	N/A	N/A
Anti-Pemphigoid Antibody	Serum (SST)	Qualitative	N/A	N/A	N/A
Anti-Pancreatic Islet Cell Antibody	Serum (SST)	Qualitative	N/A	N/A	N/A
Anti-Smooth Muscle Antibody	Serum (SST)	Qualitative	N/A	N/A	N/A
Anti-Liver Kidney Microsomal Antibody	Serum (SST)	Qualitative	N/A	N/A	N/A

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
Acetaminophen	M/F	>0min	µmol/L			>350
	Interpretive Data: Therapeutic range: 66-199 µmol/L Toxic level: Refer to Rumack Matthew nomogram. Acetaminophen results can be falsely low for patients undergoing treatment of N-acetylcysteine (NAC).					
Adrenocorticotrophic hormone (ACTH)	M/F	>0min	pmol/L	2.3	10.1	
	Interpretive Data: Adrenocorticotrophic Hormone (ACTH) reference ranges are based on samples collected prior to 10 AM.					
Albumin	M/F	0-1yr	g/L	25	46	
		>1yr		35	50	
Alcohol	M/F	>0min	mmol/L	None Detected		>54
				Interpretive Data: The method is intended for clinical purposes only. Medical-legal specimens should be analyzed by gas chromatographic method for confirmation of results.		
Alkaline Phosphatase (ALP)	M/F	0-15d	U/L	90	273	
	M/F	15d-1yr		134	518	
	M/F	1-10yr		156	369	
	M/F	10-13yr		141	460	
	M	13-15yr		127	517	
	F	13-15yr		62	280	
	M	15-17yr		89	365	
	F	15-17yr		54	128	
	M	17-19yr		59	164	
	F	17-19yr		48	95	
	M/F	>19yr		38	150	
Alanine Aminotransferase (ALT)	M/F	0-1yr	U/L	0	32	
	M/F	1-19yr		0	24	
	M	>19yr		0	54	
	F	>19yr		0	44	
Alpha-1-Antitrypsin	M/F	>0 min	g/L	1.00	1.90	

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
Alpha Fetoprotein (AFP)	M/F	0min - 3mth	µg/L	Not established		
		3mth - 6mth		4	275	
		6mth - 1yr		3	148	
		1-3yr		3	21	
		>3yr		1	8	
Ammonia	M/F	>0min	µmol/L	18	72	
Amylase	M/F	0-15d	U/L	3	10	
		15d-3mth		2	22	
		3mth-1yr		3	50	
		1-19yr		20	101	
		>19yr		20	125	
Interpretive Data: Amylase is less sensitive and specific in acute pancreatitis than lipase. Amylase results may be elevated in patients with macroamylase. The most common macroamylase is amylase complexed with an immunoglobulin. This elevated amylase is not diagnostic for pancreatitis. By utilizing plasma lipase, macroamylase may be determined.						
Androstenedione	M	>0min	nmol/L	1.4	10.8	
	F			1.4	14.3	
Interpretive Data: Note: Stated reference range is for adults.						
Angiotensin Converting Enzyme (ACE)	M/F	>0min	U/L	8	52	
	Interpretive Data: Reference values are for adults. The reference intervals for pediatric patients may be up to 50% higher than that of adults. Plasma Angiotensin Converting Enzyme (ACE) is significantly reduced in patients on ACE inhibitors (eg. Vasotec and Captopril).					
Anion Gap	M/F	>0min		5	15	
Anti-Thyroid Peroxidase Antibody (Anti-TPO)	M/F	>0min	IU/mL	<6		
Apolipoprotein B (APO B)	M	0-1yr	g/L	0.16	1.24	
		1-12yr		0.48	1.25	
		12-60yr		0.49	1.73	
		>60yr		0.54	1.63	
	F	0-1yr		0.17	1.20	
		1-12yr		0.51	1.26	
		12-60yr		0.53	1.82	
		>60yr		0.64	1.82	
Aspartate Aminotransferase (AST)	M/F	0-15d	U/L	32	162	
		15d-1yr		20	67	
		>1yr		5	45	
Beta 2 Microglobulin	M	>0min	nmol/L	<194.0		
	F			<201.0		
Interpretive Data: Expected values 95 th percentile. If required, the conversion factor from International System of Measurement (SI) to Conventional Units: nmol/L divided by 0.08475=ng/mL ng/mL divided by 1000 =mg/L						
Bicarbonate	M/F	0-15d	mmol/L	5	20	<10 or >40
	M/F	15d-1yr		10	24	
	M/F	1-5yr		14	24	

Clinical Chemistry Blood Tests							
Name of Test	Gender	Age	Units	Low	High	Critical	
	M/F	5-15yr		17	26		
	M	15-19yr		18	28		
	F	15-19yr		17	26		
	M/F	>19yr		22	31		
Bilirubin, direct	M/F	0-15d	µmol/L	0.0	12.0		
		>15d		0.0	8.5		
Bilirubin, indirect	M/F	0-19yr	µmol/L	Not established			
		>19yr		0.0	17.9		
Bilirubin, total	M/F	Newborn	µmol/L	Age of Newborn	Premature	Full-term Newborn	
				< 24 hours	< 136.8	< 102.6	
				< 48 hours	< 205.2	< 171.0	
				2- 5d	< 256.5	< 205.2	
				5-7d	< 256.5	< 171.0	
				7-15d	Not established		
		15d - 18yr		0.0	14.9		
>18yr	0.0	20.4					
C-peptide	M/F	0min-1wk	pmol/L	Not established			
		>1wk		260	1730		
Calcium	M/F	0-1yr	mmol/L	2.13	2.74	<1.70 or >3.25	
		1-19yr		2.29	2.63		
		>19yr		2.20	2.60		
		Interpretive Data: Reference range based on samples from ambulatory patients. Recumbent: 0.10 mmol/L lower. Total Calcium (TCa) can be adjusted higher by 0.2 mmol/L with decreased albumin by 10 g/L (baseline albumin = 40 g/L). The reliability of adjustment for albumin deteriorates in patients with very low or high albumin concentrations. TCa without adjustment is sufficient in most suspected disorders of calcium homeostasis. However, when the albumin level and/or pH are extremely abnormal, request for ionized calcium should be considered.					
Calcium, Ionized	M/F	0-1yr	mmol/L	Not established		<0.80 or >1.60	
		1-18yr		1.20	1.38		
		>18yr		1.16	1.32		
testing includes: pH	M/F	>0min		7.35	7.45	<7.20 or >7.60	
Calcium, Ionized (7.4)	M/F	<1yr	mmol/L	Not established		<0.80 or >1.60	
		1-18yr		1.20	1.38		
		>18yr		1.16	1.32		
Interpretive Data: Ionized Calcium (7.4) is the Ionized Calcium level corrected with respect to pH = 7.4; the result is helpful when the reported pH is not consistent with the patient's condition.							
Calcitonin	M	>0min	pg/mL	<11			
	F			<7			
Carbamazepine	M/F	>0min	µmol/L			>75	
				Interpretive Data: Therapeutic range: 17-51 umol/L			

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
	Toxic concentration: >64 umol/L Routine determination of the Carbamazepine-10, 11-epoxide, an active metabolite, is not clinically indicated in most patients. However, if its level is considered imperative to clinical decision making, the test should be specifically ordered.					
Carboxyhemoglobin (COHB)	M/F	>0min	%			>20.0
	Interpretive Data: <1.5 (non-smokers) <10.0 (smokers) >20.0 (Toxic) >50.0 (Lethal)					
CA 125	M/F	>0min	U/mL	0.0	35.0	
CA 15-3	M/F	>0min	U/mL	0.0	31.3	
	Interpretive Data: Ca 15-3 test is not sufficiently sensitive or specific to be used for cancer screening. It may be useful for follow up of known breast cancer.					
CA 19-9	M/F	>0min	U/mL	0.0	37.0	
	Interpretive Data: Ca19-9 test is not sufficiently sensitive or specific to be used for cancer screening; modest elevations can be seen in some benign conditions. It may be useful for follow-up of known cancers. However, individuals who are Lewis A/B negative are non-secretors of Ca19-9. If monitoring with Ca19-9, a change in value may be considered to be significant if it is >30% of the baseline.					
Carcinoembryonic Antigen (CEA)	M/F	>0min	µg/L			
	Interpretive Data: Non Smokers: less than or equal to 5.0 µg/L This test is not sufficiently sensitive or specific for cancer screening.					
Ceruloplasmin	M/F	>0min	mg/L	200	600	
Chloride	M/F	>1yr	mmol/L	100	110	
Cholesterol	M/F	>0min	mmol/L			
	For interpretation of levels or ranges, please see: http://dyslipidemia.onlinecjc.ca/Content/PDFs/2012Guidelines.pdf					
Cholinesterase	M/F	0-15d	U/L	4421	9722	
	M/F	15d-1yr		5182	16027	
	M/F	1-19yr		7769	15206	
	M	>19yr		4500	12669	
	F			3000	10928	
Cortisol	M/F	>0min	nmol/L			
	Interpretive Data: Until 9:30 am: 120-550 nmol/L pm: 79-478 nmol/L If Addison's disease is clinically suspected, an AM cortisol result of <240nmol/L cannot exclude this.					
Cortisol (DST)	M/F	>0min	nmol/L			Not established
	Interpretive Data: Note: This result was following a Dexamethasone Suppression Test.					
Creatine Kinase (CK)	M	>0min	U/L	30	300	
	F			30	200	
	Interpretive Data: Exercise can significantly increase plasma Creatine Kinase (CK) activity. CK activity in the black population is approximately 2 times that of the white/Asian population. Statin treatment can cause elevation of CK activity. Reference ranges are for adults. Reference ranges have not been established for children.					
Creatinine	M/F	0-15d	µmol/L	29	82	>400
	M/F	15d-2yr		9	32	
	M/F	2-5yr		18	38	
	M/F	5-12yr		27	54	
	M/F	12-15yr		40	72	

