

Analyte	Units	Specimen	Age	Range	Gender
Acetaminophen	µg/mL	Serum/Plasma	0 - 150 years	<= 30	M/F
Albumin	g/dL	Serum/Plasma	0 - 2 years	3.5 - 4.9	M/F
			2 - 51 years	3.6 - 5.1	
			51 - 150 years	3.4 - 4.9	
AGR (Albumin/Globulin Ratio)	N/A	Serum/Plasma	0 - 150 years	1.0 - 2.5	M/F
Alkaline Phosphatase	IU/L	Serum Plasma	0 – 15 days	45 - 301	M/F
			15 - 30 days	111 - 464	Male
				55 - 383	Female
			1 month - 1 year	64 - 541	M/F
			1 - 9 years	131 - 387	Male
				131 - 389	Female
			9 - 12 years	140 - 458	Male
				101 - 414	Female
			12–15 years	89 - 443	Male
				57 - 271	Female
			15–17 years	62 - 274	Male
				45 - 138	Female
			17– 49 years	40 - 140	Male
				37 - 127	Female
Alanine Aminotransferase (ALT)	IU/L	Serum/Plasma	0 - 20 years	5 – 41	Male
				5 – 35	Female
			20 - 150 years	5 – 60	Male
				5 – 46	Female

Analyte	Units	Specimen	Age	Range	Gender
Ammonia	μmol/L	Serum/Plasma	0 - 150 years	<= 60	Male
				<= 51	Female
Amphetamine/Metamphetamine	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Amylase	IU/L	Serum/Plasma	0 - 31 days	<= 17	M/F
			1 month - 1 year	<= 33	
			1 - 4 years	<= 87	
			4 - 10 years	18 - 102	
			10 - 19 years	21 - 86	
			19 - 150 years	26 - 129	
Aspartate aminotransferase (AST)	IU/L	Serum/Plasma	0 - 1 year	21 - 73	Male
			1 - 6 years	20 - 51	
			6 - 150 years	12 - 47	
			0 - 1 year	21 - 73	Female
			1 - 3 years	22 - 55	
			3 - 6 years	20 - 45	
			6 - 9 years	16 - 43	
			9 - 150 years	11 - 40	
Barbiturate	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Benzodiazepine	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Beta hydroxybutyrate	mg/dL	Serum/Plasma	0 - 150 years	<= 2.8	M/F
HCGQ	mIU/mL	Serum/Plasma	0 - 150 years	< 5 Negative	Female
				5-25 Indeterminate	
				> 25 Positive	

Analyte	Units	Specimen	Age	Range	Gender
Pro-brain natriuretic peptide	pg/mL	Serum/Plasma	0 - 3 days	321 - 13,222	M/F
			3 - 11 days	263 - 6502	
			11 - 30 days	37 - 6502	
			1 month - 1 year	37 - 1000	
			1 - 2 years	39 - 675	
			2 - 6 years	23 - 327	
			6 - 14 years	10 - 242	
			14 - 18 years	6 - 207	
			18 - 74 years	<= 124	
			74 - 150 years	<= 449	
Blood Urea Nitrogen (BUN)	mg/dL	Serum/Plasma	0 - 12 months	4 – 19	M/F
			1 - 12 years	5 – 25	
			12 - 150 years	8 – 25	
	BUN/Creatinine Ratio		0 - 150 years	10 – 28	
	mg/dL	Body Fluid	0 - 150 years	N/A	
Calcium	mg/dL	Serum/Plasma	0 - 4 years	9.1 - 10.9	M/F
			4 - 150 years	8.8 - 10.4	
Carbamazepine	µg/mL	Serum/Plasma	0 - 150 years	4.0 - 12.0	M/F
Cortisol	ug/mL	Plasma/Serum	Random 0 - 150 years	2.5 - 19.5	M/F
			AM 0 - 150 years	4.8 - 19.5	
			PM 0 - 150 years	2.5 - 11.9	
Cholesterol	mg/dL	Serum/Plasma	0 - 18 years	< 170	M/F
			18 - 150 years	< 200	
			18 - 150 years	Chol/HDL Ratio: < 5.0	Male
				Chol/HDL Ratio: < 4.5	Female

