

Blood Lead Reference Interpretation Ranges:

Blood Lead*	Comment
Less than 10.0 ug/dL	Not Lead Poisoned
10.0-14.9 ug/dL	Rescreen frequently and consider prevention activities.
15.0-19.9 ug/dL	Institute nutritional and educational interventions.
20.0-44.9	Evaluate environmental intervention and consider chelation therapy.
45.0-69.0 ug/dL	Institute environmental intervention and chelation therapy.
>69.0 ug/dL	A medical emergency.

*Elevated levels of blood lead should be confirmed with a second specimen before remedial action is initiated. Elevated capillary blood specimens should be repeated using a venous specimen because of possible contamination.

CEA Reference Range:

Non- Smokers (never smoked):	AGE	EXPECTED VALUE
	Below 40	3.8ng/mL
	40 and above	5.0ng/mL
Smoker	Below 40	5.5ng/mL
	40 and above	5.0ng/mL

D-Dimer (Quantitative) Reference Range:

Suggested reference interval is < 1.6

***Higher levels of lipids or turbid samples can lead to falsely elevated or decreased values.

***This test should not be used for patients receiving anticoagulation therapy.

Drugs Of Abuse, Urine Reference Range:

– Interpretive comments –

Detection limits:

Tricyclic antidepressants	300 ng/mL
Barbiturates	200 ng/mL
Methadone	300 ng/mL
Benzodiazepines	300 ng/mL
Cannabinoids	300 ng/mL
Opiates	300 ng/mL
Amphetamines	1000 ng/mL
Cocaine metabolite	300 ng/mL
Phencyclidine	25 ng/mL

The 9 panel provides a preliminary analytical test result. A more specific alternate chemical method must be used in order to obtain a confirmed analytical result. Gas chromatography/ mass spectrometry (GC/MS) or high performance liquid chromatography (HPLC) is the preferred confirmatory method.

Estradiol Reference Range:

Women:

-Follicular Phase	12.5-166 pg/mL
-Ovulation Phase	85.8-498 pg/mL
-Luteal Phase	43.8-211 pg/mL
-Postmenopausal	<5.00-54.7 pg/mL

Boys(1-10yrs): <5.00-20.0 pg/mL

Girls(1-10yrs): 6.0-27.0 pg/mL

Men 7.63-42.6 pg/mL

Ferritin Reference Range:

	Age	Interval
Males	18-30	18.7-323.0 ng/mL
Males	31-60	16.4-293.0 ng/mL
Females (pre-menopausal)		6.9-282.5 ng/mL
Females (post menopausal)		14.0-233.1 ng/mL

FSH Reference Ranges:

Men: 4.6-12.4 mIU/mL

Women:

Follicular Phase 6.9-12.5 mIU/mL

Ovulation Phase 12.3-21.5 mIU/mL

Luteal Phase 3.6-7.7 mIU/mL

Postmenopause 67.0-134.8 mIU/L

Gentamicin Peak Therapeutic Reference Ranges:

Soft tissue infections:	6-8 mcg/mL
Pulmonary infections:	8-10 mcg/mL
Urinary tract infections	4-6 mcg/mL
Synergy against gram-positive organisms:	3-5 mcg/mL
Pulmonary coverage for Cystic Fibrosis:	8-12 mcg/mL

Monitor serum creatinine and urine output; obtain drug levels after the third dose unless otherwise directed.

Gentamicin Trough Therapeutic Reference Ranges:

Serious infections:	0.5-1 mcg/mL
Neutropenia infections:	1-2 mcg/mL

The American Thoracic Society (ATS) recommends trough levels of <1 mcg/mL for patients with hospital-acquired pneumonia. Monitor serum creatinine levels and urine output; obtain drug levels after third dose unless otherwise directed.

hCG, Quantitative Reference Ranges:

The concentration of B-HCG in maternal serum rises rapidly during early pregnancy. B-HCG levels between 2mIU/mL and 25mIU/ml may be indicative of early pregnancy. Correlation with other clinical findings (e.g. date of last menstrual period, results of pelvic examination, ect) should be sought in evaluating the determined B-HCG levels. If necessary, an additional blood sample should be drawn 48 hours later for quantitative B-HCG assay testing. Values for B-HCG generally peak during the first trimester and decline slowly throughout the remainder of the pregnancy. A sharply reduced or falling serum B-HCG level may indicate an abnormal pregnancy and additional clinical evaluation and follow-up may be appropriate. HCG ranges during normal pregnancy, as reported in the literature, are summarized below.

