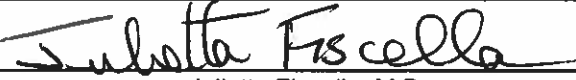


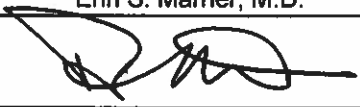


Standard Reference Ranges and Alert Values

**Document Title: Standard Reference Ranges and Alert Values**

Author:	Effective Date:	Supersedes Procedure #
Jessica Wahl	2/15/2016	UR.CP.CS.pti.0004.0001

Revised By:	Date Revised	Effective (adopted) Date:
Lisa Musial	2/10/2021	

Approval Signature	Approval Date
 Julieta Fiscella, M.D.	3/8/2021
 W. Richard Burack, M.D., PhD	2/28/21
 Erin S. Marnier, M.D.	02-mar-2021
 Bradley Turner, M.D.	2/25/2021


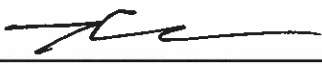
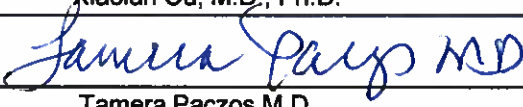
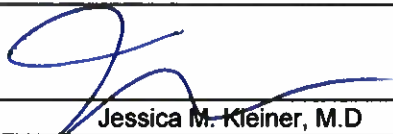
Distributed to	# of Copies	Distributed to	# of Copies
<a href="http://www.testmenu.com/rochester">www.testmenu.com/rochester</a>	1		

Standard Reference Ranges and Alert Values

**Document Title: Standard Reference Ranges and Alert Values**

Author:	Effective Date:	Supersedes Procedure #
Jessica Wahl	2/15/16	UR.CP.CS.pti.0004.0001

Revised By:	Date Revised	Effective (adopted) Date:
Lisa Musial	2/10/2021	

Approval Signature	Approval Date
 Dirk M. Bernold, M.D.	3/22/21
 Xiaolan Ou, M.D., Ph.D.	2/25/21
 Tamera Paczos M.D.	3/3/2021
 Jessica M. Kleiner, M.D.	3/22/21

Distributed to	# of Copies	Distributed to	# of Copies
www.testmenu.com/rochester	1		

Standard Reference Ranges and Alert Values

**REVISION HISTORY**

Procedure #	Revision Date	Reason for Revision
UR.CP.CS.pti.0004.0002	12-8-17	Removed Clinical Trials information. Updated Reference Range for: PT,INR, Protein C, Protein S, Antithrombin III, D-Dimer, Urinalysis with Microscopic for Bacteria, Squamous Epith and Trans Epith, VB12, Progesterone, Homocysteine. Updated test performed locations for Red Creek Lab tests, Indirect Bilirubin and Transferrin Saturation.
UR.CP.CS.pti.0004.0003	2-26-19	Updated list of medical directors, removed Fetten and added Paczos and Ou. Updated Reference Ranges for: PT, INR, troponin hs, MCH, MCHC, and IG # for hematology, therapeutic, factor VIII von willebrand activity, factor X chromogenic, activated protein C resistance, thrombin time, RBC and WBC for macroscopic urines, Oval fat for Urine with microscopic, added csf/misc fluid reference ranges.
UR.CP.CS.pti.0004.0004	1/16/2020	Updated medical directors, removed Dr. Blumberg, added Dr. Turner and Dr. Muchnik. Updated testing locations appropriately for Bailey Rd (Y).
UR.CP.CS.pti.0004.0005	2/3/2021	Updated medical directors: removed Drs Muchnik and Corsetti, added Dr. Marner. Mary Johnson and Barbara Beck performed review and edits to any reference ranges as needed.