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
	M	15-19yr		55	96	
	F	15-19yr		43	74	
	M	>19yr		64	104	
	F	>19yr		49	90	
C-Reactive Protein CRP	M/F	>0min	mg/L	0.00	7.99	
Interpretive Data: >8mg/L is consistent with acute phase response to inflammation Cardiovascular Risk Assessment: Low Risk: <1 mg/l Average Risk: 1-3 mg/L High Risk: >3 mg/L						
Digoxin	M/F	>0min	nmol/L			>3.00
Interpretive Data: Therapeutic range: 1.00-2.60 nmol/L Levels >5.10 nmol/L may be potentially life-threatening. Toxicity is enhanced by hypokalemia, hypomagnesemia, hypocalcemia or renal dysfunction. Digoxin results will be affected for patients undergoing treatment with digibind (antibody fragment therapy)						
Dehydroepiandrosterone sulfate (DHEAS)	M	6mth-1yr	µmol/L	0.20	4.80	
		1-6yr		0.10	3.20	
		6-9yr		0.10	4.10	
		9-13yr		0.90	7.30	
		13-16yr		1.50	12.50	
		16-19yr		3.40	18.20	
		19-35yr		4.60	16.10	
		35-55yr		3.70	13.10	
		55-65yr		1.30	9.80	
		65-70yr		6.20	7.70	
	>70yr	6.20		7.70		
	F	6mth-1yr		0.20	4.80	
		1-6yr		0.10	3.20	
		6-9yr		0.10	4.10	
		9-13yr		0.90	7.30	
		13-16yr		1.50	12.50	
		16-19yr		4.00	15.50	
		19-45yr		2.00	13.90	
		45-55yr		1.50	7.70	
		55-65yr		0.80	4.90	
65-70yr		0.90	2.10			
>70yr	0.90	2.10				
Interpretive Data: <u>Ages 5-14 years:</u> Reference range is based on children who are pre-pubertal. If the child has achieved puberty, values may be higher by at least twice the upper limit stated on this report. <u>Ages 15-69 years:</u> Reference range is based on the assumption that the individual has achieved puberty. <u>Ages > 69 years:</u> Please note that stated ranges are for those aged up to 70 years; ranges have not been established for older individuals. <u>Patient age and/or gender not documented:</u> When patient age and/or gender are not documented we are unable to provide a reference range due to the specificity of the reference range related to age and gender.						
Erythropoietin	M/F	>0min	IU/L	4.3	29.0	
Interpretive Data: If the patient is receiving recombinant erythropoietin, analysis may not be valid and reference ranges are not applicable						

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
hormone (FSH)	F	>0min		Follicular: 3.0-9.0		
				Midcycle: 2.6-16.7		
				Luteal: 1.4-5.5		
				Postmenopausal: 27.0-133.0		
Interpretive Data: Reference Ranges based on post-puberty						
Gamma-Glutamyl Transferase (GGT)	M/F	0-15d	U/L	23	219	
		15d-1yr		8	127	
		1-11yr		6	16	
		11-19yr		7	21	
		>19yr		0	49	
Interpretive Data: GGT is inducible by drugs such as phenytoin and phenobarbital, and therefore elevations should not be considered indicative of liver disease until drug use is ruled out. Elevations are also seen after ingestion of alcoholic beverages.						
Gastrin	M/F	>0min	ng/L	13	115	
				Interpretive Data: Reference range for FASTING samples only Note: High circulating biotin levels may reduce results by more than 10% of the true value. Patients must discontinue any biotin supplement at least 3 days prior to testing.		
Gentamicin	M/F	>0min	mg/L			Pre: >3.00
						Post: >12.00
						Random: >3.00
Interpretive Data: Divided Daily Dose: PRE Level: <2 mg/L POST Level: 5-8 mg/L (3-5 for UTI or when used for synergy for gram positive organisms) Once Daily Therapy: 6 hour PRE: <1mg/L						
Glucose, AC	M/F	>0min	mmol/L	3.8	6.0	<2.5 or ≤16yr >15.0 or >16yr >25.0
				Interpretive Data: AC = Ante Cibum (Specimen was drawn before eating.) For full diagnostic workup of diabetes mellitus and achieving glycemic control in patients with known diabetes, please refer to the most recent version of the Diabetes Canada Clinical Practice Guidelines.		
Glucose, PC	M/F	>0min	mmol/L	No established range		<2.5 or ≤16yr >15.0 or >16yr >25.0
				Interpretive Data: PC = Post Cibum (Specimen was drawn 2 hours after eating.) For full diagnostic workup of diabetes mellitus and achieving glycemic control in patients with known diabetes, please refer to the most recent version of the Diabetes Canada Clinical Practice Guidelines.		
Glucose, Random	M/F	>0min	mmol/L	3.8	7.8	<2.5 or ≤16yr >15.0 or >16yr >25.0
				Interpretive Data: For full diagnostic workup of diabetes mellitus and achieving glycemic control in patients with known diabetes, please refer to the most recent version of the Diabetes Canada Clinical Practice Guidelines.		
Growth Hormone	M	>0min	µg/L	<3.00		

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
(GH)	F			<8.00		
	<p>Interpretive Data: Note that random single Growth Hormone (hGH) levels are inadequate, as levels in normal and diseased populations overlap. Therefore, hGH suppression and stimulation tests are needed to evaluate conditions of hGH excess and deficiency. Also stated reference levels do not reflect variations in secretion of hGH from the pituitary gland, that are often episodic and pulsatile.</p>					
HDL Cholesterol	M/F	>0min	mmol/L			
	<p>Interpretive Data: For interpretation of levels or ranges, please see: http://dyslipidemia.onlinecjc.ca/Content/PDFs/2012Guidelines.pdf</p>					
Human Chorionic Gonadotropin, Beta (quantitative)	M/F	>0min	IU/L			
	<p>Interpretive Data: Reference ranges: Men and Pre-Menopausal Non-Pregnant Women: <5 IU/L Post-Menopausal Women: <8 IU/L</p> <p>Note: Suggest repeat testing in 72 hours for borderline high (5 - 25 IU/L) beta-Human Chorionic Gonadotropin (beta hCG) results. Interpret with caution in patients who are on high dose biotin, since falsely depressed results may be seen, proportional to the level of circulating biotin.</p>					
IgE	M/F	0-6yr	IU/mL	0	110	
		6-15yr		0	360	
		>15yr		0	180	
	<p>Interpretive Data: In ADULTS only; the likelihood of predicting allergy in susceptible individuals is high when IgE level is above 200 IU/mL</p>					
Insulin	M/F	0-1wk	pmol/L	Not established		
		>1wk		<120		
	<p>Interpretive Data: Expected range for FASTING samples only</p>					
Insulin-Like Growth Factor-1 (IGF-1) (also known as Somatomedin-C)	M	0-4yr	µg/L	<189		
		4-7yr		47	231	
		7-10yr		55	222	
		10-12yr		95	315	
		12-14yr		95	460	
		14-16yr		211	512	
		16-19yr		57	426	
		19-22yr		105	346	
		22-25yr		107	367	
		25-30yr		88	537	
		30-35yr		41	246	
		35-40yr		57	241	
		40-45yr		43	209	
		45-50yr		74	196	
	50-55yr	55	248			
	55-60yr	36	200			
	60-65yr	51	187			
	65-70yr	37	219			
	70-80yr	24	200			
	80-90yr	17	323			
	>90yr	Not established				
F	0-4yr	µg/L	<272			
	4-7yr		55	248		
	7-10yr		80	233		
	10-12yr		96	545		
	12-14yr		147	549		

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
		14-16yr		208	444	
		16-19yr		176	429	
		19-22yr		105	346	
		22-25yr		107	367	
		25-30yr		88	537	
		30-35yr		41	246	
		35-40yr		57	241	
		40-45yr		43	209	
		45-50yr		74	196	
		50-55yr		55	248	
		55-60yr		36	200	
		60-65yr		51	187	
		65-70yr		37	219	
		70-80yr		24	200	
		80-90yr		17	323	
	>90yr	Not established				
Interpretive Data: Patient age and/or gender not documented: When patient age and/or gender are not documented we are unable to provide a reference range due to the specificity of the reference range related to age and gender.						
Iron	M/F	0d-14yr	µmol/L	2.80	22.90	
	M	14-19yr		5.50	30.00	
	F	14-19yr		3.50	29.00	
	M	>19yr		9.00	31.30	
	F	>19yr		7.00	30.40	
Interpretive Data: The circulated iron level can show a 30% diurnal variation, with a peak early in the morning. If patient is not fasting or on iron supplements, this may lead to an erroneously high iron result hence incorrect TIBC and % Saturation.						
Lactate	M/F	>0min	mmol/L	0.50	2.20	>4.00
Lactate Dehydrogenase (LDH)	M/F	0-15d	U/L	309	1222	
	M/F	15d-1yr		163	452	
	M/F	1-10yr		192	321	
	M	10-15yr		170	283	
	F	10-15yr		157	272	
	M/F	15-19yr		130	250	
	M/F	>19yr		120	230	
Interpretive Data: LDH should only be used for follow up of known hematological malignancies or for the investigation of suspected hemolytic anemia.						
LDL Cholesterol	M/F	>0min	mmol/L			
	Interpretive Data: For interpretation of levels or ranges, please see: http://dyslipidemia.onlinecjc.ca/Content/PDFs/2012Guidelines.pdf					
Lipase	M/F	0-19yr	U/L	4	39	
		>19yr		8	78	
Lithium	M/F	>0min	mmol/L			>2.20
Interpretive Data: Therapeutic range: 0.60-1.20 mmol/L (trough concentration) Toxic concentration: >1.50 mmol/L						
Luteinizing Hormone (LH)	M	>0min	IU/L	0.6	12.0	
	F			Follicular: 1.8-11.8		
				Midcycle: 7.6-90.0		
				Luteal: 0.6-14.0		
			Postmenopausal (No HR): 10.0-62.0			
Interpretive Data: Reference Ranges based on post-puberty						

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
Magnesium	M/F	0-15d	mmol/L	0.82	1.62	<0.40 and >3.00
		15d-1yr		0.81	1.27	
		1-19yr		0.86	1.17	
		>19yr		0.66	1.07	
Methemoglobin	M/F	>0min	%	0.0	1.5	>30.0
Methotrexate (MTX)	M/F	>0min	µmol/L			
<p>Interpretive Data: Therapeutic range: protocol dependent Suggested toxic levels after methotrexate treatment: >10.00 µmol/L after 24 hours >1.00 µmol/L after 48 hours >0.10 µmol/L after 72 hours Specimens from patients who have received glucarpidase (carboxypeptidase G2) as a high dose methotrexate rescue therapy should not be tested for the Methotrexate level. Methotrexate should be tested after the patient stops the glucarpidase therapy for at least five to seven days.</p>						
Non-HDL Cholesterol	M/F	>0min	mmol/L	Optimal: <2.60		
NT-proBNP	M/F	>0min	ng/L	<300		
<p>Interpretive Data: Values <= 125 ng/L are normal in ambulatory care N-terminal pro Brain Natriuretic Peptide values < 300 ng/L have a 99% negative predictive value for excluding acute congestive heart failure (CHF) CHF is likely in patients presenting with acute dyspnea at the following cut-off values (in the absence of renal failure): Age <50 years and N-terminal pro Brain Natriuretic Peptide >450 ng/L Age 50 – 75 years and N-terminal pro Brain Natriuretic Peptide >900 ng/L Age >75 years and N-terminal pro Brain Natriuretic Peptide >1800 ng/L CHF is possible for values in between the above cut-offs, but other diagnoses should to be considered.</p>						
Osmolality	M/F	>0min	mmol/Kg	283	292	<250 or >325
Parathyroid Hormone, Intact (iPTH)	M/F	0-6d	pmol/L	Not established		
		6d-1yr		0.7	9.4	
		1-9yr		1.7	6.7	
		9-17yr		2.3	9.3	
		17-19yr		1.7	6.4	
		>19yr		1.9	8.7	
<p>Interpretive Data: It is recommended to measure iPTH on a morning fasting sample</p>						
Phenobarbital	M/F	>0min	µmol/L			>250
<p>Interpretive Data: Therapeutic concentration: Infants and children: 65-130 µmol/L Adults: 86-172 µmol/L Toxic concentration: >= 259 µmol/L</p>						
Phenytoin	M/F	>0min	µmol/L			>100
<p>Interpretive Data: Therapeutic response: 40-80 µmol/L Toxic: >119 µmol/L Reference range presupposes a normal plasma albumin. For abnormal albumin, the phenytoin result should be adjusted when comparing to the reference range as follows:</p>						

