

Critical Values

The values listed below are for tests performed at Meriter Laboratories (ML) and other reference laboratories. On a ML report, any numerical values outside the reference range are indicated by an “L” (low) or an “H” (high) to the right of the result number. Where such a value is considered critical, the letter “C” will precede the “L” or “H.” An abnormal textual result is indicated by an “AB” to the right of the result. Any laboratory test value which is life-threatening and probably requires medical intervention within a short period of time is considered a critical value. It is ML’s policy to telephone these results to our clients, as well as critical results received from referral testing laboratories. A list of critical values follows.

Analyte	Critically Low Value	Critically High Value
Acetaminophen (Tylenol®)		≥50 mcg/mL
Acetone		>5 mg/dL
Activated Partial Thromboplastin Time (APTT), Blood or Plasma		>200.0 seconds
Alcohol (Medical/Non-Legal), Plasma		≥300 mg/dL
Amikacin, Peak, Plasma		>35.0 mcg/mL
≥18 years		
Amikacin, Trough, Plasma		>5.0 mcg/mL
≥18 years		
Amitriptyline and Nortriptyline		≥300 ng/mL
Amylase, Plasma		≥400 U/L
Bilirubin, Total, Plasma		
≤2 Days		≥12.0 mg/dL
3 Days - ≤7 days		≥15.0 mg/dL
>7 days		≥10.0 mg/dL
Bilirubin, Total, Whole Blood		
≤2 Days		≥12.0 mg/dL
3 Days - ≤7 days		≥15.0 mg/dL
>7 days		≥10.0 mg/dL
Blood Urea Nitrogen (BUN), Plasma		≥100 mg/dL
Calcium, Ionized, Plasma	≤0.85 mmol/L	≥1.40 mmol/L
Calcium, Plasma	≤6.0 mg/dL	≥13.0 mg/dL
Calcium, Serum	≤6.0 mg/dL	≥13.0 mg/dL
Carbamazepine (Tegretol®), Plasma		≥15 mcg/mL

Analyte	Critically Low Value	Critically High Value
Carbon Monoxide (CO), Carboxyhemoglobin, Venous		$\geq 20.0\%$ of CO Hb ₂
Creatine Kinase (CK), Total, Plasma		≥ 400 U/L
Creatinine, Plasma		≥ 10.0 mg/dL
Creatinine, Whole Blood		≥ 10.0 mg/dL
Cord Blood Gases, pH	≤ 7.0	
Cord Blood Gases, Base Excess	≤ -12	
Digoxin, Plasma		≥ 2.5 ng/mL
Ethylene Glycol		> 2 mg/dL
Gentamicin, Peak, Plasma		≥ 12.0 mcg/mL
Gentamicin, Trough, Plasma		≥ 3.0 mcg/mL
Glucose, Plasma		
≤ 3 months	≤ 35 mg/dL	≥ 325 mg/dL
> 3 months - ≤ 1 year	≤ 45 mg/dL	≥ 450 mg/dL
> 1 year	≤ 69 mg/dL	≥ 450 mg/dL
Glucose, Whole Blood		
≤ 3 months	≤ 35 mg/dL	≥ 325 mg/dL
> 3 months - ≤ 1 year	≤ 45 mg/dL	≥ 450 mg/dL
> 1 year	≤ 69 mg/dL	≥ 450 mg/dL
Glucose, Meter Correlation (GLMTR)	Difference of $\geq 15\%$	
Hematocrit, Blood	$\leq 21.0\%$	
Hemoglobin, Blood	≤ 7.0 g/dL	≥ 20 g/dL
≤ 30 days	≤ 7.0 g/dL	≥ 24.0 g/dL
Heparin Induced Platelet Antibody, Plasma		All positive or borderline results
Imipramine and Desipramine		≥ 300 ng/mL
INR (Prothrombin Time [PT]), Blood or Plasma		≥ 4.5
Isopropanol		> 5 mg/dL
Lactate, Arterial		> 4.0 mmol/L
Lactate, Venous		> 4.0 mmol/L
Lithium, Serum		≥ 2.0 mmol/L
Magnesium, Plasma	≤ 1.0 mg/dL	≥ 8.0 mg/dL
Magnesium, OB	≤ 1.0 mg/dL	≥ 9.0 mg/dL
Methanol		> 10 mg/dL