Analyte	Units	Specimen	Age	Range	Gender
Carbon Dioxide (CO ₂)	mmol/L	Serum /Plasma	0 - 31 days	13 - 29	M/F
			1 month - 11 years	20 - 28	
			11 - 91 years	19 - 31	
			91 - 150 years	20 - 29	
Cocaine	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Creatine Kinase (CKI)	IU/L	Serum/Plasma	0 - 4 days	<= 1577	M/F
			4 - 30 days	<= 182	Male
				<= 133	Female
			1 months - 1 year	<=135	Male
			1 - 7 years	<= 159	Male
			7 - 10 years	<= 176	Male
			10 - 13 years	<= 216	Male
			13 - 19 years	<= 244	Male
			1 month - 19 years	<= 142	Female
			19 - 150 years	52 - 355	Male
				29 - 188	Female
Creatinine	mg/dL	Serum/Plasma	0 – 16 days	0.32 - 0.92	M/F
			16 days - 1 year	<= 0.36	
			1 – 4 years	<= 0.53	
			4 – 7 years	0.25 - 0.56	
			7 - 10 years	0.32 - 0.64	
			10 - 13 years	0.36 - 0.75	
			13 – 16 years	0.44 - 0.99	Male
				0.43 - 0.87	Female
			16 – 19 years	0.60 - 1.17	Male
				0.49 - 0.97	Female

Analyte	Units	Specimen	Age	Range	Gender
Creatinine	mg/dL	Serum/Plasma	19 – 150 years	0.68 - 1.37	Male
				0.51 - 1.08	Female
	mg/dL	Random Urine	0 - 150 years	19 - 280	M/F
	mL/min	Urine Creatinine Clearance	0 - 6 months	50 - 75	M/F
			6 - 18 months	50 - 110	M/F
			18 months - 150 years	85 - 125	Male
				75 - 115	Female
	g/day	24 hour Urine	0 - 8 years	0.1 - 0.7	M/F
			8 - 12 years	0.2 - 1.4	M/F
			12 - 17 years	0.3 - 1.9	M/F
	g/day	24 hour Urine	17 - 150 years	0.8 - 2.0	Male
				0.6 - 1.8	Female
	ml/min/ 1.73m2	Creat GFR	19 - 150 years	> 60	M/F
C-Reactive Protein (CRP)	mg/L	Serum/Plasma	N/A	< 5.0	M/F
Cyclosporine	ng/mL	Serum/Plasma	0 - 150 years	100 - 300	M/F
Digoxin	ng/mL	Serum/Plasma	0 - 150 years	Therapeutic range: 0.8 - 2.0	M/F
Digoxin, Free	ng/mL	Serum/Plasma	0 - 150 years	0.6 - 1.5	M/F
Direct Bilirubin	mg/dL	Serum/Plasma	0 - 31 days	<= 0.6	M/F
			1 month - 150 years	<= 0.3	
Estradiol	pg/mL	Serum/Plasma	0 - 30 days	<= 96	M/F
			1 month - 10 years	<= 19	
			10 - 14 years	<= 68	Female
			14 - 19 years	<= 249	
			19 - 150 years	<= 533	
			10 - 19 years	<= 37	Male
			19 - 150 years	<= 43	