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
<p>Corrected Phenytoin = measured Phenytoin/(0.9(Albumin/40)+0.1)</p> <p>The calculation does not pertain to all patients' conditions. Albumin testing should be required with phenytoin by physicians if the calculation needs to be done.</p>						
Phosphorus	M/F	0-15d	mmol/L	1.80	3.40	<0.40 and >3.50
	M/F	15d-1yr		1.54	2.72	
	M/F	1-5yr		1.38	2.19	
	M/F	5-13yr		1.33	1.92	
	M	13-16yr		1.14	1.99	
	F	13-16yr		1.02	1.79	
	M/F	16-19yr		0.95	1.62	
	M/F	>19yr		0.74	1.52	
<p>Interpretive Data: Phosphorus has a very strong biphasic circadian rhythm. Values are lowest in the morning, peak first in the late afternoon and peak again in the late evening. The second peak is quite elevated, and results may be outside the reference range.</p>						
Potassium	M/F	>0min	mmol/L	3.4	5.0	<2.8 or >6.2
	<p>Interpretive Data: Reference values have not been established for patients that are less than 1 year of age. Note: Potassium (K+) reference ranges have been adjusted to accommodate for the possibility of slight leakage of K+ from red blood cells prior to sample separation.</p>					
Prealbumin	M/F	0-15d	mg/L	20	120	
		15d-1yr		50	240	
		1-13yr		120	260	
	M	13-19yr		180	350	
	M	>19yr		180	450	
	F	13-19yr		160	330	
	F	>19yr		160	380	
<p>Interpretive Data: Prealbumin is only used for monitoring the response to nutritional support in the acutely ill patient.</p>						
Progesterone	M/F	>0min	nmol/L			
	<p>Interpretive Data: Reference Ranges based on post-puberty Male: 0.6 - 2.0 nmol/L Female: Follicular: 0.4 - 2.0 nmol/L Luteal: 3.8 - 51.0 nmol/L Postmenopausal: 0.4 - 2.0 nmol/L First trimester: 9.0 - 468.0 nmol/L Second trimester: 71.6 - 303.0 nmol/L Third trimester: 88.0 - 771.0 nmol/L Day 21 of cycle: minimal level consistent with ovulation = 20.0 nmol/L : level >30.0 nmol/L indicates ovulation is very likely</p>					
Prolactin	M/F	0-4d	µg/L	Not established		
		4-30d		12.6	212.8	
		30d-1yr		6.3	113.7	
		1-19yr		4.2	23.0	
	M	>19yr		3.5	19.4	
	F	>19yr		5.2	27.0	
<p>Interpretive Data: Female reference range is for non-pregnant</p>						
Prostatic Specific Antigen (PSA)	M/F	>0min	µg/L	0.00	3.00	
	<p>Interpretive Data: Based on the 2019 Canadian Urological Association guidelines, values greater than 3.00 ug/L may require closer serial testing or Urology referral depending on the clinical context. Changes in PSA over time should be taken into consideration, and clinical actions based on a solitary PSA reading are</p>					

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
						discouraged. Reference values are invalid in patients with an active or prior diagnosis of prostate cancer or in the setting of acute bacterial prostatitis.
Prostatic Specific Antigen, Free (FPSA)	M/F	>0min	µg/L			
	Interpretive Data: Free PSA is not informative when PSA is <4 µg/L (indicating that prostate cancer is unlikely) or when PSA is >20 µg/L (indicating that prostate cancer is likely). Also see interpretation of the fPSA/PSA ratio.					
PSA Free Ratio	M/F	>0min				
	Interpretive Data: Prostate cancer can be excluded with reasonable (90%) confidence when the PSA is >4 and <20 µg/L and the Free PSA/PSA ratio is > 0.20.					
Protein, Total	M/F	>0min	g/L	64	83	
	Interpretive Data: Values may be slightly lower in recumbent patients					
Salicylate	M/F	>0min	mmol/L			>2.2
	Interpretive Data: Analgesia: 0.2-1.1 mmol/L Anti-inflammatory: 0.7-2.2 mmol/L Toxic (adult): >3.6 mmol/L Toxic (children): >2.2 mmol/L					
Saturation (Iron)	M/F	>0min	%	14	55	
	Interpretive Data: In hereditary hemochromatosis, plasma iron is usually >30.00 µmol/L and %Saturation is >60%. In advanced iron overload states, the %Saturation often is >90%. Measurement of iron, total iron binding capacity (TIBC), and %Saturation is often unreliable for iron deficiency. Ferritin is recommended for this purpose.					
Sex Hormone Binding Globulin (SHBG)	M/F	0-18yr	nmol/L	Not established		
	M	>18yr		13.5	71.0	
	F	>18yr		19.8	155.0	
Sodium	M/F	>0min	mmol/L	136	145	<120 or >160
	Interpretive Data: Reference values have not been established for patients less than 1 year of age. Pseudohyponatremia may be caused by specimens with high proteins or lipid concentrations.					
T3, Free	M/F	0-1yr	pmol/L	3.56	7.48	
		1-12yr		4.29	6.79	
	M	12-15yr		4.44	6.65	
		15-19yr		3.46	5.92	
		>19yr		2.89	5.65	
	F	12-15yr		3.84	6.06	
		15-19yr		3.55	5.70	
		>19yr		2.89	5.65	
	Interpretive Data: Please note change in adult reference ranges effective December 6 2019 and children's reference ranges effective December 11 2019.					
T4, Free	M/F	0-5d	pmol/L	Not established		
		5-15d		13.5	41.3	
		15-30d		8.7	32.5	
		30d-1yr		11.4	21.9	
		1-19yr		11.4	17.6	
		>19yr		9.0	19.0	
Testosterone	M	>0min	nmol/L	8.00	32.00	
	F			0.40	1.85	
	Interpretive Data: Male reference range applies to post-puberty and is based on a morning sample, since levels tend to decline through the day					

Clinical Chemistry Blood Tests														
Name of Test	Gender	Age	Units	Low	High	Critical								
	Cystic Fibrosis Patients Expected Values: 2 hour post tobramycin (2 h after the end of the infusion): 18-20 mg/L 8 hour post tobramycin (8 h after the end of the infusion): 3-6 mg/L													
Total Iron Binding Capacity	M/F	>0min	µmol/L	43.40	76.50									
Triglyceride	M/F	>0min	mmol/L											
	Interpretive Data: Fasting sample reference ranges: Normal: <1.70 Borderline High: 1.70-2.25 High: 2.26-5.64 Very High: >5.65 Triglyceride results greater than 15.00 mmol/L can lead to abdominal pain and may be life-threatening due to chylomicron-induced pancreatitis. For interpretation of levels or ranges, please see: http://dyslipidemia.onlinecjc.ca/Content/PDFs/2012Guidelines.pdf													
Troponin T (High Sensitivity)	M	>0min	ng/L	<14		>50								
	F			<9										
	Interpretive Data: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">High Sensitivity Troponin T Normal Values</th> <th style="width:50%;">Suggested Time Intervals for Serial Testing</th> </tr> </thead> <tbody> <tr> <td>14 ng/L (Male) 9 ng/L (Female)</td> <td>0, 3, 6 hours</td> </tr> <tr> <td style="text-align:center;">Rule-in Acute Myocardial Infarction</td> <td style="text-align:center;">Rule-out Acute Myocardial Infarction</td> </tr> <tr> <td>Result >50 ng/L Or >= 20 ng/L change in results during serial sampling plus signs of ischemia</td> <td>Two (2) results with a difference of <15 ng/L at least six (6) hours apart</td> </tr> </tbody> </table> <p>Please note: Interpret with caution in patients who are on high dose biotin, since falsely depressed results may be seen, proportional to the level of circulating biotin. Note: Change of Troponin-T HS reference interval for females commenced on November 17, 2021 based on the new recommendations from Clinical Chemistry 64:4 645- 655 (2018).</p>						High Sensitivity Troponin T Normal Values	Suggested Time Intervals for Serial Testing	14 ng/L (Male) 9 ng/L (Female)	0, 3, 6 hours	Rule-in Acute Myocardial Infarction	Rule-out Acute Myocardial Infarction	Result >50 ng/L Or >= 20 ng/L change in results during serial sampling plus signs of ischemia	Two (2) results with a difference of <15 ng/L at least six (6) hours apart
High Sensitivity Troponin T Normal Values	Suggested Time Intervals for Serial Testing													
14 ng/L (Male) 9 ng/L (Female)	0, 3, 6 hours													
Rule-in Acute Myocardial Infarction	Rule-out Acute Myocardial Infarction													
Result >50 ng/L Or >= 20 ng/L change in results during serial sampling plus signs of ischemia	Two (2) results with a difference of <15 ng/L at least six (6) hours apart													
Unsaturated Iron Binding Capacity	M	>0min	µmol/L	12.50	55.50									
	F			12.40	43.00									
Urea	M/F	0-15d	mmol/L	1.0	8.2	<16yr>25.0 ≥16yr>35.0								
		15d-1yr		1.2	6.0									
		1-10yr		3.2	7.9									
	M	10-19yr		2.6	7.5									
	F	10-19yr		2.6	6.8									
	M/F	>19yr		2.5	9.2									
Uric Acid	M/F	0-15d	µmol/L	164	757									
		15d-1yr		94	377									
		1-12yr		106	289									
	M	12-19yr		156	454									
	F	12-19yr		153	349									
	M	>19yr		210	450									
	F	>19yr		150	360									

