

## Normal Lab Values

Serum Chemistries	
Na <sup>+</sup>	135-145 mEq/L
K <sup>+</sup>	3.5-5.3 mEq/L
Cl <sup>-</sup>	95-105 mEq/L
CO <sub>2</sub>	22-29 mEq/L
BUN	10-26 mg/L
Creatinine	0.6-1.3 mg/dL
Glucose	70-115 mg/dL
Mg <sup>2+</sup>	1.3-2.4 mEq/L
Ca <sup>2+</sup> total	8.5-10.5 mg/dL
Ca <sup>2+</sup> ionized	4.65-5.28 mg/dL
Phosphate	2.5-4.5 mg/dL
Uric Acid	M: 3.0-7.4 mg/dL F: 2.1-6.3 mg/dL
Osmolality	275-300 mOsm/kg
Anion Gap	7-16 mEq/L
Albumin	3.5-5.5 g/dL
Protein (total)	6.0-8.0 g/dL
Lactate	0.5-1.3 mEq/L
IgA	70-312 mg/dL
IgG	640-1350 mg/dL
IgM	56-350 mg/dL
αFP	<10 mg/mol
Zn	55-135 μg/dL

Hematology	
Hgb	M: 13.5-17.5 g/dL F: 12.0-16.0 g/dL
Hct	M: 39-49% F: 35-45%
RBCs	M: 4.3-5.7 (x10 <sup>6</sup> /μL) F: 3.8-5.1 (x10 <sup>6</sup> /μL)
Plt	150-450 x10 <sup>9</sup> /L
WBCs (differential below)	4.5-11.0 x10 <sup>3</sup> /μL
Neutrophils	57-67%
Segs	54-62%
Bands	3-5%
Lymphocytes	23-33%
Monocytes	3-7%
Eosinophils	1-3%
Basophils	0-1%
ESR	M: <15 mm/hr F: <20 mm/hr

Fe	M: 65-175 µg/dL F: 50-170 µg/dL
Fe Sat	M: 20-50% F: 15-50%
FDP	<10 µg/mL
Ferritin	M: 20-250 ng/mL F: 10-120 ng/mL
Fibrinogen	150-350 mg/dL
Haptoglobin	26-185 mg/dL
Hgb A1c	5.0-7.5%
MCH	26-34 pg
MCHC	33-37%
MCV	80-100 fl
PT	10-14 sec
aPTT	20-40 sec
Reticulocytes	0.5-1.5%
TIBC	250-400 µg/dL
Transferrin	200-400 mg/dL
TT	13-20 sec
D-dimer	≤ 250 ng/mL (DDU) ≤ 500 mcg/mL (FEU)

Liver/Pancreas	
AST	7-40 IU/L
ALT	0-40 IU/L
Alkaline Phosphatase	M: 38-126 U/L F: 70-230 U/L
Ammonia	10-50 µmol/L
Bilirubin (total)	0.2-1.0 mg/dL
Bilirubin (conjugated)	0-0.2 mg/dL
GGT	0-50 U/L
LDH	90-190 U/L
Amylase	25-125 U/L
C peptide	0.7-1.89 ng/mL
Lipase	10-140 >60yo: 10-180

Lipids	
Total Cholesterol	<200 mg/dL
LDL	<130 mg/dL
HDL	M: >29 mg/dL F: >35 mg/dL
Triglycerides	M: 40-160 mg/dL F: 35-135 mg/dL

Other	
B <sub>12</sub>	100-700 pg/mL
Folate	3-15 ng/mL
Troponin	<0.01 ng/mL
CPK	M: 38-174 U/L F: 26-140 U/L
CPK MB	<5%
BNP	100-400 pg/mL
Acid Phosphatase	<0.8 IU/mL
CA-125	<35 U/mL
Cu <sup>+</sup>	M: 70-140 µg/dL F: 80-155 µg/dL
Pb	<10 µg/dL
PSA	<4.0 ng/mL
Zn <sup>2+</sup>	70-150 µg/dL

