

Reference Range Change Effective May 17, 2021

As part of Northwestern Medicine’s Patient First Mission and standardization efforts,
Reference Ranges for the following assays will be updated as below.

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
AG Ratio					
	0D-999Y	1.1-1.9	N/A	1.0-2.0	N/A
Albumin					
	5D-999Y	3.5-5.0	g/dl	3.5-5.0	g/dL
	0D-4D	None		2.8-4.4	
	0D-12M	3.2-4.8		None	
	13M-2Y	3.5-5.5		None	
	3Y-12Y	3.5-5.4		None	
	13y+	3.5-5.0		None	
Alcohol (Ethanol)					
	0D-999Y	0.00-79.00	mg/dl	0-10	mg/dL
Alkaline Phosphatase					
	19Y-999Y Female	40-129	IU/L	34-104	U/L
	1D-5D	5-249		None	
	6D-11M	5-461		None	
	12M-12Y	5-299		None	
	Female 13Y-17Y	5-186		None	
	Male 13Y-17Y	5-389		None	
	0 to 15D	None		76-233	U/L
	15D to 1Y Female	None		113-443	U/L
	1Y to <10Y Female	None		132-315	U/L
	10Y to <13Y Female	None		119-393	U/L
	13Y to <15Y Female	None		52-239	U/L
	15Y to <17Y female	None		45-108	U/L
	17Y to <19Y Female	None		40-80	U/L
	19Y to 999Y Male	None		34-104	U/L
	0 to 15D Male	None		76-233	U/L

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
Alkaline Phosphorus cont.	15D to 1Ymale	None		113-443	U/L
	1Y to <10Y Male	None		132-315	U/L
	10Y to <13Y Male	None		119-393	U/L
	13Y to <15Y Male	None		107-442	U/L
	15Y to <17Y Male	None		75-312	U/L
	17Y to <19Y Male	None		49-139	U/L
	Ammonia				
	0D-999Y	None		11 - 60	umol/L
	Female	11-51	mcmoles/L	None	
	Male	16-60		None	
Amylase					
	0D-999Y	28-100	IU/L	29-103	U/L
	Timed Urine	1-17	IU/hr	No reference range	
	Random Urine	None	N/A	0-338	U/L
Anion Gap					
	0D-999Y	8-16	mmol/L	4-13	mEq/L
AST (SGOT)					
	0D-999Y	None	None	13 - 39	U/L
	Female	11-32	IU/L	None	
	Male	14-54		None	
B-Type Natriuretic Peptide					
	0D-999Y	None	N/A	0 - 99	pg/mL
	<75Y	0-125	pg/ml	None	
	75Y-999Y	5-450	pg/ml	None	
BUN					
	0D-11M	4-19	mg/dl	4-18	mg/dL
	12M-17Y	5-18		4-18	
	18Y-59Y	6-20		7-25	
	60Y-999Y	6-20		7-25	
C-Reactive Protein (High Sensitivity)					
	0D-999Y	0.00-2.99	mg/dl	0.00 - 3.00	mg/L
Calcium					
	0D-9D		mg/dl	8.6-10.2	mg/dl
	10D-1Y		mg/dl	8.6-10.2	
	2Y-11Y		mg/dl	8.6-10.2	
	12Y-59Y		mg/dl	8.6-10.2	
	60Y-89Y		mg/dl	8.6-10.2	
	89Y-999Y		mg/dl	8.6-10.2	
Carbamazepine (Tegretol)					
	0D-999Y	8-12	µg/ml	4 - 12	µg/ml