(S) Strong Memorial Hospital - 601 Elmwood Ave. Rochester, NY 14642

(Y) UR Central Lab - 211 Bailey Rd. West Henrietta, NY 14586

(H) Highland Hospital - 990 South Ave. Rochester, NY 14620

(B) Strong West - 156 West Ave. Brockport, NY 14420

**Chemistry Reference Ranges**

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Albumin (Serum or Plasma)	Up to 200Y	3.5 - 5.2	3.5 - 5.2	g/dL			S, Y, H, B
Alkaline Phosphatase (Serum or Plasma)	0 - 5D	110 - 300	110 - 300	U/L			S, Y, H, B
	6D - 3Y	145 - 320	145 - 320	U/L			
	4Y - 6Y	150 - 380	150 - 380	U/L			
	7Y - 9Y	175 - 420	175 - 420	U/L			
	10Y - 11Y	130 - 560	135 - 530	U/L			
	12Y - 13Y	105 - 420	200 - 495	U/L			
	14Y - 15Y	70 - 230	130 - 525	U/L			
	16Y - 19Y	50 - 130	65 - 260	U/L			
≥ 20Y	35 - 105	40 - 130	U/L				
Alpha 1 Antitrypsin (AAT) (Serum)	Up to 200Y	90 - 200	90 - 200	mg/dL			Y
ALT (SGPT) (Serum or Plasma)	Up to 200Y	0 - 35	0 - 50	U/L			S, Y, H, B
Ammonia (Plasma)	Up to 200Y	10 - 47	10 - 47	umol/L			S, H, B
Amylase (Serum)	Up to 200Y	28 - 100	28 - 100	U/L			S, Y, H, B
Anion Gap	Up to 200Y	7 - 16	7 - 16				S, Y
AST(SGOT) (Serum or Plasma)	Up to 200Y	0 - 35	0 - 50	U/L			S, Y, H, B
C3 (Serum)	Up to 200Y	90 - 180	90 - 180	mg/dL			Y
C4 (Serum)	Up to 200Y	10 - 40	10 - 40	mg/dL			Y
Calcium (Serum or Plasma)	0 - 10Y	9.0 - 10.8	9.0 - 10.8	mg/dL	≤ 6.5	≥ 13.0	S, Y, H, B
	11Y - 24Y	9.0 - 10.4	9.3 - 10.5	mg/dL	≤ 6.5	≥ 13.0	
	25Y - 44Y	8.8 - 10.2	9.0 - 10.3	mg/dL	≤ 6.5	≥ 13.0	
	≥ 45Y	8.6 - 10.2	8.6 - 10.2	mg/dL	≤ 6.5	≥ 13.0	
Chloride (Serum or Plasma)	Up to 200Y	96 - 108	96 - 108	mmol/L	≤ 80	≥ 120	S, Y, H, B

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Cholesterol (Serum)	Desirable	< 200	< 200	mg/dL			S, Y, H, B
	Borderline High	200 - 239	200 - 239	mg/dL			
	High	> 240	> 240	mg/dL			
CO2 (Serum or Plasma)	Up to 200Y	20 - 28	20 - 28	mmol/L	≤ 10	≥ 40	S, Y, H, B
Creatine Kinase (Serum)	Up to 200Y	26 - 192	39 - 308	U/L			S, Y, H, B
Creatinine (Serum or Plasma)	0D - 4D	0.30 - 1.00	0.30 - 1.00	mg/dL			S, Y, H, B
	5D - 11Y	0.20 - 0.70	0.20 - 0.70	mg/dL			
	12Y - 20Y	0.50 - 1.00	0.50 - 1.00	mg/dL			
	≥ 21Y	0.51 - 0.95	0.67 - 1.17	mg/dL			
Creatinine Clearance	Up to 200Y	87 - 107	107 - 139	mL/min			S, Y, H
CRP (Serum or Plasma)	Up to 200Y	0 - 10	0 - 10	mg/L			S, Y, H, B
CRP, High Sensitivity (Serum)	Up to 200Y						S, Y, B
	Low Risk	< 1	< 1	mg/L			
	Average Risk	1 - 3	1 - 3	mg/L			
	High Risk	> 3	> 3	mg/L			
Direct Bilirubin (Serum or Plasma)	0D - 6D	0 - 0.6	0 - 0.6	mg/dL			S, Y, H, B
	≥ 7D	0 - 0.3	0 - 0.3	mg/dL			
Ferritin (Serum)	Up to 200Y	10 - 120	20 - 250	ng/mL			S, Y, H
Folate (Serum)	Up to 200Y	≥ 4.6	≥ 4.6	ng/mL			Y, H
GGT (Serum)	Up to 200Y	5 - 36	8 - 61	U/L			S, Y, H, B
Glucose (Serum or Plasma)	0 - 1D	36 - 110	36 - 110	mg/dL	≤ 25	≥ 200	S, Y, B, H(serum only)
	2D-7D	47 - 117	47 - 117	mg/dL	≤ 40	≥ 200	
	≥ 8D	60 - 99	60 - 99	mg/dL	≤ 50	≥ 500	
HDL (Serum)	Low	< 40	< 40	mg/dL			S, Y, H
	High	> 60	> 60	mg/dL			
HGB A1C (EDTA)	Up to 200Y	≤ 5.6	≤ 5.6	%			Y
Homocysteine (EDTA on ice)	Up to 200Y	0 - 15	0 - 15	umol/L			Y
Indirect Bilirubin (Serum or Plasma)	Up to 200Y	0.1 - 1.0	0.1 - 1.0	mg/dL			S, Y, H, B
Insulin (Serum)	Up to 200Y	3 - 25	3 - 25	uIU/mL			Y
Iron (Serum)	Up to 200Y	34 - 165	45 - 170	ug/dL			S, Y, H, B