Clinical Chemistry Blood Tests						
Name of Test	Gender	Age	Units	Low	High	Critical
	Interpretive Data: High normal uric acid level does not rule out gout, especially if sample taken during an acute attack. If on treatment for chronic gout, recommended levels are <360. Note that falsely lower results may be seen in patients on Rasburicase.					
Valproic Acid	M/F	>0min	µmol/L			>1400
	Interpretive Data: Therapeutic range: 350-700 µmol/L Toxic concentration: >832 µmol/L					
Vancomycin	M/F	>0min	mg/L			Pre: >25.00 Post: >40.00 Random: >30.00
	Interpretive Data: The target pre-dose (trough) vancomycin level depends on the microorganism and type of infection: 10-15 mg/L is recommended for most infections including those due to MRSA. For CNS infections, osteomyelitis, and other deep seated MRSA infections, the target trough concentrations is closer to 15 mg/L. Trough levels exceeding 15 mg/L are associated with increased risk of nephrotoxicity. Staphylococcus aureus isolates with vancomycin MIC ≥ 2 mg/L have a high treatment failure rate; consider an alternative agent and ID consult.					
Vitamin B12	M/F	>0min	pmol/L	138	652	
	Interpretive Data: Consider B12 replacement for symptomatic patients with B12 levels between 138 and 220 pmol/L and hematological or neurological abnormalities.					
Vitamin D	M/F	>18yr	nmol/L			
	Interpretive Data: Reference ranges for <u>adults only</u> : <25.0 nmol/L: severe vitamin D deficiency 25.0-49.9 nmol/L: vitamin D deficiency possible 50.0-75.0 nmol/L: likely vitamin D replete >200.0 nmol/L: vitamin D toxicity possible For children's ranges, register and sign in: https://app3.ccb.sickkids.ca/caliper/caliperlogin					

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
Routine				
WBC x 10 ⁹ /L	M	0-15 days	8.04 - 15.4	>100.00
	F	0-15 days	8.16 - 14.56	>100.00
	M	15 days - 1 month	7.8 - 15.91	>100.00
	F	15 days - 1 month	8.36 - 14.42	>100.00
	M	1 - 2 months	8.14 - 14.99	>100.00
	F	1 - 2 months	7.05 - 14.68	>100.00
	M	2 - 6 months	6.51 - 13.32	>100.00
	F	2 - 6 months	6.0 - 13.25	>100.00
	M	6 months - 2 years	5.98 - 13.51	>100.00
	F	6 months - 2 years	6.48 - 13.02	>100.00
	M	2 - 6 years	5.14 - 13.38	>100.00
	F	2 - 6 years	4.86 - 13.18	>100.00

Hematopathology Blood Tests

Test Name	Gender	Age	Range	Critical
	M	6 – 12 years	4.31 – 11.0	>100.00
	F	6 – 12 years	4.27 – 11.4	>100.00
	M	12 – 18 years	3.84 – 9.84	>100.00
	F	12 – 18 years	4.19 – 9.43	>100.00
	M	18 – 150 years	4.5 – 11	>100.00
	F	18 – 150 years	4.5 - 11	>100.00
RBC x 10 ¹² /L	M	0-15 days	4.1 – 5.55	
	F	0-15 days	4.12 – 5.74	
	M	15 days – 1 month	3.16 – 4.63	
	F	15 days – 1 month	3.32 – 4.8	
	M	1 – 2 months	3.02 – 4.22	
	F	1 – 2 months	2.93 – 3.87	
	M	2 – 6 months	3.43 – 4.8	
	F	2 – 6 months	3.45 – 4.75	
	M	6 months – 2 years	4.03 – 5.07	
	F	6 months – 2 years	3.97 – 5.01	
	M	2 – 6 years	3.89 – 4.97	
	F	2 – 6 years	3.84 – 4.92	
	M	6 – 12 years	3.96 – 5.03	
	F	6 – 12 years	3.9 – 4.96	
	M	12 – 18 years	4.00 – 6.00	
	F	12 – 18 years	3.70 – 5.20	
	M	18 – 150 years	4.5 – 6.5	
	F	18 – 150 years	3.8 – 5.8	
HGB g/L	M	0-15 days	139 - 191	<60
	F	0-15 days	134 - 200	<60
	M	15 days – 1 month	100 - 153	<60
	F	15 days – 1 month	108 - 146	<60
	M	1 – 2 months	89 - 127	<60
	F	1 – 2 months	92 - 114	<60
	M	2 – 6 months	96 - 124	<60
	F	2 – 6 months	99 - 124	<60
	M	6 months – 2 years	101 - 125	<60
	F	6 months – 2 years	102 - 127	<60
	M	2 – 6 years	102 - 127	<60
	F	2 – 6 years	102 - 127	<60
	M	6 – 12 years	107 - 134	<60
	F	6 – 12 years	106 - 132	<60
	M	12 – 18 years	110 - 180	<60
	F	12 – 18 years	105 - 150	<60
	M	18 – 150 years	140 - 180	<60
	F	18 – 150 years	120 - 160	<60
HCT L/L	M	0-15 days	0.398 - 0.536	
	F	0-15 days	0.396 - 0.572	
	M	15 days – 1 month	0.305 – 0.450	
	F	15 days – 1 month	0.320 – 0.445	
	M	1 – 2 months	0.268 – 0.375	
	F	1 – 2 months	0.277 – 0.351	
	M	2 – 6 months	0.286 – 0.372	
	F	2 – 6 months	0.295 – 0.371	
	M	6 months – 2 years	0.308 – 0.378	
	F	6 months – 2 years	0.309 – 0.379	
M	2 – 6 years	0.310 – 0.377		

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	F	2 – 6 years	0.312 – 0.378	
	M	6 – 12 years	0.322 – 0.398	
	F	6 – 12 years	0.324 – 0.395	
	M	12 – 18 years	0.340 - 0.540	
	F	12 – 18 years	0.340 – 0.460	
	M	18 – 150 years	0.420 – 0.540	
	F	18 – 150 years	0.370 – 0.470	
MCV fL	M	0-15 days	91.3 – 103.1	
	F	0-15 days	92.7 – 106.4	
	M	15 days – 1 month	89.4 – 99.7	
	F	15 days – 1 month	90.1 – 103.0	
	M	1 – 2 months	84.3 – 94.2	
	F	1 – 2 months	83.4 – 96.4	
	M	2 – 6 months	74.1 – 87.5	
	F	2 – 6 months	74.8 – 88.3	
	M	6 months – 2 years	69.5 – 81.7	
	F	6 months – 2 years	71.3 – 82.6	
	M	2 – 6 years	71.3 – 84.0	
	F	2 – 6 years	72.3 – 85.0	
	M	6 – 12 years	74.4 – 86.1	
	F	6 – 12 years	75.9 – 87.6	
	M	12 – 18 years	77.0 – 94.0	
	F	12 – 18 years	77.0 – 94.0	
	MCH pg	M	0-15 days	
F		0-15 days	31.1 – 35.9	
M		15 days – 1 month	29.9 – 34.1	
F		15 days – 1 month	30.4 – 35.3	
M		1 – 2 months	27.8 – 32.0	
F		1 – 2 months	28.0 – 32.5	
M		2 – 6 months	24.4 – 28.9	
F		2 – 6 months	24.4 – 29.5	
M		6 months – 2 years	22.7 – 27.2	
F		6 months – 2 years	23.2 – 27.5	
M		2 – 6 years	23.7 – 28.3	
F		2 – 6 years	23.7 – 28.6	
M		6 – 12 years	24.9 – 29.2	
F		6 – 12 years	24.8 – 29.5	
M		12 – 18 years	25.6 – 32.6	
F		12 – 18 years	24.4 – 33.6	
MCHC g/L		M	0-15 days	330 – 357
	F	0-15 days	334 – 354	
	M	15 days – 1 month	327 – 351	
	F	15 days – 1 month	332 – 350	
	M	1 – 2 months	323 – 348	
	F	1 – 2 months	325 – 349	
	M	2 – 6 months	319 – 344	
	F	2 – 6 months	321 – 344	
	M	6 months – 2 years	316 – 344	
	F	6 months – 2 years	319 – 342	

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	M	2 – 6 years	320 – 347	
	F	2 – 6 years	318 – 346	
	M	6 – 12 years	322 – 349	
	F	6 – 12 years	318 – 346	
	M	12 – 18 years	318 – 360	
	F	12 – 18 years	310 – 353	
	M	18 – 150 years	315 – 350	
	F	18 – 150 years	315 - 350	
RDW %	M	0-15 days	14.8 – 17	
	F	0-15 days	14.6 – 17.3	
	M	15 days – 1 month	14.3 – 16.8	
	F	15 days – 1 month	14.4 – 16.2	
	M	1 – 2 months	13.8 – 16.1	
	F	1 – 2 months	13.6 – 15.8	
	M	2 – 6 months	12.4 – 15.3	
	F	2 – 6 months	12.2 – 14.3	
	M	6 months – 2 years	12.9 – 15.6	
	F	6 months – 2 years	12.7 – 15.1	
	M	2 – 6 years	12.5 – 14.9	
	F	2 – 6 years	12.4 – 14.9	
	M	6 – 12 years	12.3 – 14.1	
	F	6 – 12 years	12.2 – 14.4	
	M	12 – 18 years	11.0 – 15.0	
	F	12 – 18 years	11.0 – 15.0	
	M	18 – 150 years	11.5 – 14.5	
	F	18 – 150 years	11.5 – 14.5	
PLT x 10 ⁹ /L	M	0-15 days	218 – 419	<20
	F	0-15 days	144 – 449	<20
	M	15 days – 1 month	248 – 586	<20
	F	15 days – 1 month	279 - 571	<20
	M	1 – 2 months	229 – 562	<20
	F	1 – 2 months	331 – 597	<20
	M	2 – 6 months	244 – 529	<20
	F	2 – 6 months	247 – 580	<20
	M	6 months – 2 years	206 – 445	<20
	F	6 months – 2 years	214 – 459	<20
	M	2 – 6 years	202 – 403	<20
	F	2 – 6 years	189 - 394	<20
	M	6 – 12 years	206 – 369	<20
	F	6 – 12 years	199 – 367	<20
	M	12 – 18 years	130 – 400	<20
	F	12 – 18 years	130 – 400	<20
	M	18 – 150 years	150 – 350	<20
	F	18 – 150 years	150 - 350	<20
MPV fL	M	0-15 days	10.2 – 11.9	
	F	0-15 days	10.4 – 12.0	
	M	15 days – 1 month	10.1 – 12.1	
	F	15 days – 1 month	10.0 – 12.2	
	M	1 – 2 months	9.2 – 10.8	
	F	1 – 2 months	9.4 – 11.1	
	M	2 – 6 months	8.9 – 10.6	
	F	2 – 6 months	9.0 – 10.9	
M	6 months – 2 years	8.7 – 10.5		