Analyte	Units	Specimen	Age	Range	Gender
Ethanol (ETOH)	mg/dL	Serum/Plasma	0 - 150 years	<= 10	M/F
Ethylene Glycol	mg/dL	Serum only	0 - 150 years	< 10	M/F
Fentanyl	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Ferritin	ng/mL	Serum/Plasma	0 - 150 years	25 - 506	Male
			0 - 51 years	11 - 230	Female
			51 - 150 years	14 - 313	Female
Folate	ng/mL	Serum/Plasma	0 - 150 years	>= 4	M/F
FSH	mIU/mL	Serum/Plasma	0 - 1 year	1.6 - 19.0	Female
				0.1 - 3.2	Male
			1 - 9 years	0.7 - 5.8	Female
				0.2 - 2.1	Male
			9 - 12 years	0.5 - 7.6	Female
				0.4 - 4.2	Male
			12 - 19 years	0.9 - 9.1	Female
				0.9 - 7.1	Male
			19 - 150 years	1.5 - 12.4	Female
				1.7 - 21.5	Male
FT4	ng/mL	Serum/Plasma	0 - 31 days	0.8 - 2.2	M/F
			1 - 7 months	0.8 - 1.8	
			7 months - 1 year	0.8 - 1.6	
			1 - 7 years	0.9 - 1.4	
			7 - 12 years	0.9 - 1.6	
			12 - 18 years	0.9 - 1.5	
			18 - 150 years	0.8 - 1.7	

Analyte	Units	Specimen	Age	Range	Gender
Gentamycin	ug/mL	Serum/Plasma	0 - 150 years	Random <= 10	M/F
			0 - 18 yrs	Trough 0.5 - 2.0	
			18 - 150 yrs	Trough 1.0 - 2.0	
			0 - 150 years	Peak 5.0-10.0	
GGT	IU/L	Serum/Plasma	0 - 6 months	12 - 122	Male
				15 - 132	Female
			6 months - 1 year	<= 39	M/F
			1 - 13 years	3 - 22	Male
				4 - 31	Female
			13 - 19 years	<= 42	Male
				4 - 29	Female
			19 - 150 years	5 - 80	Male
				5 - 60	Female
Glucose	mg/dL	Random	0 - 1 day	40 - 60	M/F
			1 day - 1 month	50 - 80	
			1 month - 10 years	60 - 100	
			10 - 60 years	70 - 106	
			60 - 90 years	70 - 115	
			90 - 150 years	70 - 121	
		Serum/Plasma fasting	0 - 31 days	50 - 80	
			1 month - 10 years	60 - 99	
			10 - 150 years	70 - 99	
		Gestational	10 - 150 years	<= 134	
		Post-prandial	0 - 150 years	<= 199	
		CSF	0 - 1 year	60 - 80	
			1 - 150 years	40 - 70	
HGB A1C	%	Serum/Plasma	0 - 150 years	<= 5.6	M/F

Analyte	Units	Specimen	Age	Range	Gender
High Density Lipoprotein Cholesterol (HDLc)	mg/dL	Serum/Plasma	0 - 18 years	> 45	M/F
			18 - 150 years	> 39	Male
				> 49	Female
Intra-operative Parathyroid Hormone (iPTH)	pg/mL	Plasma	1 - 150 years	15 - 65	M/F
Iron	µg/dL	Serum/Plasma	0 - 6 years	22 - 136	M/F
			6 - 15 years	28 - 136	
			15 - 20 years	34 - 162	
			20 - 150 years	40 - 190	Male
				35 - 175	Female
Lactic Acid	mmol/L	Venous	0 - 150 years	0.5 - 2.2	M/F
		Arterial	0 - 150 years	0.5 - 1.7	M/F
Lactate Dehydrogenase (LDI)	IU/L	Serum/ Plasma	0 - 20 days	225 - 600	M/F
			20 days - 15 years	120 - 300	
			15 - 150 years	135 - 225	Male
				135 - 214	Female
Lamotrigine	µg/mL	Serum/Plasma	0 - 150 years	2.5 - 15.0	M/F
Levitracetam	µg/mL	Serum/Plasma	0 - 150 years	12 - 46	M/F
Lipase	IU/L	Serum/Plasma	0 - 150 years	16 - 63	M/F
Lithium	mmol/L	Serum/Plasma	0 - 150 years	0.6 – 1.2	M/F
Low Density Lipoprotein Cholesterol (LDL)	mg/dL	Serum/Plasma	0 - 18 years	>= 109	M/F
			18 - 150 years	>= 99	
Electrolyte chloride (Cl)	mmol/L	Serum/Plasma	0 - 150 years	95 - 108	M/F
	mmol/g	Random Urine, Normalized to Creat	0 - 150 years	30 - 250	Male
				40 - 330	Female
	mmol/day	24 hour Urine	0 - 1 month	2 – 10	M/F
			1 month - 6 years	15 - 40	