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Lactate Dehydrogenase (LDH,LD)(Serum or Plasma)	Up to 200Y	118 - 225	118 - 225	U/L			S, Y, H
LDL (Calculated and Direct) (Serum)	Optimal	< 100	< 100	mg/dL			S, Y, H
	Near or above optimal	100 - 129	100 - 129	mg/dL			
	Borderline High	130 - 159	130 - 159	mg/dL			
	High	160 - 189	160 - 189	mg/dL			
	Very High	> 189	> 189	mg/dL			
Lipase (Serum)	Up to 200Y	13 - 60	13 - 60	U/L			S, Y, H, B
Magnesium (Serum or Plasma)	Up to 200Y	1.6 - 2.5	1.6 - 2.5	mg/dL	≤ 1.0	≥ 4.8	S, Y, H, B
NT-Pro BNP (Serum)	0 - 49Y	0 - 450	0 - 450	pg/mL			S, Y, H, B
	50 - 75Y	0 - 900	0 - 900	pg/mL			
	≥ 76Y	0 - 1800	0 - 1800	pg/mL			
Phosphorus (Serum or Plasma)	0D - 1D	4.2 - 8.5	4.2 - 8.5	mg/dL	≤ 1.1	≥ 9.0	S, Y, H, B
	2D - 12Y	4.0 - 6.5	4.0 - 6.5	mg/dL	≤ 1.1	≥ 9.0	
	≥ 13Y	2.7 - 4.5	2.7 - 4.5	mg/dL	≤ 1.1	≥ 9.0	
Potassium (plasma)	0-7D	3.2 - 5.5	3.2 - 5.5	mmol/L	≤ 2.8	≥ 7.0	S, Y, B
	8D-1M	3.4 - 6.0	3.4 - 6.0	mmol/L	≤ 2.8	≥ 7.0	
	2M-5M	3.5 - 5.6	3.5 - 5.6	mmol/L	≤ 2.8	≥ 7.0	
	6M-1Y	3.5 - 6.1	3.5 - 6.1	mmol/L	≤ 2.8	≥ 7.0	
	≥2Y	3.3 - 4.6	3.3 - 4.6	mmol/L	≤ 2.8	≥ 6.2	
Prealbumin (Serum)	Up to 200Y	20 - 40	20 - 40	mg/dL			Y
Sodium (Serum, Plasma)	Up to 200Y	133 - 145	133 - 145	mmol/L	≤ 120	≥ 160	S, Y, H, B
TIBC (Serum-calc)	Up to 200Y	250 - 450	250 - 450	ug/dL			S, Y, H
Total Billirubin (Serum, Plasma)	0D-1D	2.0 - 6.0	2.0 - 6.0	mg/dL		≥ 15	S, Y, H, B
	2D	6.0 - 7.0	6.0 - 7.0	mg/dL		≥ 15	
	3D	4.0 - 12.0	4.0 - 12.0	mg/dL		≥ 15	
	4D-7D	0.0 - 1.4	0.0 - 1.4	mg/dL		≥ 15	
	≥ 8D	0.0 - 1.2	0.0 - 1.2	mg/dL			
Total Protein (Serum, Plasma)	Up to 200Y	6.3 - 7.7	6.3 - 7.7	g/dL			S, Y, H, B
Transferrin (Serum)	Up to 200Y	200 - 360	200 - 360	mg/dL			S, Y
Transferrin Saturation %	Up to 200Y	15 - 50	20 - 55	%			S, Y

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Triglycerides (Serum, Plasma)	Normal	< 150	< 150	mg/dL			S, Y, H
	Borderline High	150 - 199	150 - 199	mg/dL			
	High	200 - 499	200 - 499	mg/dL			
	Very High	> 500	> 500	mg/dL			
Troponin-T, High Sensitivity (Plasma)	Up to 200Y	0 - 13	0 - 21	ng/L		Females: $\geq$ 70 ng/L - Consistent with Myocardial injury Males: $\geq$ 110 ng/L - Consistent with Myocardial injury	S, H, B
Urate (Serum)	Up to 200Y	2.7 - 6.8	3.9 - 9.0	mg/dL			S, Y, H, B
Urea Nitrogen (Serum, Plasma)	Up to 200Y	6 - 20	6 - 20	mg/dL			S, Y, H, B
Vitamin B12 (Serum)	Up to 200Y	232 - 1245	232 - 1245	pg/mL			Y, H