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	F	6 months – 2 years	8.8 – 10.6	
	M	2 – 6 years	9.0 – 10.9	
	F	2 – 6 years	8.9 – 11.0	
	M	6 – 12 years	9.2 – 11.4	
	F	6 – 12 years	9.3 – 11.3	
	M	12 – 18 years	8.0 – 12.0	
	F	12 – 18 years	8.0 – 12.0	
	M	18 – 150 years	9.0 – 12.5	
	F	18 – 150 years	9.0 – 12.5	
LYMPH %	M	0-15 days	33.7 – 67.6	
	F	0-15 days	24.9 – 68.5	
	M	15 days – 1 month	33.6 – 76.8	
	F	15 days – 1 month	31.9 – 82.7	
	M	1 – 2 months	42.5 – 85.7	
	F	1 – 2 months	37.8 – 86.7	
	M	2 – 6 months	40.7 – 83.7	
	F	2 – 6 months	30.4 – 85.6	
	M	6 months – 2 years	26.0 – 79.6	
	F	6 months – 2 years	27.4 – 79.9	
	M	2 – 6 years	18.4 – 66.6	
	F	2 – 6 years	18.1 – 68.6	
	M	6 – 12 years	15.5 – 56.6	
	F	6 – 12 years	16.7 – 57.8	
	M	12 – 18 years	16.4 – 52.7	
	F	12 – 18 years	18.2 – 49.8	
	M	18 – 150 years	15.0 – 41.0	
F	18 – 150 years	15.0 – 41.0		
MONO %	M	0-15 days	6.7 – 19.9	
	F	0-15 days	5.2 – 20.6	
	M	15 days – 1 month	4.3 – 18.3	
	F	15 days – 1 month	5.6 – 13.8	
	M	1 – 2 months	4.4 – 14.0	
	F	1 – 2 months	3.8 – 15.5	
	M	2 – 6 months	3.8 – 13.4	
	F	2 – 6 months	3.8 – 12.6	
	M	6 months – 2 years	4.4 – 13.4	
	F	6 months – 2 years	3.8 – 12.8	
	M	2 – 6 years	4.2 – 12.2	
	F	2 – 6 years	4.2 – 11.4	
	M	6 – 12 years	4.2 – 12.3	
	F	6 – 12 years	4.2 – 11.3	
	M	12 – 18 years	4.4 – 12.3	
	F	12 – 18 years	4.1 – 10.9	
	M	18 – 150 years	2.0 - 10.0	
F	18 – 150 years	2.0 – 10.0		
NEUT %	M	0-15 days	20.2 – 46.2	
	F	0-15 days	15.2 – 66.1	
	M	15 days – 1 month	14.0 – 54.6	
	F	15 days – 1 month	10.6 – 57.3	
	M	1 – 2 months	10.2 – 48.7	
	F	1 – 2 months	8.9 – 68.2	
	M	2 – 6 months	10.9 – 47.8	
F	2 – 6 months	14.1 - 76.0		

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	M	6 months – 2 years	17.5 – 69.5	
	F	6 months – 2 years	16.9 – 74.0	
	M	2 – 6 years	22.4 – 69.0	
	F	2 – 6 years	22.4 – 69.0	
	M	6 – 12 years	28.6 – 74.5	
	F	6 – 12 years	29.8 – 71.4	
	M	12 – 18 years	32.5 – 74.7	
	F	12 – 18 years	39.0 – 73.6	
	M	18 – 150 years	45.0 – 70.0	
EOS %	F	18 – 150 years	45.0 – 70.0	
	M	0-15 days	0.3 – 5.2	
	F	0-15 days	0.4 – 4.6	
	M	15 days – 1 month	0.2 – 5.4	
	F	15 days – 1 month	0.0 – 5.3	
	M	1 – 2 months	0.0 – 4.5	
	F	1 – 2 months	0.0 – 4.1	
	M	2 – 6 months	0.0 – 4.0	
	F	2 – 6 months	0.0 – 3.6	
BASO %	M	6 months – 2 years	0.0 – 3.7	
	F	6 months – 2 years	0.0 – 3.2	
	M	2 – 6 years	0.0 – 4.1	
	F	2 – 6 years	0.0 – 3.3	
	M	6 – 12 years	0.0 – 4.7	
	F	6 – 12 years	0.0 – 4.0	
	M	12 – 18 years	0.0 – 4.0	
	F	12 – 18 years	0.0 – 3.4	
	M	18 – 150 years	0.0 – 7.0	
	F	18 – 150 years	0.0 – 7.0	
	M	0-15 days	0.1 – 0.8	
	F	0-15 days	0.1 – 0.6	
	M	15 days – 2 months	0.0 – 0.6	
	F	15 days – 2 months	0.0 – 0.5	
IG %	M	2 months - 6 years	0.0 – 0.6	
	F	2 months - 6 years	0.0 – 0.6	
	M	6 – 18 years	0.0 – 0.7	
	F	6 – 18 years	0.0 – 0.6	
	M	18 – 150 years	0.0 – 1.5	
	F	18 – 150 years	0.0 – 1.5	
	M	0 -150 years	0 – 5	
	F	0 -150 years	0 – 5	
LYMPH Absolute x10 ⁹ /L	M	0-15 days	2.07 – 7.53	
	F	0-15 days	1.75 – 8.0	
	M	15 days – 1 month	2.11 – 8.38	
	F	15 days – 1 month	2.42 – 8.2	
	M	1 – 2 months	2.47 – 7.95	
	F	1 – 2 months	2.29 – 9.14	
	M	2 – 6 months	2.45 – 8.89	
	F	2 – 6 months	2.14 – 8.99	
	M	6 months – 2 years	1.56 – 7.83	
	F	6 months – 2 years	1.52 – 8.09	
	M	2 – 6 years	1.13 – 5.52	
	F	2 – 6 years	1.25 – 5.77	
	M	6 – 12 years	0.97 – 3.96	

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	F	6 – 12 years	1.16 – 4.28	
	M	12 – 18 years	0.97 – 3.26	
	F	12 – 18 years	1.16 – 3.33	
	M	18 – 150 years	1.5 – 4.0	
	F	18 – 150 years	1.5 – 4.0	
MONO Absolute x10 ⁹ /L	M	0-15 days	0.52 – 1.77	
	F	0-15 days	0.57 – 1.72	
	M	15 days – 1 month	0.28 – 1.38	
	F	15 days – 1 month	0.42 – 1.21	
	M	1 – 2 months	0.28 – 1.05	
	F	1 – 2 months	0.28 – 1.21	
	M	2 – 6 months	0.28 – 1.07	
	F	2 – 6 months	0.24 – 1.17	
	M	6 months – 2 years	0.25 – 1.15	
	F	6 months – 2 years	0.26 – 1.08	
	M	2 – 6 years	0.19 – 0.94	
	F	2 – 6 years	0.24 – 0.92	
	M	6 – 12 years	0.19 – 0.85	
	F	6 – 12 years	0.19 – 0.81	
	M	12 – 18 years	0.18 – 0.78	
	F	12 – 18 years	0.19 – 0.72	
	M	18 – 150 years	0.1 – 0.9	
F	18 – 150 years	0.1 – 0.9		
NEUT Absolute x10 ⁹ /L	M	0 – 15 days	1.6 – 6.06	<0.20
	F	0 – 15 days	1.73 – 6.75	
	M	15 days – 1 month	1.18 – 5.45	
	F	15 days – 1 month	1.23 – 4.8	
	M	1 – 2 months	0.83 – 4.23	
	F	1 – 2 months	1.0 – 4.68	
	M	2 – 6 months	0.97 – 5.45	
	F	2 – 6 months	1.04 – 7.2	
	M	6 months – 2 years	1.19 – 7.21	
	F	6 months – 2 years	1.6 – 8.29	
	M	2 – 6 years	1.54 – 7.92	
	F	2 – 6 years	1.6 – 8.29	
	M	6 – 12 years	1.63 – 7.55	
	F	6 – 12 years	1.64 – 7.87	
	M	12 – 18 years	1.54 – 7.04	
	F	12 – 18 years	1.82 – 7.47	
	M	18 – 150 years	2.0 – 7.50	
F	18 – 150 years	2.0 – 7.50		
EOS Absolute x10 ⁹ /L	M	0-15 days	0.12 – 0.66	
	F	0-15 days	0.09 – 0.64	
	M	15 days – 1 month	0.08 – 0.8	
	F	15 days – 1 month	0.06 – 0.75	
	M	1 – 2 months	0.05 – 0.57	
	F	1 – 2 months	0.04 – 0.63	
	M	2 – 6 months	0.03 – 0.61	
	F	2 – 6 months	0.02 – 0.74	
	M	6 months – 2 years	0.02 – 0.82	
	F	6 months – 2 years	0.02 – 0.58	
	M	2 – 6 years	0.03 – 0.53	
F	2 – 6 years	0.03 – 0.46		

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	M	6 – 12 years	0.03 – 0.52	
	F	6 – 12 years	0.03 – 0.47	
	M	12 – 18 years	0.04 – 0.38	
	F	12 – 18 years	0.02 – 0.32	
	M	18 – 150 years	0.0 – 0.5	
	F	18 – 150 years	0.0 – 0.5	
BASO Absolute x10 ⁹ /L	M	0-15 days	0.02 – 0.11	
	F	0-15 days	0.02 – 0.07	
	M	15 days – 1 month	0.01 – 0.07	
	F	15 days – 1 month	0.01 – 0.06	
	M	1 – 2 months	0.01 – 0.07	
	F	1 – 2 months	0.01 – 0.05	
	M	2 – 6 months	0.01 – 0.06	
	F	2 – 6 months	0.01 – 0.07	
	M	6 months – 6 years	0.01 – 0.06	
	F	6 months – 6 years	0.01 – 0.06	
	M	6 – 12 years	0.01 – 0.06	
	F	6 – 12 years	0.01 – 0.05	
	M	12 – 150 years	0 – 0.1	
	F	12 – 150 years	0 – 0.1	
IG Absolute x10 ⁹ /L	M	0-2 days	0 – 0.28	
	F	0-2 days	0 – 0.28	
	M	2 days – 14 days	0 – 0.27	
	F	2 days – 14 days	0 – 0.27	
	M	14 days – 1 month	0 – 0.22	
	F	14 days – 1 month	0 – 0.22	
	M	1 – 3 months	0 – 0.09	
	F	1 – 3 months	0 – 0.09	
	M	3 – 6 months	0 – 0.06	
	F	3 – 6 months	0 – 0.06	
	M	6 months – 2 years	0 – 0.14	
	F	6 months – 2 years	0 – 0.14	
	M	2 – 6 years	0 – 0.06	
	F	2 – 6 years	0 – 0.06	
	M	6 – 12 years	0 – 0.04	
	F	6 – 12 years	0 – 0.04	
	M	12 – 16 years	0 – 0.03	
	F	12 – 16 years	0 – 0.03	
	M	16 – 150 years	0 – 0.09	
	F	16 – 150 years	0 – 0.09	
Retic %	M	0 – 4 days	3.47 – 5.4	
	F	0 – 4 days	3.47 – 5.4	
	M	4 days – 1 month	1.06 – 2.37	
	F	4 days – 1 month	1.06 – 2.37	
	M	1 – 2 months	2.12 – 3.47	
	F	1 – 2 months	2.12 – 3.47	
	M	2 – 6 months	1.55 – 2.7	
	F	2 – 6 months	1.55 – 2.7	
	M	6 months – 2 years	0.99 – 1.82	
	F	6 months – 2 years	0.99 – 1.82	
	M	2 – 6 years	0.82 – 1.45	
	F	2 – 6 years	0.82 – 1.45	
M	6 – 12 years	0.98 – 1.94		

