



Banner University Medical Center – South Campus
2800 E. Ajo Way
Tucson, AZ 85713

June 10, 2021

To Whom It May Concern:

The Reference Ranges of testing performed at Banner - University Medical Center South Campus for general Chemistry, Hematology, Coagulation and Urinalysis testing performed onsite are up to date and attached.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Klein', written over a horizontal line.

Robert Klein M.D., Medical Director

A handwritten date '6-10-21' in black ink, written above a horizontal line.

Date

Test Name	Assay Display	Gender	Age Starts	Age Units	Age Ends	Age Units	Normal	Normal	Units of
							Low	High	Measure
Acetaminophen Level	ACETA	Both	0	Minutes	150	Years	N/A	≤ 30	ug/mL
Albumin Serum	ALB	Both	2	Years	51	Years	3.6	5.1	g/dL
Albumin Serum	ALB	Both	51	Years	150	Years	3.4	4.9	g/dL
Alkaline Phosphatase Serum	ALKP	Male	17	Years	150	Years	40	140	U/L
Alkaline Phosphatase Serum	ALKP	Female	17	Years	49	Years	37	127	U/L
Alkaline Phosphatase Serum	ALKP	Female	49	Years	150	Years	42	146	U/L
Alanine Aminotransferase	ALT	Female	0	Minutes	20	Years	5	35	U/L
Alanine Aminotransferase	ALT	Female	20	Years	150	Years	5	46	U/L
Alanine Aminotransferase	ALT	Male	0	Minutes	20	Years	5	41	U/L
Alanine Aminotransferase	ALT	Male	20	Years	150	Years	5	60	U/L
Ammonia	AMON	Male	31	Days	150	Years	N/A	≤ 60	umol/L
Ammonia	AMON	Female	31	Days	150	Years	N/A	≤ 51	umol/L
Aspartate Aminotransferase	AST	Male	6	Years	150	Years	12	47	U/L
Aspartate Aminotransferase	AST	Female	9	Years	150	Years	11	40	U/L
Beta Hydroxybutyrate	BHB	Both	0	Minutes	150	Years	N/A	≤ 2.8	mg/dL
Bilirubin Direct Serum	BILID	Both	31	Days	150	Years	N/A	≤ 0.3	mg/dL
Bilirubin Total Serum	BILIT	Both	31	Days	150	Years	0.2	1.3	mg/dL
Probrain Natriuretic Peptide	BNPC	Both	0	Minutes	74	Years	N/A	≤ 124	pg/mL
Probrain Natriuretic Peptide	BNPC	Both	74	Years	150	Years	N/A	≤ 449	pg/mL
Urea Nitrogen Serum	BUN	Both	12	Years	150	Years	8	25	mg/dL
Calcium Serum	CA	Both	13	Years	150	Years	8.8	10.4	mg/dL
Carbamazepine (Tegretol)	CARBAMA	Both	0	Minutes	150	Years	4.0	12.0	ug/mL
Creatine Kinase	CK	Male	13	Years	19	Years	N/A	≤ 244	U/L
Creatine Kinase	CK	Male	19	Years	150	Years	52	355	U/L
Creatine Kinase	CK	Female	1	Months	19	Years	N/A	≤ 142	U/L
Creatine Kinase	CK	Female	19	Years	150	Years	29	188	U/L
Chloride Serum	CL	Both	0	Minutes	150	Years	95	108	mmol/L
Carbon Dioxide	CO2	Both	11	Years	91	Years	19	31	mmol/L
Carbon Dioxide	CO2	Both	91	Years	150	Years	20	29	mmol/L