### Endocrinology

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Estradiol (Serum)	Tanner Stage 1	5 - 20	5 - 11	pg/mL			Y
	Tanner Stage 2	10 - 24	5 - 16	pg/mL			
	Tanner Stage 3	7 - 60	5 - 25	pg/mL			
	Tanner Stage 4	21 - 85	10 - 36	pg/mL			
	Tanner Stage 5	34 - 170	10 - 36	pg/mL			
	Follicular Phase	13 - 166		pg/mL			
	Ovulation Phase	86 - 498		pg/mL			
	Luteal Phase	44 - 211		pg/mL			
	Post Menopausal	0 - 55		pg/mL			
	Pregnancy 1st trimester	> 214		pg/mL			
	Children (1-10 years)	6 - 27	0 - 20	pg/mL			
	Up to 200Y		8 - 43	pg/mL			

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
T4 (Serum)	0 - 1Y	9.7 - 19.1	9.7 - 19.1	microg/dL			Y, H
	2Y - 6Y	9.2 - 15.1	9.2 - 15.1	microg/dL			
	7Y - 12Y	7.6 - 13.7	7.6 - 13.7	microg/dL			
	13Y - 17Y	6.4 - 13.4	6.4 - 13.4	microg/dL			
	≥ 18Y	4.6 - 12.0	4.6 - 12.0	microg/dL			
TSH (Serum)	0 - 1Y	1.36 - 8.8	1.36 - 8.8	micro IU/mL			S, Y, H, B
	2Y - 6Y	0.85 - 6.5	0.85 - 6.5	micro IU/mL			
	7Y - 12Y	0.28 - 4.3	0.28 - 4.3	micro IU/mL			
	≥ 13Y	0.27 - 4.20	0.27 - 4.20	micro IU/mL			
BHCG (Serum)	Female non-pregnant, pre-menopause: 0 - 1 mIU/mL						S, Y, H, B
	Female post menopause: 0 - 7 mIU/mL						
	Male: 0 - 2 mIU/mL						
Pregnancy, Serum	Negative						S, H, B
Pregnancy, Urine	Negative						S, H, B
Testosterone (Serum)	20 - 49Y	8 - 48	249 - 836	ng/dL			Y
	≥ 50Y	3 - 41	193 - 740	ng/dL			
	Tanner Stage 1	< 3 - 6	< 3	ng/dL			
	Tanner Stage 2	< 3 - 10	< 3 - 432	ng/dL			
	Tanner Stage 3	< 3 - 24	65 - 778	ng/dL			
	Tanner Stage 4	< 3 - 27	180 - 763	ng/dL			
	Tanner Stage 5	5 - 38	188 - 882	ng/dL			
LH (Serum)	Up to 200Y	see below	1.7 - 8.6	mIU/mL			Y, H
	Follicular Phase	2.4 - 12.6	N/A	mIU/mL			
	Ovulation Phase	14.0 - 95.6	N/A	mIU/mL			
	Luteal Phase	1.0 - 11.4	N/A	mIU/mL			
	Postmenopause	7.7 - 58.5	N/A	mIU/mL			
FSH (Serum)	Up to 200Y	see below	1.5 - 12.4	mIU/mL			Y, H
	Follicular Phase	3.5 - 12.5	N/A	mIU/mL			
	Ovulation Phase	4.7 - 21.5	N/A	mIU/mL			
	Luteal Phase	1.7 - 7.7	N/A	mIU/mL			
	Postmenopause	25.8 - 134.8	N/A	mIU/mL			



Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Progesterone (Serum)	Up to 200Y	see below	< 0.1 - 0.1	ng/mL			Y, H
	Follicular Phase	< 0.1 - 0.9	N/A	ng/mL			
	Ovulation Phase	0.1 - 12.0	N/A	ng/mL			
	Luteal Phase	1.8 - 23.9	N/A	ng/mL			
	Postmenopause	< 0.1 - 0.1	N/A	ng/mL			
	Pregnancy 1st Trimester	11.0 - 44.3	N/A	ng/mL			
	Pregnancy 2nd Trimester	25.4 - 83.3	N/A	ng/mL			
	Pregnancy 3rd Trimester	58.7 - 214	N/A	ng/mL			
Prolactin (Serum)	Non-Pregnant	4.8 - 23.3		ng/mL			Y, H
	Up to 200Y		4.0 - 15.2	ng/mL			
Dehydroepiandrosterone Sulfate (DHEA Sulfate) (Serum)	Tanner Stage 1	21 - 82	15 - 108	ug/dL			Y
	Tanner Stage 2 - 3	32 - 211	30 - 183	ug/dL			
	Tanner Stage 4	73 - 275	94 - 336	ug/dL			
	Tanner Stage 5	95 - 449	148 - 437	ug/dL			
	0 - 24Y	148 - 407	211 - 492	ug/dL			
	25Y - 34Y	99 - 340	160 - 449	ug/dL			
	35Y - 44Y	61 - 337	89 - 427	ug/dL			
	45Y - 54Y	35 - 256	44 - 331	ug/dL			
	55Y - 64Y	19 - 205	52 - 295	ug/dL			
	65Y - 74Y	9 - 246	34 - 249	ug/dL			
≥ 75Y	12 - 154	16 - 123	ug/dL				