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
	F	6 – 12 years	0.98 – 1.94	
	M	12 – 18 years	0.90 – 1.49	
	F	12 – 18 years	0.90 – 1.49	
	M	18 – 150 years	0.50 – 1.46	
	F	18 – 150 years	0.56 – 1.52	
Retic Absolute x 10 ⁹ /L	M	0 – 4 days	147.5 – 216.4	
	F	0 – 4 days	147.5 – 216.4	
	M	4 days – 1 month	51.3 – 110.4	
	F	4 days – 1 month	51.3 – 110.4	
	M	1 – 2 months	51.8 – 77.9	
	F	1 – 2 months	51.8 – 77.9	
	M	2 – 6 months	48.2 – 88.2	
	F	2 – 6 months	48.2 – 88.2	
	M	6 months – 2 years	43.5 – 111.1	
	F	6 months – 2 years	43.5 – 111.1	
	M	2 – 6 years	36.4 – 68.0	
	F	2 – 6 years	36.4 – 68.0	
	M	6 – 12 years	42.4 – 70.2	
	F	6 – 12 years	42.4 – 70.2	
	M	12 – 18 years	41.6 – 65.1	
	F	12 – 18 years	41.6 – 65.1	
	M	18 – 150 years	26.1 – 96.7	
F	18 – 150 years	28.8 – 94.1		
ESR	M	0 – 150	0 – 20 mm/hr	
	F	0 – 150	0 – 26 mm/hr	
Haptoglobin	M/F	>0min	0.47 – 2.03 g/L	
Plasma Hemoglobin		0 – 150 years	0 – 30 mg/dL	
Transferrin	M/F	>0min	1.81 – 3.31 g/L	
Coagulation				
INR		0 – 150	0.8 – 1.2	≥6.0
PTT		0 – 150	26 – 38 sec	>80 (not on heparin)
Thrombin Time		0 – 150	11.0 - 18.0 sec	
Dade PTT		0 – 150	21 – 33 sec	
D-Dimer		0 – 150	<200 ng/mL	
Fibrinogen		0 – 150	2.15 - 4.79 g/L	
Manual INR		0 – 150	0.8 - 1.2	
Manual PTT		0 – 150	28 – 40 sec	
Manual TT		0 – 150	19.5 – 24.7 sec	
FII		0 - 89 days	0.33 - 0.93 U/mL	
		89 days – 1 year	0.45 - 1.05 U/mL	
		1 – 6 years	0.71 - 1.16 U/mL	
		6 – 11 years	0.67 - 1.07 U/mL	
		11 – 16 years	0.61 - 1.04 U/mL	
		16 – 150	0.75 – 1.41 U/mL	
FV		0 - 89 days	0.45 - 1.45 U/mL	
		89 days – 1 year	0.48 - 1.32 U/mL	
		1 – 6 years	0.79 - 1.27 U/mL	
		6 – 11 years	0.63 - 1.16 U/mL	
		11 – 16 years	0.57 - 0.99 U/mL	
		16 – 150	0.54 – 1.47 U/mL	
FVII		0 – 150	0.50 – 1.63 U/mL	
FVIII		0 – 150	0.50 – 1.50 U/mL	
FIX		0 - 89 days	0.15 - 0.91 U/mL	

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
		89 days – 1 year	0.21 - 1.13 U/mL	
		1 – 6 years	0.47 - 1.04 U/mL	
		6 – 11 years	0.63 - 0.89 U/mL	
		11 – 16 years	0.59 - 1.22 U/mL	
		16 – 150	0.68 – 1.74 U/mL	
FX		0 - 89 days	0.19 - 0.79 U/mL	
		89 days – 1 year	0.35 - 1.07 U/mL	
		1 – 6 years	0.58 - 1.16 U/mL	
		6 – 11 years	0.55 - 1.01 U/mL	
		11 – 16 years	0.50 - 1.17 U/mL	
FXI		16 – 150	0.53 – 1.57 U/mL	
		0 - 89 days	0.23 - 0.87 U/mL	
		89 days – 1 year	0.41 - 0.97 U/mL	
		1 – 6 years	0.56 - 1.50 U/mL	
		6 – 11 years	0.52 - 1.20 U/mL	
FXII		11 – 16 years	0.50 - 0.97 U/mL	
		16 – 150	0.59 – 1.57 U/mL	
		0 - 89 days	0.11 - 0.83 U/mL	
		89 days – 1 year	0.25 - 1.09 U/mL	
		1 – 6 years	0.64 - 1.29 U/mL	
vWF Antigen (U/mL)		6 – 11 years	0.60 - 1.40 U/mL	
		11 – 16 years	0.34 - 1.37 U/mL	
		16 – 150	0.44 – 1.55 U/mL	
		0 – 150	Blood Group: O – 0.44-1.39 A, B, AB – 0.54-2.00	
		0 – 150	0.40 – 1.52 U/mL	
vWF Ristocetin Cofactor	M/F	0 – 150	≥0.40 U/mL	
Protein C		0 - 89 days	0.2 – 0.64 U/mL	
		89 days - 1 year	0.4 – 0.92 U/mL	
		1 – 6 years	0.45 – 0.93 U/mL	
		6 – 11 years	0.55 – 1.11 U/mL	
		0 – 150	0.74 – 1.64 U/mL	
Protein S		0 - 89 days	0.23 - 0.88 U/mL	
		89 days - 1 year	0.56 - 1.28 U/mL	
		1 – 6 years	0.56 - 1.28 U/mL	
		6 – 11 years	0.43 – 1.24 U/mL	
		M	6 – 150	
F	6 – 150	0.55 – 1.47 U/mL		
AT		0 - 89 days	0.41 - 0.93 U/mL	
		89 days – 1 year	0.73 - 1.21 U/mL	
		1 – 6 years	0.82 - 1.39 U/mL	
		6 – 11 years	0.90 - 1.31 U/mL	
		11 – 16 years	0.77 - 1.32 U/mL	
16 – 150	0.80 – 1.40 U/mL			
APC Resistance Ratio		0 – 150	>2.1	
Lupus Anticoagulant Ratio		0 – 150	0.8 – 1.2	
PFA 100		>37 weeks up to 2.5 years	COL/EPI 61-108 sec COL/ADP 48-65 sec	
		2.5 years – 17 years	COL/EPI 82-165 sec COL/ADP 70-110 sec	
		Adult (18+ years)	COL/EPI 80-152 sec COL/ADP 60-116 sec	

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
Anti-Xa		0 – 150	* No therapeutic range. Ballpark range is 0.5-1.0 U/mL	
Immunology				
A1C (%)		0 – 150yr	4.6 – 5.9	
ASOT (IU/mL)	M/F	>0min	0.0 – 200.0	
	Interpretive Data: Normal values can vary with the season of the year. Higher titres are suggestive of recent infection. A two-fold or greater rise in ASO titre over 2 to 4 weeks is indicative of a streptococcal infection.			
C3 (g/L)	M/F	>0min	0.80 – 1.64	
C4 (g/L)	M/F	>0min	0.140 – 0.350	
CRP (mg/L)	M/F	>0min	0.00 – 7.99	
	Interpretive Data: >8 mg/L is consistent with acute phase response to inflammation. Cardiovascular Risk assessment: Low risk: <1 mg/L Average risk: 1-3 mg/L High risk: >3 mg/L			
IgA (g/L)	M/F	0 – 2mth	0.01 – 0.52	
		2 – 3mth	0.03 – 0.47	
		3 – 4mth	0.05 – 0.46	
		4 – 5mth	0.04 – 0.73	
		5 – 6mth	0.08 – 0.83	
		6 – 7mth	0.08 – 0.67	
		7-10mth	0.11 – 0.90	
		10mth–1yr	0.16 – 0.83	
		1 – 2yr	0.14 – 1.05	
		2 – 3yr	0.14 – 1.22	
		3 – 4yr	0.22 – 1.57	
		4 – 6yr	0.25 – 1.52	
		6 – 9yr	0.33 – 2.00	
		9 – 11yr	0.45 – 2.34	
>11yr	0.95 – 3.59			
IgG (g/L)	M/F	0 – 2mth	2.40 – 8.60	
		2 – 3mth	1.90 – 5.80	
		3 – 4mth	1.70 – 5.60	
		4 – 5mth	1.90 – 5.40	
		5 – 6mth	1.60 – 7.80	
		6 – 7mth	2.10 – 6.70	
		7 - 10mth	2.10 – 8.60	
		10mth – 1yr	2.80 – 10.30	
		1 – 2yr	3.40 – 11.60	
		2 – 3yr	4.00 – 10.10	
		3 – 4yr	4.20 – 10.90	
		4 – 6yr	4.40 – 11.90	
		6 – 9yr	6.05 – 12.30	
		9 – 11yr	5.90 – 15.10	
>11yr	6.50 – 15.20			
IgM (g/L)	M/F	0 – 2mth	0.19 – 0.83	
		2 – 3mth	0.16 – 1.00	
		3 – 4mth	0.23 – 0.85	
		4 – 5mth	0.26 – 0.96	