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
Carbon Dioxide					
	0D-999Y	22-29	mEq/L	21-31	mEq/L
Cholesterol					
	0D-19Y	0-169	mg/dL	0-199	mg/dL
	20Y-999Y	0-199		0-199	
Complement C3					
	0D-999Y	90-180	mg/dL	87-200	mg/dL
Complement C4					
	0D-999Y	10-40	mg/dL	19-52	mg/dL
Cortisol					
	AM	None	N/A	6.7 - 22.6	ug/dL
	PM	None		< 10	
Creatinine					
	0D - 15D Female/Male	0.5-1.2	mg/dl	0.3-0.9	mg/dL
	15D -1M Female/Male	0.5-1.2		0.1-0.4	mg/dL
	1M - <2Y Female/Male	0.5-1.2		0.1-0.4	mg/dL
	2Y - <5Y Female/Male	0.5-1.2		0.2-0.4	mg/dL
	5Y - <12Y Female/Male	0.5-1.2		0.3-0.6	mg/dL
	12Y - <15Y Female/Male	0.5-1.2		0.5-0.8	mg/dL
	15Y - 19Y Female	0.5-1.2		0.5-0.8	mg/dL
	15Y-19Y Male	0.5-1.2		0.6-1.1	mg/dL
	19Y-999Y	0.5-1.2		0.60-1.30	mg/dL
	24hr Urine	800-2000	mg/24HRS	0.8 - 2.5	g/24 HRS
Digoxin					
	0D-999Y	0.8-2.0		0.9-2.0	ng/ml
Ferritin					
	Female	13-400	ng/mL	8-252	ng/mL
	Male	13-400		24-336	
Folate					
	0D-999Y	5.2-20	ng/mL	> 5.9	ng/mL
Free Phenytoin					
	0D-999Y	1.2-2.5	µg/mL	1.0-2.0	µg/mL
Free Thyroxine (FT4)					
	0D - 999Y	0.8-1.8	ng/dL	0.60 - 1.40	ng/dL
Gamma –Glutamyl Transferase (GGT)					
	Male	8-61	IU/L	9-64	U/L
	Female	5-36		9-64	

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
Gentamicin, Peak					
	0D-999Y	5-20	µg/mL	5.0 - 10.0	µg/mL
Globulin					
		1.8-3.2	g/dL	2.3-3.5	g/dL
Glucose					
	0-30D	70-99	mg/dL	40-60	mg/dL
	30D-999Y	70-99		70-100	
	Fasting Glucose	70-99		70-100	
	CSF	45-70		40-70	
GTT - Gestational 3 hour ACOG					
	fasting	70-94	mg/dL	70 - 91	mg/dL
	1 hour	70-179		70 - 179	
	2 hour	70-154		70 - 154	
	3 hour	70-139		70 - 139	
GTT - Non Gestational 2 hr					
	fasting	70-99	mg/dL	70 - 100	mg/dL
	2 hour	70-139		70 - 139	
Haptoglobin					
	0D-999Y	30-200	mg/dL	44-215	mg/dL
HDL					
	0D-20Y	46-240	mg/dL	23-92	mg/dL
	20Y-999Y Male	40-240		23-92	
	20Y-999Y Female	50-240		23-92	
Intact PTH					
	0D-999Y	15-65	pg/mL	12 - 88	pg/mL
PTH Intraoperative					
	0D-999Y	15-65	pg/mL	12 - 88	pg/mL
Immunoglobulin A					
	0D-1Y	0-83	mg/dL	0-30	mg/dL
	1Y-3Y	20-100		0-90	
	3Y-6Y	27-195		30-150	
	6Y-9Y	34-305		50-230	
	10Y-11Y	53-204		50-230	
	12Y-14Y	58-358		50-230	
	14Y-15Y	47-249		50-300	
	16Y-19Y	61-348		50-300	
	20Y-999Y	70-400	mg/dL	66-433	mg/dL
Immunoglobulin G					
	0D-15D	232-1411	mg/dL	300-1300	mg/dL
	15D-1Y	232-1411		110-650	