Analyte	Units	Specimen	Age	Range	Gender
Electrolyte chloride (Cl)	mmol/day	24 hour Urine	6 - 11 years	36 - 110	Male
				18 - 74	Female
			11 - 15 years	64 - 176	Male
				36 - 173	Female
			15 - 61 years	110 - 250	M/F
			61 - 150 years	95 - 195	M/F
Electrolyte potassium (K)	mmol/L	Serum/Plasma	0 - 8 days	3.2 - 5.5	M/F
			8 - 31 days	3.4 - 6.0	
			1 - 7 months	3.5 - 5.6	
			7 months - 1 year	3.5 - 6.1	
			1 - 150 years	3.6 - 5.3	
	mmol/g	Random Urine, Normalized to Creat	0 - 150 years	15 - 95	Male
				20 - 150	Female
	mmol/day	24hr Urine	7 - 11 years	17 - 54	Male
				8 - 37	Female
			11 - 15 years	22 - 57	Male
				18 - 58	Female
Electrolyte sodium (NA)	mmol/L	Serum/Plasma	0 - 150 years	134 - 147	M/F
	mmol/g	Random Urine, Normalized to Creat	0 - 150 years	40 - 278	Male
				29 - 226	Female
	mmol/day	24 hr Urine	6 - 10 years	41 - 115	Male
			7 - 11 years	20 - 69	Female
			10 - 14 years	63 - 177	Male
			11 - 15 years	48 - 168	Female
			14 - 150 years	40 - 220	Male
			15 - 150 years	27 - 287	Female

Analyte	Units	Specimen	Age	Range	Gender
Anion Gap for Electrolytes	N/A	All Specimen Types	0 - 150 years	4 – 16	M/F
Magnesium	mg/dL	Plasma/Serum	0 - 150 years	1.5 - 2.5	M/F
Methadone	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Opiate	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F
Phenobarbital	µg/mL	Plasma/Serum	0 - 150 years	10.0 - 30.0	M/F
Phenytoin	ug/mL	Plasma/Serum	0 - 150 years	10.0 - 20.0	M/F
Phosphorus	mg/dL	Serum/Plasma	0 - 2 years	3.2 - 7.3	M/F
			2 - 5 years	3.6 - 6.5	
			5 - 8 years	3.6 - 6.1	
			8 - 11 years	3.6 - 6.0	
			11 - 14 years	3.5 - 5.9	
			14 - 17 years	3.2 - 5.8	Male
				3.2 - 5.3	Female
			17 - 19 years	2.7 - 5.9	Male
				2.8 - 5.0	Female
			19 - 150 years	2.4 - 4.8	M/F
Prealbumin	mg/dL	Serum/Plasma	0 - 150 years	20 - 40	M/F
Procalcitonin, respiratory	ng/mL	Serum/Plasma	0 - 150 years	<= 0.24	M/F
Procalcitonin, sepsis	ng/mL	Serum/Plasma	0 - 150 years	<= 0.49	M/F
Progesterone	ng/mL	Serum/Plasma	0 - 30 days	<= 242	M/F
			1 month - 12 years	<= 0.9	Female
			12 - 19 years	<= 12.0	
			19 - 150 years	<=14.5	