Blood Gases	
	Arterial
pH	7.35-7.45
pCO <sub>2</sub>	35-45
pO <sub>2</sub>	80-100
HCO <sub>3</sub>	21-27
O <sub>2</sub> sat	95-99%

Urine	
pH	5-9
Minimal Volume	0.5-1.0 mg/kg/hr
Specific Gravity	1.015-1.030
Osmolality	600-1400 mOsm/kg
Creatinine	M: 14-26 mg/kg/day F: 11-20 mg/kg/day
Creatinine Clearance	M: 100-150 mL/min F: 90-140 mL/min *Rough estimate only; varies with BMI
Urea Nitrogen	12-20 g/day
Ca <sup>2+</sup>	100-200 mg/day
K <sup>+</sup>	25-125 mEq/day
Na <sup>+</sup>	40-220 mEq/day
Phosphate	0.4-1.3 g/day
Uric Acid	250-750 mg/day
Albumin	10-100 mg/day
Amylase	1-17 U/hr
Glucose	<0.5 g/day

Protein	10-100 mg/day
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CSF	
Pressure	60-180 mmH <sub>2</sub> O
WBC	0.5 / $\mu$ L
Protein	15-45 mg/dL
Glucose	40-80 mg/dL

Synovial Fluid		
WBC	<200 / $\mu$ L	
	Trauma, OA, SLE	<3,000 / $\mu$ L
	Gout, RA	>4,000 / $\mu$ L
	Septic	>60,000 / $\mu$ L
Protein	<3.0 g/dL	
Glucose	>50 mg/dL	
Uric Acid	<8.0 mg/dL	
LDH	< Serum LDH	

Endocrine	
Aldosterone	Supine: 3-10 ng/dL Upright: 5-30
Cortisol	0800h: 6-23 $\mu$ g/dL 1600h: 3-15 $\mu$ g/dL 2200h: <50% of 0800h value
Gastrin	<100 pg/mL
GH (<60yo)	M: <2 ng/mL F: <10 ng/mL
GH (>60yo)	M: <10 ng/mL F: <14 ng/mL
Estrogen	Follicular: 60-200 pg/mL Luteal: 160-400 pg/mL Menopause: $\leq$ 130 pg/mL
FSH	Follicular: 1-9 mU/mL Ovulation: 6-26 mU/mL Luteal: 1-9 mU/mL Menopause: 30-118 mU/mL
LH	Follicular: 1-12 mU/mL Mid-Cycle: 16-104 mU/mL Luteal: 1-12 mU/mL Menopause: 16-66 mU/mL
Progesterone	Follicular: 0.15-0.7 ng/mL Luteal: 2.0-25 ng/mL
Prolactin	<20 ng/mL
PTH	10-65 pg/mL

Sperm	20-200 million/mL	
Testosterone	Free	52-280 pg/mL
	Total	300-1000 ng/mL
T3	Uptake	0.82-1.18
	Total	100-200 ng/mL
T4	Free	0.3-2.3 ng/dL
	Total	5.0-12.0 µg/dL
TBG	16-34 µg/dL	
TSH	<10 µU/mL >60yo M: 2-7.3 µU/mL >60yo F: 2-16.8 µU/mL	
hCG	Not pregnant: <5mIU/mL Pregnant: ≥25mIU/mL	

Toxic Levels		
Acetaminophen	>200 µg/mL	
CO Hgb	>20%	
EtOH (non-alcoholic patient)	Intoxicated	>100 mg/dL
	Lethargic	>200 mg/dL
	Coma	>300 mg/mL
	Resp. Distress, Death	>500 mg/dL
Ethylene Glycol	>20 mg/dL	
Lead	>100 µg/dL	
MeOH	>200 mg/L	
Salicylate	>300 µg/mL	