### Urine Chemistries

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Bilirubin, UR	Up to 200Y	Negative (semiquantitative, < 0.5)		mg/dL			S
Urobilinogen, UR	Up to 200Y	Negative (semiquantitative, < 2)		mg/dL			S
Calcium, UR 24hr	Low CA Diet:	0 - 150	0 - 150	mg/24hr			Y, H
	High CA diet	240 - 300	240 - 300	mg/24hr			
	Up to 200Y	100 - 240	100 - 240	mg/24hr			
Chloride, 24hr Urine	Up to 200Y	110 - 250	110 - 250	mmol/24hr			S, Y, H

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Creatinine, UR random	Up to 200Y	20 - 300	20 - 300	mg/dL			S, Y, H
Creatinine, UR 24 hr	Up to 200Y	600 - 1600	800 - 1800	mg/24hr			
Microalbumin, random	Up to 200Y	0.0 - 29.9	0.0 - 29.9	ratio			Y, H
Microalbumin, 24hr	Up to 200Y	0.0 - 21.0	0.0 - 21.0	mg/24hr			
Microalbumin/Creatinine Ratio	Up to 200Y	0 - 29.9	0 - 29.9	mg MA/g C			Y
pH, UR	Up to 200Y	5.0 - 8.0	5.0 - 8.0	pH			S, Y, H
Protein, Total, UR random	Up to 200Y	0 - 11	0 - 11	mg/dL			S, Y, H
Protein, Total, UR 24hr	Up to 200Y	0 - 149	0 - 149	mg/24hr			
Sodium, 24hr Urine	Up to 200Y	40 - 220	40 - 220	mmol/24hr			S, Y, H
Urate, 24hr Urine	Up to 200Y	250 - 750	250 - 750	mg/24hr			S, Y, H



(S) Strong Memorial Hospital - 601 Elmwood Ave. Rochester, NY 14642

(Y) UR Central Lab - 211 Bailey Rd. West Henrietta, NY 14586

(H) Highland Hospital - 990 South Ave. Rochester, NY 14620

(B) Strong West - 156 West Ave. Brockport, NY 14420

(P) Red Creek Lab - 400 Red Creek Dr, Rochester, NY 14623

### Hematology Reference Ranges

#### CBC Test

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
WBC	0 - 4D	9.0 - 38.0	9.0 - 38.0	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	S, Y, H, B, P
	4D - 15D	5.0 - 21.0	5.0 - 21.0	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
	15D - 29D	5.0 - 20.0	5.0 - 20.0	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
	29D - 2 M	5.0 - 19.5	5.0 - 19.5	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
	2M - 6M	6.0 - 17.5	6.0 - 17.5	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
	6M - 2Y	6.0 - 17.0	6.0 - 17.0	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
	2Y - 6Y	5.0 - 17.0	5.0 - 17.0	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
	6Y - 12Y	4.8 - 14.5	4.8 - 14.5	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L	
$\geq$ 12Y	4.0 - 10.0	4.2 - 9.1	THOU/ $\mu$ L		150X10 <sup>3</sup> / $\mu$ L		
RBC	0 - 4D	4.0 - 6.6	4.0 - 6.6	MIL/ $\mu$ L			S, Y, H, B, P
	4D - 8D	3.9 - 6.3	3.9 - 6.3	MIL/ $\mu$ L			
	8D - 15D	3.9 - 5.9	3.9 - 5.9	MIL/ $\mu$ L			
	15D - 29D	3.3 - 5.3	3.3 - 5.3	MIL/ $\mu$ L			
	29D - 4 M	3.1 - 4.3	3.1 - 4.3	MIL/ $\mu$ L			
	4M - 6M	3.9 - 5.5	3.9 - 5.5	MIL/ $\mu$ L			
	6M - 2Y	3.7 - 5.3	3.7 - 5.3	MIL/ $\mu$ L			
	2Y - 6Y	3.9 - 5.3	3.9 - 5.3	MIL/ $\mu$ L			
	6Y - 12Y	4.0 - 5.2	4.0 - 5.2	MIL/ $\mu$ L			
$\geq$ 12Y	3.9 - 5.2	4.6 - 6.1	MIL/ $\mu$ L				
Hemoglobin	0 - 3D	14.5 - 22.5	14.5 - 22.5	g/dL			S, Y, H, B, P
	3D - 7D	13.5 - 21.5	13.5 - 21.5	g/dL			
	7D - 14D	13.4 - 19.8	13.4 - 19.8	g/dL			
	14D - 1M	10.7 - 17.1	10.7 - 17.1	g/dL			
	1M - 2M	9.4 - 13.0	9.4 - 13.0	g/dL			
	2M - 4M	10.3 - 14.1	10.3 - 14.1	g/dL			
	4M - 2Y	11.0 - 14.0	11.0 - 14.0	g/dL			
	2Y - 6Y	11.5 - 14.0	11.5 - 14.0	g/dL			
	6Y - 12Y	11.5 - 15.5	11.5 - 15.5	g/dL			
$\geq$ 12Y	11.2 - 15.7	13.7 - 17.5	g/dL				