Analyte	Critically Low Value	Critically High Value
Nortriptyline		≥300 ng/mL
Osmolality, Plasma or Serum	≤240 mOsm/kg	≥340 mOsm/kg
pH, Venous	<7.25	>7.65
Phenobarbital, Plasma		≥50 mcg/mL
Phenytoin (Dilantin®), Total, Plasma		≥30 mcg/mL
Phenytoin, Unbound, Serum		>3.0 mcg/mL
Phosphorus, Plasma		
≤10 days	≤1.0 mg/dL	≥12.0 mg/dL
>10 days	≤1.0 mg/dL	≥8.0 mg/dL
Platelet Count, Blood	≤25 thou/μL	≥1,000 thou/μL
Potassium, Plasma	≤2.8 mmol/L	≥6.0 mmol/L
Potassium, Serum	≤2.8 mmol/L	≥6.0 mmol/L
Potassium, Whole Blood	≤2.8 mmol/L	≥6.0 mmol/L
Salicylate, Plasma		≥50 mg/dL
Sodium, Plasma	≤120 mmol/L	≥155 mmol/L
Tacrolimus, Whole Blood		>15 ng/mL
Theophylline, Plasma		≥20 mcg/mL
Thiopental, Serum		>5.0 mg/dL
Thiopental Pentobarbital		1.0-2.0 mg/dL
Troponin T Gen 5 (High Sensitivity)		>100 ng/L
Tobramycin, Peak, Plasma		≥12.0 mcg/mL
Tobramycin, Trough, Plasma		≥3.0 mcg/mL
Valproate, Unbound, Serum		>150.0 mcg/mL
Valproate (Valproic Acid), Plasma		≥150.0 mcg/mL
Vancomycin, Mid-Point, Plasma		≥50.0 mcg/mL
Vancomycin, Peak, Plasma		≥60.0 mcg/mL
Vancomycin, Random, Plasma		≥50.0 mcg/mL
Vancomycin, Trough, Plasma		≥20.0 mcg/mL
WBC (White Blood Count), Blood	<1.0 thou/μL	>50.0 thou/μL

Microbiology

For certain serious bacterial infections, speed in initiating proper antibiotic therapy can significantly influence the course of the disease. As soon as the laboratory becomes aware of a serious or potentially serious infection fitting the circumstances below, the physician or source facility will be telephoned.

Critical Result	
Blood Culture	All positive cultures
Cerebrospinal Fluid	All bacteria or fungi detected by Gram Stain, culture, first positive antigen, or molecular testing.
All Body Sites	All positive acid-fast bacilli smears and any positive cultures for <i>Mycobacterium species</i> .
Sterile body fluids/sites (eg, joint, pericardial, or tissue biopsies)	All bacteria or fungi detected by Gram Stain, culture, first positive antigen, or molecular testing.

Other important pathogens will be reported by telephone when detected. Even though they may not cause life-threatening infections, they may require Isolation Precautions or change in treatment and are to be reported to the physician.

These include:

Feces	Positive <i>Clostridium difficile</i> Positive <i>Escherichia coli</i> O157 or positive shiga toxin EIA tests <i>Salmonella</i> <i>Shigella</i> <i>Campylobacter</i> Positive <i>Norovirus</i>
Multi-resistant organisms isolated	Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) and vancomycin resistant <i>Enterococcus</i> (VRE) MDR Gram negative rods Carbapenamase resistant gram negative rods
Nasopharyngeal- Inpatients or Resident Facilities	Positive pertussis tests, respiratory syncytial virus (RSV), or influenza.
<i>Legionella</i>	All positive results regardless of source