Analyte	Units	Specimen	Age	Range	Gender
Progesterone	ng/mL	Serum/Plasma	1 month - 19 years	<= 0.9	Male
			19 - 150 years	<= 0.2	
Prolactin	ng/mL	Serum/Plasma	0 - 30 days	1.1 - 470.0	M/F
			1 - 12 months	5.2 - 60.0	
			1 - 19 years	3.0 - 25.0	
			19 - 150 years	4.8 - 23.3	Female
				4.0 - 15.2	Male
Salicylate	mg/dL	Serum/Plasma	0 - 150 years	0 - 10	M/F
T3	ng/dL	Serum/Plasma	0 - 1 year	126 - 231	M/F
			1 - 12 years	111 - 195	
			12 - 16 years	87 - 177	Female
				90 - 179	Male
			16 - 19 years	81 - 155	M/F
			19-150 years	80 - 200	
T3, Free	pg/mL	Serum/Plasma	0 - 30 days	2.7 - 8.5	M/F
			1 - 12 months	3.4 - 5.6	
			1 - 14 years	3.0 - 5.1	
			14 - 19 years	3.3 - 5.3	
			19 - 150 years	2.0 - 4.4	
T4	µg/dL	Serum/Plasma	0 - 4 years	5.9 - 13.1	M/F
			4 - 14 years	5.4 - 10.1	
			14 - 19 years	5.8 - 11.0	Female
				5.3 - 9.2	Male
			19 - 150 years	4.5 - 11.7	M/F
TCA	ng/mL	Serum only	0 - 150 years	<= 299	M/F
Tetrahydrocannabinol (cannabinoids, THC)	ng/mL	Urine	N/A	Presumptive Positive/ Negative	M/F

Analyte	Units	Specimen	Age	Range	Gender
Theophylline	ug/mL	Serum/Plasma	0 – 3 months	5.0 - 12.0	M/F
			3 months - 150 years	10.0 – 20.0	
TIBC	ug/dL	Serum/Plasma	0 - 150 years	250.0 - 435.0	M/F
Tobramycin	ug/mL	Serum/Plasma	0 - 150 years	Random <= 8.0	M/F
				Trough 1.0 - 2.0	
				Peak 5.0 - 8.0	
Total Bilirubin	mg/dL	Serum/Plasma	0 - 31 days	1.5 – 11.7	M/F
			1 month - 150 years	0.2 – 1.3	
Total Protein	g/dL	Serum/Plasma	0 – 31 days	4.1 – 6.3	M/F
			31 days – 6 months	4.7 – 6.7	
			6 months – 1 year	5.5 – 7.0	
		Serum/Plasma	1 – 18 years	5.4 – 7.6	
			18 – 150 years	6.0 – 8.0	
Transferrin	mg/dL	Serum/Plasma	0 - 4 days	130 - 275	M/F
			4 days - 3 months	130 - 360	
			3 months - 16 years	203 - 360	
			16 years - 150 years	200 - 390	
Triglycerides	mg/dL	Serum/Plasma	0 - 9 years	< 75	M/F
			9 - 19 years	< 90	
			19 - 150 years	< 150	
High sensitive Troponin Gen 5	ng/L	Serum/Plasma	0 - 150 years	<= 19	Male
				<= 11	Female
Thyroid Stimulating Hormone (TSH)	μIU/mL	Serum/Plasma	0 - 4 days	3.20 - 35.00	M/F
			4 days - 1 month	1.70 - 9.10	
			1 month - 1 years	0.80 - 8.20	
			1 - 6 years	0.60 - 7.40	
			6 - 11 years	0.50 - 5.40	