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
Immunoglobulin G cont.	1Y-4Y	453-916		300-1070	
	4Y-6Y	504-1465		510-1260	
	6Y-9Y	572-1474		510-1260	
	10Y-11Y	698-1560		620-1420	
	12Y-13Y	759-1550		620-1420	
	14Y-15Y	716-1711		620-1420	
	16Y-19Y	549-1584		620-1420	
	19Y-999Y	700-1600		635-1741	
Immunoglobulin M					
	0D-15D	0-145	mg/dL	20-40	mg/dL
	15D-3M	0-145		20-70	
	3M-1Y	0-145		30-90	
	1Y-3Y Male	19-146		40-130	
	4Y-6Y Male	24-210		40-130	
	7Y-9Y Male	31-208		40-130	
	10Y-11Y Male	31-179		40-130	
	12Y-13Y Male	35-239		40-130	
	14Y-15Y Male	15-188		40-130	
	16Y-19Y Male	23-259		40-130	
	1Y-3Y Female	19-146		50-170	
	4Y-6Y Female	24-210		50-170	
	7Y-9Y Female	31-208		50-170	
	10Y-11Y Female	31-179		50-170	
	12Y-13Y Female	35-239		50-170	
	14Y-15Y Female	15-188		50-170	
	16Y-19Y Female	23-259		50-170	
	19Y-999Y	40-230		45-280	
Iron					
	0D-1Y	0-83	µg/dl	None	
	1Y-4Y	20-100		None	
	4Y-7Y	27-195		None	
	7Y-10Y	34-305		None	
	10Y-12Y	53-204		None	
	12Y-14Y	58-358		None	
	14Y-16Y	47-249		None	
	16Y-20Y	61-348		None	
	20Y-999Y	70-400		None	
	Females 0D-999Y	None		40-170	µg/dL
	Males 0D-999Y	None		60-175	
% Iron Saturation					
	0D-999Y	None		20-55	%

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Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
LDH					
	0D-999Y Male	135-225	U/L	140-271	U/L
	0D-999Y Female	135-214		140-271	
LDL(CALC)					
	0D-20Y	0-109	mg/dL	0 - 99	mg/dL
	20Y-999Y	0-99		0-99	
LDL - Direct					
	0D-20Y	0-109	mg/dL	0-99	mg/dL
	20Y-999Y	0-99		0-99	
Lipase					
	0D-999Y	13-60	U/L	11-82	U/L
Magnesium					
	0D-3M	1.8-2.8	mg/dL	1.7-2.8	mg/dL
	3M-16Y	1.7-2.3		1.7-2.8	
	16Y-999Y	1.7-2.8		1.7-2.8	
Microalbumin					
	Random	0.0-1.9	mg/dl	0.0 - 1.8	mg/dL
	Excretion Rate	0.0-19.0	µg/min	0.0 - 19.9	µg/min
	24 Hour	0.0-29.0	mg/24 hr	0.0 - 29.9	mg/24 hr
	MALB/CRE Ratio	0.0-30.0	mg/g	0.0 - 29.0	mg/g
Myoglobin					
	Males - Serum	28-72	ng/mL	17.4 - 105.7	ng/mL
	Females - Serum	25-58	ng/mL	14.3 - 65.8	ng/mL
Phosphorus					
	0D-31D Female	4.3-7.7	mg/dL	4.0-7.0	mg/dL
	31D-1Y Female	3.7-6.5		4.0-7.0	
	1Y-4Y Female	3.4-6.0		4.0-7.0	
	4Y-7Y Female	3.2-5.5		4.0-7.0	
	7Y-10Y Female	3.1-5.5		4.0-7.0	
	10Y-13Y Female	3.3-5.3		4.0-7.0	
	13Y-16Y Female	2.8-4.8		4.0-7.0	
	16Y-18Y Female	2.5-4.8		4.0-7.0	
	18Y-999Y Female	2.5-4.5		2.5-5.0	
	0D-31D Male	3.9-6.9		4.0-7.0	
	31D-1Y Male	3.5-6.6		4.0-7.0	
	1Y-4Y Male	3.1-6.0		4.0-7.0	
	4Y-7Y Male	3.3-5.6	mg/dL	4.0-7.0	mg/dL
	7Y-10Y Male	3.0-5.4		4.0-7.0	
	10Y-13Y Male	3.2-5.7		4.0-7.0	
	13Y-16Y Male	2.9-5.1		4.0-7.0	