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
Hematocrit (includes spun HCT)	0 - 4D	45 - 67	45 - 67	%	19		S, Y, H, B, P
	4D - 8D	42 - 66	42 - 66	%	19		
	8D - 15D	41 - 65	41 - 65	%	19		
	15D - 29D	33 - 55	33 - 55	%	19		
	29D - 2M	28 - 42	28 - 42	%	19		
	2M - 4M	29 - 44	29 - 44	%	19		
	4M - 6M	30 - 40	30 - 40	%	19		
	6M - 2Y	33 - 40	33 - 40	%	19		
	2Y - 6Y	34 - 40	34 - 40	%	19		
	6Y - 12Y	35 - 45	35 - 45	%	19		
≥ 12Y	34 - 45	40 - 51	%	19			
MCH	0 - 4D	31 - 37	31 - 37	pg			S, Y, H, B, P
	4D - 8D	28-40	28 - 40	pg			
	8D - 15D	30 - 37	30 - 37	pg			
	15D - 29D	29 - 36	29 - 36	pg			
	29D - 2M	27 - 34	27 - 34	pg			
	2M - 4M	25 - 32	25 - 32	pg			
	4M - 6M	24 - 30	24 - 30	pg			
	6M - 2Y	23 - 31	23 - 31	pg			
	2Y - 6Y	24 - 30	24 - 30	pg			
	6Y - 12Y	25 - 33	25 - 33	pg			
≥ 12Y	26 - 32	26 - 32	pg				
MCHC	0 - 4D	29 - 37	29 - 37	g/dL			S, Y, H, B, P
	4D - 8D	28 - 38	28 - 38	g/dL			
	8D - 2M	28 - 36	28 - 36	g/dL			
	2M - 4M	29 - 37	29 - 37	g/dL			
	4M - 6M	32 - 37	32 - 37	g/dL			
	6M - 2Y	30 - 36	30 - 36	g/dL			
	≥ 2Y	32 - 36	32 - 37	g/dL			
MCV	0 - 4D	95 - 121	95 - 121	fL			S, Y, H, B, P
	4D - 8D	88 - 126	88 - 126	fL			
	8D - 15D	88 - 122	88 - 122	fL			
	15D - 29D	91 - 111	91 - 111	fL			
	29D - 2M	84 - 106	84 - 106	fL			
	2M - 4M	76 - 96	76 - 96	fL			
	4M - 6M	68 - 85	68 - 85	fL			
	6M - 2Y	71 - 84	71 - 84	fL			
	2Y - 6Y	76 - 87	76 - 87	fL			
	6Y - 12Y	77 - 95	77 - 95	fL			
≥ 12Y	79 - 95	79 - 92	fL				
RDW	ALL	11.7 - 14.4	11.6 - 14.4	%			S, Y, H, B, P
Platelet	ALL	160 - 370	150 - 330	THOU/ $\mu$ L	19		S, Y, H, B, P