Analyte	Units	Specimen	Age	Range	Gender
Thyroid Stimulating Hormone (TSH)	μIU/mL	Serum/Plasma	11 - 20 years	0.30 - 4.00	M/F
			20 - 150 years	0.45 - 4.50	
Uric Acid/ Rasburicase Uric Acid (RURIC)	mg/dL	Serum/Plasma	0 - 15 days	2.7 - 12.6	M/F
			15 days - 1 years	1.5 - 6.2	
			1 - 10 years	2.3 - 5.3	Male
				2.3 - 5.6	Female
			10 - 13 years	2.6 - 6.9	Male
				2.7 - 6.5	Female
			13 - 18 years	3.3 - 8.0	Male
				2.7 - 6.5	Female
			18 - 150 years	3.7 - 7.7	Male
				2.5 - 6.2	Female
Urinary/CSF Protein	mg/dL	CSF	0 - 31 days	20.0 - 80.0	M/F
			1 month - 150 years	15.0 - 40.0	
	mg/g of creat	Random Urine, Normalized to Creat	0 - 150 years	15 - 170	Male
				15 - 220	Female
	mg/day	24 hr Urine	0 - 150 years	< 138	M/F
Valproic Acid	μg/mL	Plasma/Serum	0 - 150 years	50 – 100	M/F
Vancomycin	ug/mL	Serum/Plasma	0 - 150 years	Trough: 10 - 20 Peak: 20 - 60 Random: ≤ 60	M/F
Alpha-Fetoprotein (AFP)	ng/mL	Serum/Plasma	0 - 30 days	≤ 1210.0	M/F
			1 - 6 months	48.0 - 1210.0	
			6 - 12 months	3.5 - 69.0	
			1 - 19 years	≤ 7.0	
			19 - 150 years	≤ 8.3	

Analyte	Units	Specimen	Age	Range	Gender
Carcinoembryonic Antigen (CEA)	ng/mL	Serum/Plasma	0 - 7 days	8.1 - 62.0	M/F
			7 days - 2 years	<= 4.7	
			2 - 19 years	<= 2.6	
			19 - 40 years	<= 3.8	
			40 - 150 years	<= 5.0	
CA 125	IU/mL	Serum/Plasma	0 - 4 months	2.4 - 22.0	Female
			4 months - 5 years	7.7 - 33.0	
			5 - 11 years	4.7 - 30.0	
			11 - 19 years	5.9 - 39.0	
			19 - 150 years	<= 38.1	
CA15-3	IU/mL	Serum/Plasma	0 - 7 days	3.4 - 24.0	M/F
			7 days - 12 months	4.9 - 33.0	
			1 - 19 years	3.9 - 21.0	
			19 - 150 years	<= 25	
CA 19-9	IU/mL	Serum/Plasma	0 - 12 months	<= 64	M/F
			1 - 19 years	<= 41	
			19 - 150 years	<= 35	
Free Prostate Specific Antigen (FPSA)	ng/mL	Serum/Plasma	N/A	No Reference Range % FPSA >25	Male
Total Prostate Specific Antigen (TPSA)	ng/mL	Serum/Plasma	N/A	< 4.00	Male
Tacrolimus	ng/mL	Serum/Plasma	0 - 150 years	9.8 - 19.4	M/F
Testosterone	ng/dL	Serum/Plasma	0 - 6 months	Not recommended for Females or children under 18 yrs	Female
			6 - 12 months		
			1 - 19 years		
			19 - 50 years	8 - 48	
			50 - 150 years	3 - 41	

Analyte	Units	Specimen	Age	Range	Gender
Testosterone	ng/dL	Serum/Plasma	0 - 6 months	5.8 - 548.0	Male
			6 months - 11 years	< 3	
			11 - 15 years	<= 563	
			15 - 19 years	49 - 769	
			19 - 50 years	249 - 836	
			50 - 150 years	193 - 740	
Vitamin B12	pg/mL	Serum/Plasma	0 - 150 years	232 - 1245	M/F
Vitamin D	ng/mL	Serum/Plasma	0 - 150 years	20 - 150	M/F
Osmolality	mOsm/kg	Serum/Plasma	0 - 1 month	266 - 295	M/F
			1 month - 61 years	275 - 295	
			61 - 150 years	280 - 301	
		Urine	0 - 18 years	50 - 1400	
			18 - 150 years	300 - 900	
NOTE: Body Fluids have no established reference ranges					