Approximate Gestational Age	Approximate HCG Range (mIU/mL)
0 - 1 Week	0 - 50
1 - 2 Weeks	40 - 300
2 - 3 Weeks	100 - 1,000
3 - 4 Weeks	500 - 6,000
1 - 2 Months	5,000 - 200,000
2 - 3 Months	10,000 - 100,000
2nd Trimester	3,000 - 50,000
3rd Trimester	1,000 - 50,000

INR Reference Ranges:

INR (International Normalized Ratio) is a standardized system of prothrombin time reporting designed to correct variations in different instruments and reagents used in various testing laboratories.

Indications	INR	Prottime
Prophylaxis of venous Thrombo-embolism:		
Non-hip surgery	1.5-2.5	12-14
Hip surgery	2.0-3.0	13-15
Treatment of deep vein thrombosis or pulmonary embolism	2.0-3.0	12-15
Prevention of systemic embolism in valvular heart disease, tissue prosthetic heart valves or acute MI	2.0-3.5	2-15
Prevention of embolism in mechanical heart valves or recurrent systemic embolism	3.0-4.5	15-20

Iron messages:

Sample should be drawn fasting in the morning (Circadian Rhythm affects iron). Values may decrease 30% or more During the day.

Iron values may be falsely elevated in serum samples from patients treated with anticoagulants (e.g., hemodialysis patients). Turbidity resulting from precipitation of fibrinogen in the serum of patients treated with anticoagulants (e.g., hemodialysis patients) may cause spuriously elevated iron results.

Lipid Testing Reference Interpretation Ranges:

Elevations of triglycerides can be seen with:

- | | | |
|----------------------|------------------------|-------------------------------|
| 1. Obesity | 4. Hypotension | 7. Fasting less than 12 hours |
| 2. Alcohol Intake | 5. Renal/Liver Disease | |
| 3. Diabetes Mellitis | 6. Certain Drugs | |

CAD Risk Assessment Based on Total and LDL Cholesterol

	DESIRABLE	BORDERLINE	HIGH
Total Cholesterol	<200	200-240	>240 mg/dL
HDL Cholesterol	>60	36-59	<35 mg/dL
LDL Cholesterol	<130	130-159	>160 mg/dL

Additional CAD Risk Factors include:

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|------------------------------------|--|
| 1. Definite Coronary Heart Disease | 6. Diabetes Mellitis |
| 2. Smoking | 7. Obesity (Greater than 30% overweight) |
| 3. Hypertension | 8. Male Sex |
| 4. History of Stroke | 9. Family history of premature CAD, MI, or sudden death before age 55. |
| 5. HDL of less than 35 mg/dL | |

Lutenizing Hormone Reference Range:

Male:	4.6-8.6 mIU/mL
Women:	
Follicular Phase:	5.9-12.6 mIU/mL
Ovulation Phase:	30.8-95.6 mIU/mL
Luteal Phase:	4.3-11.4 mIU/mL
Postmenopausal:	29.1-58.5 mIU/mL

NT-proBNP Interpretation Reference Range:

Years of age	Negative	Gray Zone	Positive
< 50	<300	300-450	> 450
50 – 74	<300	300-900	> 900
> or = 75	<300	300-1800	>1800

Tobramycin, Peak Reference Ranges:

Therapeutic Ranges:

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Tobramycin, Trough Reference Ranges:

Serious infections:	0.5-1 mcg/mL
Neutropenia infections:	1-2 mcg/mL

The American Thoracic Society (ATS) recommends trough levels or <1 mcg/mL with hospital-acquired pneumonia.

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Urine Microalbumin Reference Range:

Category	24 HR Collection (ug/mg) Creatinine	Spot Collection (ug/mg) Creatinine
Normal	< 30	< 30
Microalbuminuria	30-299	30-299
Clinical Albuminuria	> OR = 300	> OR = 300

Because of variability in urinary albumin excretion, two of three specimens collected within a 3-6 month period should be abnormal before considering a patient to have crossed one of these diagnostic thresholds. Exercise within 24 hours, infection, congestive heart failure, marked hyperglycemia, marked hypertension, pyruvia, and hematuria may elevate urinary albumin excretion over baseline values.

Urine Calcium Reference Range:

Calcium-free diet	5-40 MG/DAY
Low to average calcium intake	50-150 MG/DAY
Normal calcium intake	100-300 MG/DAY

Progesterone II

Men:	0.2-1.4 ng/mL
Women:	
Follicular:	0.2-1.5 ng/mL
Ovulation:	0.8-3.0 ng/mL
Luteal:	1.7-27 ng/mL
Postmenopause:	0.1-0.8 ng/mL

Glomerular Filtration Rate

Interpretation for Chronic Kidney Disease

Stage 1	GFR >90
Stage 2	GFR 60-89
Stage 3	GFR 30-59
Stage 4	GFR 15-29
Stage 5	GFR <15