**Diff Test**

Test	Age	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
% BAND NEUTROPHILS	0 - 1 D	0 - 15.0	0 - 15	%		16	S, Y, H, B
	≥ 1 D	0 - 10.0	0 - 10.0	%		11	
NEUTROPHIL #	0 - 4D	6.0 - 26.0	6.0 - 26.0	THOU/μL			S, Y, H, B
	4D - 15D	1.5 - 10.0	1.5 - 10.0	THOU/μL			
	15D - 29D	1.0 - 9.0	1.0 - 9.0	THOU/μL			
	29D - 6M	1.0 - 8.5	1.0 - 8.5	THOU/μL			
	6M - 2Y	1.5 - 8.5	1.5 - 8.5	THOU/μL			
	2Y - 12Y	1.5 - 8.0	1.5 - 8.0	THOU/μL			
	≥ 12Y	1.6 - 6.1	1.8 - 5.4	THOU/μL			
LYMPHOCYTE #	0 - 4D	2.0 - 11.0	2.0 - 11.0	THOU/μL			S, Y, H, B
	4D - 15D	2.0 - 17.0	2.0 - 17.0	THOU/μL			
	15D - 29D	2.5 - 16.5	2.5 - 16.5	THOU/μL			
	29D - 6M	4.0 - 13.5	4.0 - 13.5	THOU/μL			
	6M - 2Y	3.0 - 9.5	3.0 - 9.5	THOU/μL			
	2Y - 6Y	2.0 - 8.0	2.0 - 8.0	THOU/μL			
	6Y - 12Y	1.5 - 7.0	1.5 - 7.0	THOU/μL			
	≥ 12Y	1.2 - 3.7	1.3 - 3.6	THOU/μL			
MONOCYTE #	0 - 4D	0.4 - 3.0	0.4 - 3.0	THOU/μL			S, Y, H, B
	4D - 15D	0.3 - 2.7	0.3 - 2.7	THOU/μL			
	15D - 29D	0.2 - 2.5	0.2 - 2.5	THOU/μL			
	29D - 6M	0.2 - 2.4	0.2 - 2.4	THOU/μL			
	6M - 2Y	0 - 1.1	0 - 1.1	THOU/μL			
	≥ 2Y	0.2 - 0.9	0.3 - 0.8	THOU/μL			
EOSINOPHIL #	ALL	0.0 - 0.4	0.0 - 0.5	THOU/μL			S, Y, H, B, P
BASOPHIL #	ALL	0.0 - 0.1	0.0 - 0.1	THOU/μL			S, Y, H, B, P
IG #	< 17Y	0.0 - 0.1	0.0 - 0.1	THOU/μL			S, Y, H
	≥ 17Y	0.0 - 0.0	0.0 - 0.0	THOU/μL			S, Y, H
% METAMYELOCYTES	ALL	0 - 1.0	0 - 1.0	%			S, Y, H, B, P
% MYELOCYTES	ALL	0 - 0	0 - 0	%			S, Y, H, B, P
% PROMYELOCYTES	ALL	0 - 0	0 - 0	%			S, Y, H, B, P
% BLASTS	ALL	0 - 0	0 - 0	%			S, Y, H, B, P
% REACTIVE LYMPHS	ALL	0 - 6.0	0 - 6.0	%			S, Y, H, B, P
NUCLEATED RBC	0 - 3D	0 - 5.0	0 - 5.0	per 100 WBC			S, Y, H, B, P
	4D - 7D	0 - 1.0	0 - 1.0	per 100 WBC			
	> 7D	0.0 - 0.2	0.0 - 0.2	per 100 WBC			
NUCLEATED RBC #	ALL	0.0 - 0.0	0.0 - 0.0	THOU/μL			S, Y, H, B, P

Test	Age (from --> up to, NOT including)	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
% RETICULOCYTE	0 - 3D	3.5 - 5.4	3.5 - 5.4	%			S, Y, H
	4 - 30D	1.1 - 2.4	1.1 - 2.4	%			
	31 - 60D	2.1 - 3.5	2.1 - 3.5				
	61D - 6M	1.6 - 2.7	1.6 - 2.7				
	7M - 3Y	1.0 - 1.8	1.0 - 1.8				
	4Y - 7Y	0.8 - 1.5	0.8 - 1.5				
	8Y - 13Y	1.0 - 1.9	1.0 - 1.9				
	14Y - 19Y	0.9 - 1.5	0.9 - 1.5				
> 19Y	0.7 - 2.1	0.7 - 2.3					
RETICULOCYTE#	0 - 3D	147.5 - 216.4	147.5 - 216.4	THOU/mL			S, Y, H
	4 - 30D	51.3 - 110.4	51.3 - 110.4				
	31 - 60D	51.8 - 77.9	51.8 - 77.9				
	61D - 6M	48.2 - 88.2	48.2 - 88.2				
	7M - 3Y	43.5 - 111.1	43.5 - 111.1				
	4Y - 7Y	36.4 - 68.0	36.4 - 68.0				
	8Y - 13Y	42.4 - 70.2	42.4 - 70.2				
	14Y - 19Y	41.6 - 65.1	41.6 - 65.1				
> 19	29.9 - 90.9	33.8 - 124.0					
ERYTHROCYTE SEDIMENTATION RATE	0 - 50	0 - 20	0 - 15	mm/hr			S, Y, H
	> 50	0 - 30	0 - 20				

**Urinalysis**

Test	Age (from --> up to, NOT including)	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
COLOR	ALL	Yel, Dark Yel	Yel, Dark Yel	-			S, Y, H, B
APPEARANCE	ALL	Clear	Clear	-			
GLUCOSE	ALL	Negative	Negative	mg/dL			
KETONES	ALL	Negative	Negative	-			
SPECIFIC GRAVITY	ALL	1.002 - 1.030	1.002 - 1.030	-			
BLOOD	ALL	Negative	Negative	-			
pH	ALL	5.0 - 8.0	5.0 - 8.0	-			
PROTEIN	ALL	Negative	Negative	mg/dL			
NITRITES	ALL	Negative	Negative	-			
LEUKOCYTE ESTERASE	ALL	Negative	Negative	-			