Hematopathology Blood Tests				
Test Name	Gender	Age	Range	Critical
		5 – 6mth	0.31 – 1.03	
		6 – 7mth	0.33 – 0.97	
		7 - 10mth	0.32 – 1.20	
		10mth –1yr	0.39 – 1.42	
		1 – 2yr	0.41 – 1.64	
		2 – 3yr	0.46 – 1.60	
		3 – 4yr	0.45 – 1.90	
		4 – 6yr	0.41 – 1.86	
		6 – 9yr	0.46 – 1.97	
		9 – 11yr	0.49 – 2.30	
		>11yr	0.46 – 3.04	
Free Kappa (mg/L)		0 – 150yr	3.30 – 19.40	
Free Lambda (mg/L)		0 – 150yr	5.71 – 26.30	
Free Kappa/Free Lambda		0 – 150yr	0.26 – 1.65	
Interpretive Data: Renal impairment reduces renal clearance of both free kappa and free lambda light chains with a relative increase of kappa light chains. Therefore, the suggested kappa: lambda ratio reference range for individuals with renal disease should extend up to 3.10. Elevation of free kappa light chains and kappa:lambda ratio may be due to contributions from either of both a plasma cell dyscrasia and reduced renal function. Interpret in light of presence or absence of renal impairment, clinical and other laboratory findings.				
Rheumatoid Factor (IU/mL)	M/F	>0min	0.0 – 30.0	
Interpretive Data: Normal: <30.0 IU/mL Weakly positive: 30.0-50.0 IU/mL Positive: >50.0 IU/mL				
SPE - Albumin		0 – 150yr	36.0 - 49.0 g/L	
SPE – Alpha 1		0 – 150yr	2.0 - 3.7 g/L	
SPE – Alpha 2		0 – 150yr	4.7 - 8.5 g/L	
SPE – Beta 1		0 – 150yr	3.4 - 5.2 g/L	
SPE – Beta 2		0 – 150yr	2.1 - 4.7 g/L	
SPE – Gamma		0 – 150yr	5.9 - 14.5 g/L	
UPE	No reference range			
UIFE	No reference range			
M Protein Scan	No reference range			

Microbiology Blood Tests					
Name of Test	Specimen Type	Units	Low	High	Critical
Lyme Disease Antibody Screen	Serum (SST)	Qualitative	NA	NA	NA
Anti EBNA Serology	Serum (SST)	Qualitative	NA	NA	NA
EBV IgM Serology	Serum (SST)	Qualitative	NA	NA	NA
HTLV 1 and 2	Serum (SST)	Qualitative	NA	NA	NA
Measles Antibody IgG	Serum (SST)	Qualitative	NA	NA	NA
Measles Antibody IgM	Serum (SST)	Qualitative	NA	NA	NA
Treponema Pallidum Pa	Serum (SST)	Qualitative	NA	NA	NA
Mumps Antibody IgG	Serum (SST)	Qualitative	NA	NA	NA
Mumps Antibody IgM	Serum (SST)	Qualitative	NA	NA	NA
Parvovirus B19 IgG	Serum (SST)	Qualitative	NA	NA	NA
Parvovirus B19 IgM	Serum (SST)	Qualitative	NA	NA	NA
Rapid Plasma Reagin Titre	Serum (SST)	Titer	NA	NA	NA
Varicella zoster Immune status	Serum (SST)	Qualitative	NA	NA	NA
Cytomegalovirus Antibody IgM	Serum (SST)	Qualitative	NA	NA	NA

Microbiology Blood Tests					
Name of Test	Specimen Type	Units	Low	High	Critical
CMV Antibody IgG	Serum (SST)	Qualitative	NA	NA	NA
HIV 1 and 2 Screening Test	Serum (SST)	Qualitative	NA	NA	NA
HIV Immunoblot Confirmatory	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis B Core Antibody	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis B Surface Antibody	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis B Surface Antigen	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis C Antibody	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis C Antibody RIBA Confirmation	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis C Genotyping	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis A Antibody IgM	Serum (SST)	Qualitative	NA	NA	NA
Hepatitis A Antibody IgG	Serum (SST)	Qualitative	NA	NA	NA
Rubella Antibody IgG	Serum (SST)	Qualitative	NA	NA	NA
Rubella Antibody IgM	Serum (SST)	Qualitative	NA	NA	NA
Syphilis Screening EIA	Serum (SST)	Qualitative	NA	NA	NA
Toxoplasma Antibody IgG	Serum (SST)	Qualitative	NA	NA	NA
Toxoplasma Antibody IgM	Serum (SST)	Qualitative	NA	NA	NA
ANA	Serum (SST)	Qualitative	NA	NA	NA
Anti-Cardiolipin IgG	Serum (SST)	GPL unit/mL	NA	NA	NA
Anti-Cyclic Citrullinated Peptide	Serum (SST)	U/mL	NA	NA	NA
Anti-Mitochondrial 2	Serum (SST)	Qualitative	NA	NA	NA
Anti-Tissue Transglutaminase IgA	Serum (SST)	U/mL	NA	NA	NA
Vasculitis Panel	Serum (SST)	AI	NA	NA	NA
Hepatitis C Viral Load	Serum (SST)	log IU/ml	NA	NA	NA
HIV Viral Load	Plasma (EDTA)	Copies/mL	NA	NA	NA
Cytomegalovirus Quantitative PCR	Plasma (EDTA)	IU/mL	NA	NA	NA

Clinical Chemistry Arterial Blood Gas Tests						
Name of Test	Specimen Type	Units	Low	High	Interpretive Data	Critical
pH	Arterial Blood (Heparinized syringe)		7.35	7.45	pH, PCO2 and PO2 results reflect the default temperature of 37.0 °C.	<7.20 or >7.60
PCO2		mmHg	35	45		<20 or >70
PO2		mmHg	80	100		<60
pH (cor)			7.35	7.45	pH (cor), pCO2 (cor) & pO2 (cor) reflect the patient's actual body temperature.	<7.20 or >7.60
pCO2 (cor)		mmHg	35	45		<20 or >70
pO2 (cor)		mmHg	80	100		<60
HCO3		mmol/L	21	28		<10 or >40
Base Excess		mmol/L	-2.0	3.0		
O2 Content		mL/dL	16.3 M 15.6 F	23.6 M 21.0 F		
O2 Saturation (SO2)		%	94	98	Hemoglobin oxygen saturation	
Fractional Oxyhemoglobin (O2Hb)		%	95	98	Fractional oxyhemoglobin	
Total Hemoglobin		g/L	140 M 120 F	180 M 160 F		<60
Carboxyhemoglobin			%			<1.5 (non-smokers)

Clinical Chemistry Arterial Blood Gas Tests

Name of Test	Specimen Type	Units	Low	High	Interpretive Data	Critical
(COHgb)					<10.0 (smokers) >20.0 (Toxic) >50.0 (Lethal)	
Methemoglobin (METHgb)		%		1.5		>30.0
Sodium		mmol/L	136	145		<120 or >160
Potassium		mmol/L	3.4	5.0		<2.8 or >6.2
Ionized Calcium		mmol/L	1.15	1.27	Reference values are for adults.	<0.80 or >1.60
Lactate		mmol/L	0.5	1.7		>4.0

Clinical Chemistry Venous Blood Gas Tests

Name of Test	Specimen Type	Units	Low	High	Interpretive Data	Critical
pH	Venous Blood (Heparinized syringe)		7.32	7.43	pH, PCO ₂ and PO ₂ results reflect the default temperature of 37.0 °C.	
PCO ₂		mmHg	38	50		
PO ₂		mmHg			Reference ranges are not established for venous blood	
pH (cor)			7.32	7.43	pH (cor), pCO ₂ (cor) & pO ₂ (cor) reflect the patient's actual body temperature.	
pCO ₂ (cor)		mmHg	38	50		
pO ₂ (cor)		mmHg			Reference ranges are not established for venous blood	
HCO ₃		mmol/L	22	29		<10 or >40
Base Excess		mmol/L			Reference ranges are not established for venous blood	
O ₂ Content		mL/dL	13.1 M 11.6 F	17.6 M 15.6 F		
O ₂ Saturation (SO ₂)		%			Hemoglobin oxygen saturation Reference ranges are not established for venous blood	
Fractional Oxyhemoglobin (O ₂ Hb)		%			Fractional oxyhemoglobin Reference ranges are not established for venous blood	
Total Hemoglobin		g/L	140 M	180 M		<60
Carboxyhemoglobin (COHgb)		%			<1.5 (non-smokers) <10.0 (smokers) >20.0 (Toxic) >50.0 (Lethal)	>20.0

Clinical Chemistry Venous Blood Gas Tests

Name of Test	Specimen Type	Units	Low	High	Interpretive Data	Critical
Methemoglobin (METHgb)		%		1.5		>30.0
Sodium		mmol/L	136	145		<120 or >160
Potassium		mmol/L	3.4	5.0		<2.8 or >6.2
Ionized Calcium		mmol/L	1.15	1.27	Reference values are for adults.	<0.80 or >1.60
Lactate		mmol/L	0.5	2.2		>4.0

Point of Care (POC) Arterial Blood Gas Tests

Name of Test	Specimen Type	Units	Low	High	Interpretive Data (Chartable)	Critical	
POC pH	Arterial Blood (Heparinized Syringe)		7.35	7.45	pH, pCO ₂ , & pO ₂ results reflect the default temperature of 37.0°C.	<7.20 or >7.60	
POC pCO ₂		mmHg	35	45		<20 or >70	
POC pO ₂		mmHg	80	100		<60	
POC pH (cor)			7.35	7.45	pH (cor), pCO ₂ (cor) & pO ₂ (cor) reflect the patient's actual body temperature.	<7.20 or >7.60	
POC pCO ₂ (cor)		mmHg	35	45		<20 or >70	
POC pO ₂ (cor)		mmHg	80	100		<60	
POC HCO ₃			mmol/L	21	28		<10 or >40
POC Base Excess			mmol/L	-2.0	3.0		
POC O ₂ Saturation			%	94	98	Hemoglobin oxygen saturation	
POC O ₂ Hb			%	95	98	Fractional oxyhemoglobin	
POC Total Hemoglobin		g/L	140 M 120 F	180 M 160 F		<60	
POC COHgb		%			<1.5 (non-smokers) <10.0 (smokers) >20.0 (Toxic) >50.0 (Lethal)	>20.0	
POC METHgb		%		1.5		>30.0	
POC Sodium		mmol/L	136	145		<120 or >160	
POC Potassium		mmol/L	3.4	5.0		<2.8 or >6.2	
POC Chloride		mmol/L	98	107			
POC Ionized Calcium		mmol/L	1.15	1.27		<0.75 or >1.60	
POC Lactate		mmol/L	0.5	1.7		>4.0	
POC Glucose		mmol/L	3.8	7.8		<2.5 or ≤16yr >15.0 or >16yr >25.0	