Creatinine, Serum	CREAT	Female	11	Years	19	Years	0.60	1.10	mg/dL
Creatinine, Serum	CREAT	Female	19	Years	21	Years	0.40	1.20	mg/dL
Creatinine, Serum	CREAT	Female	21	Years	150	Years	0.60	1.40	mg/dL
Creatinine, Serum	CREAT	Male	11	Years	19	Years	0.60	1.20	mg/dL
Creatinine, Serum	CREAT	Male	19	Years	21	Years	0.40	1.30	mg/dL
Creatinine, Serum	CREAT	Male	21	Years	150	Years	0.60	1.50	mg/dL
Creatinine Clearance Adult - Serum/Plasma	ACAL	Male	18	Months	150	Years	85	125	ml/minute
Creatinine Clearance Adult - Serum/Plasma	ACAL	Female	18	Months	150	Years	75	115	ml/minute
Creatinine Clearance Adult - Urine	CREATU	Both	0	Minutes	150	Years	19	280	mg/dL
C-Reactive Protein	CRP	Both	0	Minutes	150	Years	N/A	≤ 4.9	mg/L
Digoxin Level	DIG	Both	0	Minutes	150	Years	0.8	2.0	ng/mL
Iron	FE	Both	15	Years	20	Years	34	162	ug/dL
Iron	FE	Female	20	Years	150	Years	35	175	ug/dL
Iron	FE	Male	20	Years	150	Years	40	190	ug/dL
Ferritin Level	FERRI	Male	0	Minutes	150	Years	25	506	ng/mL
Ferritin Level	FERRI	Female	0	Minutes	51	Years	11	230	ng/mL
Ferritin Level	FERRI	Female	51	Years	150	Years	14	313	ng/mL
Total Iron Binding Capacity	TIBC	Both	0	Minutes	150	Years	250.0	435.0	ug/dL
Transferrin	TRF	Both	16	Years	150	Years	200.0	390.0	mg/dL
Free T4	FT4	Both	18	Years	150	Years	0.80	1.70	ng/dL
Glucose Random Serum	GLUC	Both	10	Years	60	Years	70	106	mg/dL
Glucose Random Serum	GLUC	Both	60	Years	90	Years	70	115	mg/dL
Glucose Random Serum	GLUC	Both	90	Years	150	Years	70	121	mg/dL
Glucose Fasting Serum	GLUCF	Both	10	Years	150	Years	70	99	mg/dL
HCG Quant, Serum	HCGQ	Both	0	Minutes	150	Years	N/A	≤ 4	mIU/mL
Potassium Serum	K	Both	1	Years	150	Years	3.6	5.3	mmol/L
Lactic Acid Plasma	LA	Both	0	Minutes	150	Years	0.5	2.2	mmol/L
Lactate Dehydrogenase Serum	LD	Female	15	Years	150	Years	135	214	U/L
Lactate Dehydrogenase Serum	LD	Male	15	Years	150	Years	135	225	U/L
Lipid Profile	CHR	Male	18	Years	150	Years	N/A	≤ 4.9	N/A
Lipid Profile	CHR	Female	18	Years	150	Years	N/A	≤ 4.4	N/A
Cholesterol	CHOL	Both	18	Years	150	Years	N/A	≤ 199	mg/dL
Lipid Profile	HDL	Male	18	Years	150	Years	≥ 40	N/A	mg/dL
Lipid Profile	HDL	Female	18	Years	150	Years	≥ 50	N/A	mg/dL
Lipid Profile	MHDL	Both	18	Years	150	Years	N/A	≤ 99	N/A
Lipid Profile	Non HDL								
Lipid Profile	Cholesterol	Both	18	Years	150	Years	N/A	≤ 129	mg/dL
Lipid Profile	TGL	Both	9	Years	19	Years	N/A	≤ 89	mg/dL
Lipid Profile	TGL	Both	19	Years	150	Years	N/A	≤ 149	mg/dL
Lipase Serum	Lipase Level	Both	0	Minutes	150	Years	16	63	U/L
Magnesium	MG	Both	0	Minutes	150	Years	1.5	2.5	mg/dL