**Urinalysis with Microscopic**

Test	Age (from --> up to, NOT including)	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
BACTERIA, UR	ALL	None Seen - 1+	None Seen - 1+				S, Y, H
MUCUS, UR	ALL	Not Present	Not Present				
RENAL EPITH, UR	ALL	None	None	/hpf			
SQUAMOUS EPITH, UR	ALL	0 - 1+	0 - 1+				
TRANS EPITH, UR	ALL	0 - 1+	0 - 1+				
TRICOMONAS, UR	ALL	Not Present	Not Present	/hpf			
RBC, UR	ALL	0 - 2	0 - 2	/hpf			
WBC, UR	ALL	0 - 5	0 - 5	/hpf			
YEAST, UR	ALL	Not Present	Not Present	/hpf			
GRANULAR CASTS, UR	ALL	None seen	None seen	/lpf			
HYALINE CASTS, UR	ALL	0 - 5	0 - 5	/lpf			
MISC. CASTS, UR	ALL	None seen	None seen	/lpf			
WAXY CASTS, UR	ALL	None seen	None seen	/lpf			
AMORPHOUS CRYSTALS, UR	ALL	None seen	None seen	/hpf			
CA OXALATE CRYSTALS, UR	ALL	None seen	None seen	/hpf			
CYSTEINE CRYSTALS, UR	ALL	None seen	None seen	/hpf			
LEUCINE CRYSTALS, UR	ALL	None seen	None seen	/hpf			
TYROSINE CRYSTALS, UR	ALL	None seen	None seen	/hpf			
OVAL FAT (BODIES, FREE OVAL FAT)	ALL	None seen	None seen	/hpf			

**Coagulation**

Test	Age (from --> up to, NOT including)	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
PT	ALL	10.0 - 12.9	10.0 - 12.9	seconds			S, Y, H, B
INR**	ALL	0.9 - 1.1	0.9 - 1.1	ratio		≥ 5.0	S, Y, H, B
<i>THERAPEUTIC</i>	ALL	2.0 - 3.0	2.0 - 3.0	ratio			S, Y, H, B
PTT	ALL	25.8 - 37.9	25.8 - 37.9	seconds			S, Y, H, B
FIBRINOGEN	ALL	172 - 409	172 - 409	mg/dL			S, H
ANTITHROMBIN III	ALL	81 - 125	81 - 125	%			S
D-DIMER	ALL	0 - 0.5	0 - 0.5	µg/mL FEU			S, H, B
FIBRIN SPLIT PRODUCTS	ALL	< 5	< 5	microgram/mL			S, H
LOW MOLECULAR WT. HEPARIN (ANTI-Xa)	ALL	0.4 - 0.8	0.4 - 0.8	units/mL			S
HEPARIN (ANTI-Xa)	ALL	0.3 - 0.7	0.3 - 0.7	units/mL			S
THROMBIN TIME	ALL	13.0 - 17.7	13.0 - 17.7	seconds			S

**CSF/ Misc Fluid Testing**

Test	Age (from --> up to, NOT including)	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
<b>CSF TESTING</b>							
CSF RBC	0 - 30D	0 - 50	0 - 50	/uL			S, H
	> 30D	0 - 5	0 - 5	/uL			
CSF NUCLEATED CELLS	0D - 30D	0 - 27	0 - 27	/uL			S, H
	1M - 16Y	0 - 7	0 - 7	/uL			
	> 16Y	0 - 5	0 - 5	/uL			
<b>CSF DIFFERENTIAL</b>							
NEUTROPHIL, CSF%	0D - 30D	0 - 8	0 - 8	%			S, H
	> 30D	0 - 2	0 - 2	%			
LYMPHOCYTE, CSF%	0D - 30D	2 - 38	2 - 38	%			S, H
	> 30D	63 - 99	63 - 99	%			
MONOCYTES, CSF%	0D - 30D	50 - 94	50 - 94	%			S, H
	> 30D	3 - 37	3 - 37	%			
MACROPHAGES, CSF%	0D - 30D	1 - 9	1 - 9	%			S, H
	> 30D	0 - 1	0 - 1	%			



**Thromboelastograph (TEG) Testing**

Test	Age (from --> up to, NOT including)	Female Range	Male Range	Units	Panic LO	Panic HI	Testing Location
<b>Thromboelastograph (TEG)</b>							
R-TIME	ALL	4 - 10	4 - 10	MINUTES		> 12	S
K-TIME	ALL	1 - 3	1 - 3	MINUTES			S
ANGLE	ALL	53 - 73	53 - 73	DEGREES	< 40		S
MAXIMUM AMPLITUDE (MA)	ALL	50 - 72	50 - 72	MILLIMETERS	< 40		S
LY30	ALL	0.0 - 8.0	0.0 - 8.0	%		> 10	S