Point of Care (POC) Venous Blood Gas Tests						
Name of Test	Specimen Type	Units	Low	High	Interpretive Data (Chartable)	Critical
POC pH	Venous Blood (Heparinized Syringe)		7.32	7.43	pH, pCO ₂ , & pO ₂ results reflect the default temperature of 37.0°C. Reference ranges are not established for venous blood.	
POC pCO ₂		mmHg	38	50		
POC pO ₂		mmHg				
POC pH (cor)			7.32	7.43	pH (cor), pCO ₂ (cor) & pO ₂ (cor) reflect the patient's actual body temperature. Reference ranges are not established for venous blood.	
POC pCO ₂ (cor)		mmHg	38	50		
POC pO ₂ (cor)		mmHg				
POC HCO ₃		mmol/L	22	29		<10 or >40
POC Base Excess		mmol/L			Reference ranges are not established for venous blood.	
POC O ₂ Saturation		%			Hemoglobin oxygen saturation. Reference ranges are not established for venous blood.	
POC O ₂ Hb		%			Fractional oxyhemoglobin. Reference ranges are not established for venous blood.	
POC Total Hemoglobin	g/L	140 M 120 F	180 M 160 F		<60	
POC COHgb	%			<1.5 (non-smokers) <10.0 (smokers) >20.0 (Toxic) >50.0 (Lethal)	>20.0	
POC METHgb	%		1.5		>30.0	
POC Sodium	mmol/L	136	145		<120 or >160	
POC Potassium	mmol/L	3.4	5.0		<2.8 or >6.2	
POC Chloride	mmol/L	98	107			
POC Ionized Calcium	mmol/L	1.15	1.27		<0.75 or >1.60	
POC Lactate	mmol/L	0.5	2.2		>4.0	
POC Glucose	mmol/L	3.8	7.8		<2.5 or ≤16yr >15.0 or >16yr >25.0	

Clinical Chemistry Urine Tests						
Name of Test	Specimen Type	Gender	Units	Low	High	Critical
Alb/Creat Ratio	Random	M/F	mg/mmol	<3.0 mg/mmol		
		Interpretive Data: URINE ALBUMIN/CREATININE RATIO = ALB/CREAT RATIO = (U ACR) (Previously referred to as microalbuminuria) Normal-mildly increased: <3.0 mg/mmol Moderately increased: 3.0-30.0 mg/mmol Severely increased: >30.0 mg/mmol For more information, refer to the latest Kidney Disease: Improving Global Outcomes (KDIGO) guidelines.				
Amylase	24 Hr & timed	M/F	U/Hr	0	16	
			U/TV	Not established		
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Calcium	24 Hr & random	M	mmol/TV	0.0	7.4	
		F		0.0	6.8	
		Interpretive Data: Reference ranges are based on individuals consuming an average daily intake of 600 to 800 mg of calcium per day. Reference ranges are for adults; reference ranges have not been established for children.				
Calcium/Creatinine Ratio	Random	M/F	mmol/mmol	Not established		
		0-18yr		<0.56		
		18-83yr		Not established		
		>83yr	Interpretive Data: Reference values have not been established for patients <18 years or >83 years of age.			
Catecholamines: Epinephrine	24 Hr	M/F >18yr	nmol/TV	0.0	136.5	
		M/F	µmol/mol urine creatinine	0-1yr: 0.0	231.0	
				1-4yr: 0.0	51.0	
				4-11yr: 3.0	57.0	
				11-18yr: 2.0	36.0	
				>18yr: 0.0	13.0	
Catecholamines: Norepinephrine	24 Hr	M/F >18yr	nmol/TV	0	591	
		M/F	µmol/mol urine creatinine	0-1yr: 17.0	207.0	
				1-4yr: 17.0	194.0	
				4-11yr: 18.0	72.0	
				11-18yr: 3.0	70.0	
				>18yr: 0.0	30.0	
Catecholamines: Dopamine	24 Hr	M/F >18yr	nmol/TV	392	2500	
		M/F	µmol/mol urine creatinine	0-1yr: 177.0	952.0	
				1-4yr: 59.0	900.0	
				4-11yr: 162.0	531.0	
				11-18yr: 89.0	332.0	
				>18yr: 0.0	185.0	
Chloride	24 Hr & random	M/F	mmol/TV	110	250	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				

Clinical Chemistry Urine Tests						
Name of Test	Specimen Type	Gender	Units	Low	High	Critical
Citrate	24 Hr	M/F	mmol/TV	1.7		
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Cortisol	24 hr	M/F	nmol/TV	12	486	
		Interpretive Data: Reference ranges are for adults; reference ranges have not been established for children.				
Cortisol/Creatinine ratio	calculation	M/F	ratio	Not established		
Creatinine	24 Hr & timed	M	mmol/TV	8.4	22.0	
		F		6.3	14.6	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Creatinine Clearance	24 Hr & timed	M/F	mL/s	1.10	2.75	
		Interpretive Data: Reference ranges are for adults; reference ranges have not been established for children.				
Magnesium	24 Hr & random	M/F	mmol/TV	3.0	5.0	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Osmolality	24 Hr & random	M/F	mmol/Kg	0-15 yrs: 50	0-15 yrs: 600	
				≥16 yrs: 50	≥16 yrs: 1400	
Oxalate	24 Hr	M	µmol/TV	80	490	
		F		40	320	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children. Very high ascorbic acid (Vitamin C) can interfere at levels over 16 µmol/TV. Patients should refrain from taking excessive amounts of Vitamin C or Vitamin C rich food for at least 48 hours prior to urine collection.				
Phosphorus	24 Hr & random	M/F	mmol/L	Not established		
		Interpretive Data: Reference ranges have not been established. Interpretation of urinary phosphorus excretion is dependent upon the clinical situation, and should be interpreted in conjunction with the plasma phosphorus concentration.				
		M/F	mmol/TV	13	42	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Potassium	24 Hr & random	M/F	mmol/TV	25	125	<2 or >200
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Pro/Creat Ratio	Random	M/F	g/mmol	<0.024		
		Interpretive Data: URINE PROTEIN/CREATININE RATIO = PRO/CREAT RATIO = (U PCR) (Previously referred to as proteinuria)				
Protein	24 Hr & random	M/F	g/L	0.01	0.14	
		Interpretive Data: Reference values are for adults; reference ranges have not been established for children. 24 hour at rest: 0.05 - 0.08 g/TV 24 hour excretion: <0.30 g/TV This cut-off is recommended by the National Kidney Foundation - Kidney Disease Outcomes Quality Initiative (K/DOQI).				
Sodium	24 Hr & random	M/F	mmol/TV	40	220	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Urea	24 Hr &	M/F	mmol/TV	428	714	

Clinical Chemistry Urine Tests

Name of Test	Specimen Type	Gender	Units	Low	High	Critical
	random	Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				
Uric Acid	24 Hr	M/F	mmol/TV	1.5	4.4	
		Interpretive Data: Reference Values are for adults; reference ranges have not been established for children.				

Clinical Chemistry Urinalysis

Name of Test	Specimen Type	Units	Low	High	Critical
Color	random		Yellow	Dark Yellow	
Clarity	random		Clear		
Leukocyte Esterase	random	Leu/uL	Negative		
Occult Blood	random	Ery/uL	Negative		
Nitrite	random		Negative		
pH	random		5.0	8.0	
Specific Gravity	random		1.010	1.025	
Protein	random	g/L	Negative		
Glucose	random	mmol/L	Negative		
Ketones	random	mmol/L	Negative	Trace	
Urobilinogen	random	umol/L	3.2	16	
Bilirubin	random		Negative		

Interpretive Data: Urine examined for color, clarity and chemical analysis (by dipstick). Microscopic analysis will only be performed if urine is cloudy, turbid or if chemical analysis demonstrates an abnormality in color, blood, protein, leukocyte esterase or nitrite.

Note: Only elements that were seen microscopically will be appear on the report.

Non Squamous Epithelial	sediment	/LPF	None Seen		
Squamous Epithelial	sediment	/LPF	Male: None Female: None	Male: Few Female: Moderate	
Hyaline Cast	sediment	/LPF	0	5	
Granular Cast	sediment	/LPF	None Seen		
Renal Tubular Cells Cast	sediment	/LPF	None Seen		
RBC Cast	sediment	/LPF	None Seen		
WBC Cast	sediment	/LPF	None Seen		
Crystal Cast	sediment	/LPF	None Seen		
Microorganism Cast	sediment	/LPF	None Seen		
Fatty Cast	sediment	/LPF	None Seen		
Waxy Cast	sediment	/LPF	None Seen		
Mixed Cast	sediment	/LPF	None Seen		
WBC	sediment	/HPF	0	5	
RBC	sediment	/HPF	0	3	
Bacteria	sediment	/HPF	None	Few	
Yeast	sediment	/HPF	None Seen		
Trichomonas	sediment	/HPF	None Seen		
Calcium Oxalate Crystals	sediment	/HPF	None Seen	Few	
Triple Phosphate Crystals	sediment	/HPF	None Seen		
Uric Acid Crystals	sediment	/HPF	None Seen	Few	
Calcium Phosphate Crystals	sediment	/HPF	None Seen	Few	
Cystine Crystals	sediment	/HPF	None Seen		

Clinical Chemistry Urinalysis

Name of Test	Specimen Type	Units	Low	High	Critical
Leucine Crystals	sediment	/HPF	None Seen		
Tyrosine Crystals	sediment	/HPF	None Seen		
Atypical Crystals	sediment	/HPF	None Seen		
Amorphous Urate Crystals	sediment	/HPF	None Seen	Few	
Amorphous Phosphate Crystals	sediment	/HPF	None Seen	Few	
Oval Fat Bodies	sediment	/HPF	None Seen		
Cholesterol Crystals	sediment	/HPF	None Seen		
Sperm	sediment	/HPF	None Seen		

Clinical Chemistry Stool Tests

Name of Test	Specimen Type	Units	Low	High	Critical
Occult Blood	Stool		negative		
	Interpretive Data: Please note that this test cannot be considered to provide conclusive evidence for the presence or absence of gastrointestinal bleeding in view of limited sensitivity and specificity.				

Clinical Chemistry CSF Tests

Name of Test	Specimen Type	Units	Low	High	Critical
Glucose	CSF	mmol/L	0-6yr: 3.33	0-6yr: 4.44	
			>6yr: 2.22	>6yr: 3.89	
Interpretive Data: Spinal fluid (CSF) glucose concentration is about 60% that of plasma. Approximately 2-4 hours are required for the CSF glucose to reflect any change in plasma glucose.					
Protein, Total	CSF	g/L	Premature: 0.15	Premature: 1.30	
			Full term: 0.40	Full term: 1.20	
			0-1mth: 0.20	0-1mth: 0.80	
			>1mth: 0.15	>1mth: 0.45	

Clinical Chemistry Synovial Fluid Tests

Name of Test	Specimen Type	Units	Low	High	Critical
Synovial Analysis Crystals	synovial fluid		NA		

Notes:

Qualitative = Result Positive or Negative
 NA = No Reference Range