

CAMC Laboratory Reference Ranges

Chemistry Tests	Unit of Measure	Adult Male >18 years	Adult Female >18 years	Male >10 - 18 years	Female >10 - 18 years	Male/Female >2 - 10 years	Male/Female >1 month - 2 years	Male/Female 0 -1 month
Sodium	mmol/L	136-145	136-145	133-144	133-144	134-142	133-142	133-144
Potassium	mmol/L	3.5-5.1	3.5-5.1	3.5-5.0	3.5-5.0	3.5-4.9	3.5-5.4	3.5-5.9
Chloride	mmol/L	98-107	98-107	99-108	99-108	96-111	98-110	99-116
CO2	mmol/L	21-32	21-32	21-29	21-29	18-29	18-28	18-25
Glucose	mg/dL	74-106	74-106	70-123	70-123	67-138	65-123	43-135
BUN	mg/dL	7-18	7-18	4-18	4-18	4-18	1-18	1-14
Creatinine	mg/dL	0.7-1.3	0.6-1.0	0.3-0.9	0.3-0.9	0.1-0.7	0.1-0.5	0.1-1.0
Calcium	mg/dL	8.5-10.1	8.5-10.1	7.9-10.2	7.9-10.2	8.0-10.4	8.5-10.6	7.8-10.7
Phosphorus	mg/dL	2.5-4.9	2.5-4.9	2.7-5.9	2.7-5.9	3.2-6.2	3.0-7.8	4.1-9.0
Total Protein	g/dL	6.4-8.2	6.4-8.2	5.5-8.2	5.5-8.2	4.9-8.3	3.6-8.1	3.7-5.9
Albumin	g/dL	3.4-5.0	3.4-5.0	3.5-5.2	3.5-5.2	3.5-5.5	2.1-5.7	2.0-4.3
Total Bilirubin	mg/dL	0.2-1.0	0.2-1.0	0.2-1.2	0.2-1.2	0.2-0.9	0.2-2.2	0.3-3.9
Direct Bilirubin	mg/dL	0-0.2	0-0.2	0.0-0.6#	0.0-0.6#	0.0-0.6#	0.0-0.6#	0.0-0.6#
Uric Acid	mg/dL	3.5-7.2	2.6-6.0	1.9-8.9	1.9-8.9	1.2-5.9	1.7-6.5	1.5-6.1
Magnesium	mg/dL	1.6-2.6	1.6-2.6	1.5-2.2	1.5-2.2	1.5-2.2	1.5-2.2	1.5-2.2
Alk Phos	U/L	45-117	45-117	24-368	24-368	59-291	91-424	55-455
AST	U/L	15-37	15-37	7-35	7-35	11-47	11-57	17-53
ALT	U/L	16-61	13-56	6-24	6-24	5-39	9-45	1-25#
CK	U/L	39-308	26-192	25-261	25-261	47-315	21-265	33-373
LDH	U/L	87-241	84-246	86-271	86-271	141-337	130-437	163-881
Lipase	U/L	73-393	73-393	145-216**	145-226**	145-209**	144-199**	145-174**
Amylase	U/L	25-115	25-115	7-89	7-89	6-105	8-79#	2-16#
Iron	mcg/mL	65-175	50-170	25-153	25-153	14-164	9-165	23-187

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GGT	Refer to test information for specifics							
Therapeutic Drugs	Units	0-101 Years	0-4 Months	>4 Months-101 Years				
Theophylline	mg/L	10-20	6-11					
Phenytoin	mg/L	10-20						
Phenobarbital	mg/L	15-40						
Digoxin	ng/mL	0.9-2.2						
Valproic Acid	mg/L	50-100						
Lidocaine	mcg/mL	2.0-4.0						
Carbamazepine	mg/L	4-12						
Random Gentamicin	mg/L	1-8						
Peak Gentamicin	mg/L	5-8						
Trough Gentamicin	mg/L	1-1.9						

** Note: Pediatric ranges for Lipase taken from published date: *Pediatric Reference Intervals*, 5th Ed., edited by Soldin, Brugnara and Wong.

Chemistry normal reference ranges listed are established from data collected by and indirect sampling of appropriate age group populations in our geographical area. In a few instances reference ranges from published literature are used due to the lack of data for the particular analyte or due to patient bias. Ranges taken from published data are noted with a #.

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CBC Parameters	WBC	RBC	HGB	HCT	MCV	MCH	MCHC	RDW	PLTS	MPV	Lymphs	(Manual) Monos	(Auto) Monos	(Manual) Segs	(Auto) Segs	Bands	Eos	Basos
	x10 ³ /mcl	x10 ⁶ /mcl	g/dL	%	fl	pg	g/dL	%	x10 ³ /mcl	fl	%	%	%	%	%	%	%	%
Adult Male >18 years	4.8-10.8	4.40-6.20	14.0-16.0	41.0-53.0	80-100	27-32	32-36	12-15	140-450	6.6-9.3	20-35	0-13	0-8	50-70	50-78	0-8	0-4	0-2
Adult Female >18 years	4.8-10.8	4.20-5.40	12.0-15.0	36.0-47.0	80-100	27-32	32-36	12-15	140-450	6.6-9.3	20-35	0-13	0-8	50-70	50-78	0-8	0-4	0-2
Male >10-18 years	3.9-11.6	3.69-5.73	11.8-15.7	35.6-45.6	78-98	25.5-32.9	31.8-35.8	10.7-14.1	125-365	6.6-9.3	4-51	3-15	3-15	33-89	33-97	0-8	0-6	0-2
Female >10-18 years	3.9-12.7	3.64-5.36	11.2-15.5	32.9-46.2	78-98	25.8-33.7	32.0-35.4	10.7-13.9	126-404	6.6-10.1	8-49	3-13	3-13	38-84	38-92	0-8	0-6	0-2
Male/Female >2-10 years	4.2-13.2	3.96-5.36	11.2-14.7	34.0-43.8	76-90	25.1-30.7	32.3-34.8	10.7-14.0	163-461	6.4-9.2	7-55	3-15	3-15	32-83	32-91	0-8	0-7	0-4
Male/Female >1 month - 2 years	4.3-15.2	3.70-5.42	10.5-14.1	31.5-42.4	72-91	23.4-30.6	31.8-34.6	10.3-16.2	188-506	6.1-9.0	10-67	5-16	5-16	19-79	19-87	0-8	0-5	0-3
Male/Female >0-1 month	6.1-24.5	3.56-6.20	13.0-22.2	37.8-66.6	97-117	32.6-39.6	32.4-35.1	13.8-18.6	137-475	6.7-9.6	12-62	2-16	2-16	24-74	24-82	0-8	0-8	0-3

Arterial Blood Gases	pH	pCO2 mm/HG	PO2 mm/HG	O2 Sat %
Male	7.35-7.45	35-48	83-108	95-97
Female	7.35-7.45	32-45	83-108	95-97
Venous	7.32-7.45	38-54	25-40	60-80

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Urinalysis Parameters	Reference Ranges
Color	Straw-Amber
Clarity	Clear-Cloudy
Specific Gravity	1.010-1.020
pH	5.0-7.5
Protein (mg/dL)	Negative
Glucose (mg/dL)	Negative
Ketones (mg/dL)	Negative
Bilirubin	Negative
Blood	Negative
Nitrite	Negative
Urobilinogen	< 2.0 EU/dL
Leukocyte Esterase	Negative
White cells	0-5 / hpf
Squamous epithelial cells	<10 /hpf
Hyaline casts	0-2 / lpf
Red blood cells	0-2 /hpf
Bacteria	few / hpf