Test Name	Assay Display	Gender	Age Starts	Age Units	Age Ends	Age Units	Normal Low	Normal High	Units of Measure
Sodium Serum	NA	Both	0	Minutes	150	Years	134	147	mmol/L
Random Urine, Normalized to Creat (Prot/Crea Ratio)	PCAL	Female	0	Minutes	150	Years	15	220	mg/g of Creat
Random Urine, Normalized to Creat (Prot/Crea Ratio)	PCAL	Male	0	Minutes	150	Years	15	170	mg/g of Creat
Phosphorus Serum	PHOS	Male	17	Years	19	Years	2.7	5.9	mg/dL
Phosphorus Serum	PHOS	Male	19	Years	150	Years	2.4	4.8	mg/dL
Phosphorus Serum	PHOS	Female	17	Years	19	Years	2.8	5.0	mg/dL
Phosphorus Serum	PHOS	Female	19	Years	150	Years	2.4	4.8	mg/dL
Prealbumin	PREALB	Both	0	Minutes	150	Years	20	40	mg/dL
Protein Total Serum	PROT	Both	18	Years	150	Years	6	8	g/dL
Dilantin/Phenytoin Level	PTN	Both	0	Minutes	150	Years	10.0	20.0	ug/mL
Troponin-T, High Sensitive	TROPTH5	Female	0	Minutes	150	Years	N/A	≤ 11	ng/L
Troponin-T, High Sensitive	TROPTH5	Male	0	Minutes	150	Years	N/A	≤ 19	ng/L
Thyroid Stimulating Hormone	TSH	Both	11	Years	20	Years	0.3	4.0	uIU/mL
Thyroid Stimulating Hormone	TSH	Both	20	Years	150	Years	0.45	4.5	uIU/mL
Uric Acid Serum	URIC	Male	13	Years	150	Years	3.5	8.0	mg/dL
Uric Acid Serum	URIC	Female	13	Years	61	Years	2.2	6.5	mg/dL
Uric Acid Serum	URIC	Female	61	Years	150	Years	2.2	7.0	mg/dL
Basophil, Absolute	Baso#	Both	1	Month	150	Years	0.0	0.2	K/uL
Eosinophil, Absolute	Eos#	Both	2	Years	150	Years	0.0	0.6	K/uL
Hematocrit	HCT	Female	18	Years	150	Years	35.0	48.0	%
Hematocrit	HCT	Male	18	Years	150	Years	40.0	53.0	%
Hemoglobin	HGB	Female	18	Years	150	Years	12	16	g/dL
Hemoglobin	HGB	Male	18	Years	150	Years	13.5	17	g/dL
Immature Granulocytes	IGAB	Both	90	Days	150	Years	0.0	0.1	K/uL
Immature Reticulocyte Fraction	IRF	Both	0	Years	150	Years	2.5	16.0	%
Lymphocytes, Absolute	Lymph#	Both	18	Years	150	Years	0.9	3.9	K/uL
Mean Corpuscular Hemoglobin	MCH	Both	18	Years	150	Years	27.0	34.0	pg
Mean Corpuscular Hemoglobin Conc.	MCHC	Both	0	Minutes	150	Years	31	37	g/dL
Mean Corpuscular Volume	MCV	Both	18	Years	150	Years	78	100	fL
Monocytes, Absolute	Mono#	Both	18	Years	150	Years	0.2	1.0	K/uL
Mean Platelet Volume	MPV	Both	18	Years	150	Years	7.3	10.8	fL
Neutrophil, Absolute	Neut#	Both	18	Years	150	Years	1.5	7.8	K/uL
Nucleated Red Blood Cells	NRBCRE	Both	1	Week	150	Years	0	0	%
Platelet Count	PLTCT	Both	0	Minutes	150	Years	130	450	K/MM3
Red Blood Cell	RBC	Female	18	Years	150	Years	3.70	5.40	M/MM3
Red Blood Cell	RBC	Male	18	Years	150	Years	4.30	6.00	M/MM3
Red Cell Distribution Width	RDW	Both	0	Minutes	150	Years	11.0	15.0	%
Red Cell Distribution Width - SD	RDW - SD	Both	0	Minutes	150	Years	38.0	49.0	fL
White Blood Cell***	WBC	Both	18	Years	150	Years	4	11	K/MM3
Reticulocytes, Absolute	RET#	Both	2	Week	150	Years	26	168	K/uL
Reticulocytes, Percent	RET2	Both	2	Week	150	Years	0.7	2.8	%
Reticulocyte-Hemoglobin	RETHE	Both	3	Years	150	Years	30.5	41.0	pg
Reticulocyte-Hemoglobin	RETHE1	Both	3	Years	150	Years	30.5	41.0	pg
Activated Partial Thromboplastin Time	APTT	Both	0	Minutes	150	Years	24.0	36.5	Seconds
D-Dimer	DDIQ	Both	0	Minutes	150	Years	NA	≤ 500	ng/mL FEU
Fibrinogen	FIB	Both	0	Minutes	150	Years	200	465	mg/dL
International Normalized Ratio	INR	Both	0	Years	150	Years	0.9	1.1	N/A
Prottime	PROTIME	Both	0	Minutes	150	Years	9.4	12.5	Seconds
Hematology - WBC***	Reference ranges for white blood cell percentage are not reported, and high or low results will not be flagged, as percentages can be misinterpreted when the white blood cell count is out of normal range. The absolute counts are a better measurement and are reported with reference ranges, with flags when out of range. Please refer to the absolute count.								