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
Phosphorus cont.	16Y-18Y Male	2.7-4.9		4.0-7.0	
	18Y-999Y Male	2.5-4.5		2.5-5.0	
	24 Hr Urine	400-1300	mg/24 hr	400-1300	mg/24 hr
Potassium					
	0D - 999Y	3.5-5.3	mEq/L	3.5 - 5.1	mEq/L
	24hr Urine	25-125	mEq/L/24 Hrs	25 - 125	mEq/L/24 Hrs
Prealbumin					
	0D-3M	10-25	mg/dL	17-34	mg/dL
	3M-999Y	20-40		17-34	
Procalcitonin					
	0D-999Y	0.000-0.090	ng/mL	0.000 - 0.065	ng/mL
Salicylate					
	0D-999Y	3.0-10.0	mg/dL	0 - 30	mg/dL
Thyroxine (T4)					
	0D - 999Y	4.5-11.70	µg/dL	6.09 - 12.23	µg/dL
Total Protein					
	0-24H	4.6-7.0	g/dL	4.6 - 7.0	g/dL
	1D-7D	4.6-7.0		4.4 - 7.6	
	7D-3M	4.4-7.6		3.6-7.4	
	3M-7M	4.4-7.6		4.3-6.1	
	7M-1Y	5.6-7.5		5.1-7.3	
	1Y-3Y	5.6-7.5		5.1-7.5	
	3Y-4Y	6.0-8.3		5.3-8.0	
	5Y-11Y	6.0-8.3		6.0 - 8.0	
	11Y-18Y	6.0-8.3		6.0-8.0	
	18Y-999Y	6.0-8.3		6.4 - 8.3	
	24hr Urine	0-150	mg/24 hrs	10-150	mg/24hrs
	CSF	15-45	mg/dL	15 - 45	mg/dL *
Triglycerides					
	0D-10Y	0-74	mg/dl	0 - 150	mg/dL
	10Y-20Y	0-89		0 - 150	
	20Y-999Y	0-150		0 - 150	
TSH					
	0D-999Y	0.30-5.00	µIU/mL	0.30 - 5.33	µIU/mL
URIC					
	0D-999Y Females	2.4-5.7	mg/dL	2.3 - 6.6	mg/dL
	0D-999Y Male	3.4-7.0	mg/dL	4.4 - 7.6	mg/dL
	24hr urine	200-750	mg/24 hr	250-800	mg/24 hr

Test Name	Age/Gender	Current Range	Current Unit	New Range	New Unit
Vitamin B12					
	Normal Range:	232-1245	pg/mL	180 - 914	pg/mL
	Indeterminate Range:			145 - 180	
	Deficient Range:			≤ 145	
Vancomycin, trough					
	0D-999Y	10-15	µg/mL	5 – 10	µg/mL
Rubella IgG					
	0D-999Y	<10.0	IU/mL	<10.0	IU/mL
	0D-999Y	None		>10-<15	Equivocal
	0D-999Y	>or = 10	Positive	>or=15	Positive
SHBG					
	Male 20Y-50Y	10-80	nmol/L	13.3-89.5	nmol/L
	Female 20Y-46Y	20-130	nmol/L	18.2-135.5	nmol/L
	Female 47Y-91Y	20-130	nmol/L	16.8-125.2	nmol/L
Testosterone					
	Female 0D-999Y	8-48	ng/ml	0-100	ng/dL
	Female 20Y-50Y	8-48		0-100	
	Female 50Y-999Y	3-40		0-100	
	Male 0D-19Y	175-781		200-800	
	Male 19Y-999Y	193-950		200-800	
Insulin					
	0D-999Y	2.6-24.9	µIU/mL	1.9-23	µIU/mL
Free T3					
	0D-999Y	2.4-4.4	pg/mL	2.5-3.9	pg/mL
Total T3					
	0D-999Y	0.8-2.0	ng/mL	87-178	ng/dL
Total T4					
	0D-999Y	4.50-11.70	µg/dL	6.09-12.23	µg/dL
Anti-Thyroglobulin					
	0D-999Y	0.0-115.0	IU/mL	0-4	IU/mL
Anti-TPO					
	0D-999Y	0.0-34.0	IU/mL	0-9	IU/mL
ASO					
	0D-18Y	0-150	IU/mL	0-250	IU/mL
	18Y-999Y	0-200		0-250	

Please contact David Blaeske at 630-933-3146 or Dr. Ajay Patel at 630-938-9134 with any questions or concerns