Test Name	Assay Display	Gender	Age Starts	Age Units	Age Ends	Age Units	Normal	Normal	Units of Measure
							Low	High	
Ammonium Biurate Crystals	AMON CRY	Both	0	Minutes	150	Years	None	N/A	/HPF
Appearance Urine	APPEAR	Both	0	Minutes	150	Years	Clear	N/A	N/A
Bacteria Urine	BACT UR	Both	0	Minutes	150	Years	None	N/A	/HPF
Bilirubin Urine	UR BILI	Both	0	Minutes	150	Years	Negative	N/A	N/A
Blood Urine	UR BLOOD	Both	0	Minutes	150	Years	Negative	N/A	mg/dL
Calcium Oxalate Crystals	CAOX CRY	Both	0	Minutes	150	Years	None	N/A	/HPF
Color Urine	UR COLOR	Both	0	Minutes	150	Years	Yellow	N/A	N/A
Glucose Qualitative Urine	UR GLUC	Both	0	Minutes	150	Years	Negative	N/A	mg/dL
Granular Cast	GRAN CAST	Both	0	Minutes	150	Years	None	N/A	/LPF
Hyaline Cast	HYAL CAST	Both	0	Minutes	150	Years	0	2	/LPF
Ketones Urine	KETONE	Both	0	Minutes	150	Years	Negative	N/A	mg/dL
Leukocyte Esterase Urine	UR LEU EST	Both	0	Minutes	150	Years	Negative	N/A	mg/dL
Mucus	MUCUS	Both	0	Minutes	150	Years	None	N/A	N/A
Nitrite Urine	UR NITRITE	Both	0	Minutes	150	Years	Negative	N/A	N/A
pH Urine	UR PH	Both	0	Minutes	150	Years	5.0	9.0	N/A
Protein Urine	UR PROT	Both	0	Minutes	150	Years	Negative	N/A	mg/dL
RBC Cast	RBC CAST	Both	0	Minutes	150	Years	None	N/A	/LPF
RBC Urine	RBC UR	Both	0	Minutes	150	Years	0	2	/HPF
Specific Gravity Urine	SGUR	Both	0	Minutes	150	Years	1.005	1.030	N/A
Squamous Epithelials Urine	SQ EPI UR	Both	0	Minutes	150	Years	0	5	/HPF
Triple Phosphate Crystals	TRIPHOCRY	Both	0	Minutes	150	Years	None	N/A	/HPF
Uric Acid Crystals	URICAC CRY	Both	0	Minutes	150	Years	None	N/A	/HPF
Urine Amorphous	AMORPH	Both	0	Minutes	150	Years	None	N/A	/HPF
Urobilinogen Urine	UR UROBILI	Both	0	Minutes	150	Years	Normal	N/A	mg/dL
Waxy Cast	WAXY CAST	Both	0	Minutes	150	Years	None	N/A	/LPF
WBC Cast	WBC CAST	Both	0	Minutes	150	Years	None	N/A	/LPF
WBC Urine	WBC UR	Both	0	Minutes	150	Years	0	5	/HPF

Amorphous, Bacteria, Casts, Crystals and Mucus only reported in Urinalysis when present

