

Clinical Laboratory Critical Values

(Effective June 5, 2024)

Blood Bank
Hemolytic Transfusion Reactions
Acute Hemolysis detected during a Transfusion Reaction Workup
Positive culture of a unit recently transfused (within 1 week)
Incompatible crossmatch completed after emergency issue of uncross-matched RBC
Unexpected antibody in a patient in the OR
Issue or transfusion of: <ul style="list-style-type: none"> ▪ the wrong unit ▪ an incompatible unit ▪ incorrectly labeled (wrong patient) unit
Positive Direct Antibody Testing on a Neonatal Venous or Cord Blood specimen
An unacceptable sample because of the wrong blood-in-tube was identified by comparison with the historical type and after type confirmation.

Clinical Chemistry		
Test	Low	High
Adult		
Arterial or capillary blood pCO ₂		70 mm Hg
Arterial or capillary blood pH	7.15	7.6
Arterial or capillary blood pO ₂	40 mmHg	
Bicarbonate (Total Carbon Dioxide)	10mmol/L	40mmol/L
Calcium	6.0 mg/dL	13.0 mg/dL
Ionized Calcium	3.0mg/dL	6.5 mg/dL
Glucose, > 1year	50 mg/dL	500 mg/dL
Phosphorus	1.0 mg/dL	10.0 mg/dL
Potassium	2.5 mEq/L	6.2mEq/L
Sodium	120 mEq/L	160 mEq/L

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Magnesium	<1 mg/dL	>5 mg/dL
Osmolality	250 mosm/Kg	320 mosm/Kg
Glucose (tolerance)	<60 mg/dL	>500 mg/dL
CSF Glucose	<20 mg/dL	
CSF Protein		>300mg/dL
FreeT4		>3.5 ng/dL
Plasma Troponin		≥0.04 ng/mL, first positive within 48 hours
Pediatric		
(Pediatric Critical Values are the same as adults, except for the following)		
Ammonia		> 150 mcmol/L
Total Bilirubin: Neonates only(Less than or equal to 30 days)		>18 mg/dL
Glucose, newborn < 30 days	30 mg/dL	200 mg/dL
Glucose, newborn 30 days - 1 year	30 mg/dL	300 mg/dL
Potassium, newborn < 10 days	2.0 mEq/L	7.0 mEq/L
Sodium, newborn< 30 days	125 mEq/L	160 mEq/L

Therapeutic Drug Monitoring/Toxicology

Test	Low	High
Adult		
Digoxin		4.0 ng/mL
Lithium		2.0 mEq/L
Ethanol (Ethanol, ETH, Blood alcohol)		400 mg/dL
Acetaminophen (ACE, Tylenol)		70mcg/mL
Salicylates (USA, Salicylates screen)		50 mg/dL
Ethylene Glycol (EG, Antifreeze)		5 mg/dL if initial sample
Iso-propanol (ISP, Rubbing alcohol)		10 mg/dL if initial sample
Methanol (MTH, Wood Alcohol)		10 mg/dL if initial sample
Theophylline (THE, Elixophyllin)		25 mcg/mL

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Phenytoin (Dilantin)		40 mcg/mL
Carbamazepine (Tegretol)		20 mcg/mL
Phenobarbital		60 mcg/mL
Valproic acid (Depakene, Depakote, Valproate)		200 mcg/mL
Vancomycin		≥30 mcg/mL
Lidocaine		>5 mg/L

Coagulation		
Test	Low	High
Adult		
Prothrombin Time/INR (PT)		INR > 6.0
PTT - Partial Thromboplastin Time (aPTT, Activated Partial Thromboplastin Time)		≥ 200 sec.
Fibrinogen	≤60 mg/dL	
Unfractionated heparin		> 1 U/ml
Low molecular weight heparin		> 1.7 U/ml

Hematology		
Test	Low	High
Adult		
Hematocrit (Packed cell volume, PCV)	< 18 %	> 69 and <2 mo of age, >54 and > 2mo of age and no previous within 7 days
Hemoglobin	< 6 gm/dL	
White Blood Cell (WBC)	< 1000/μL and no previous within 30 days	> 100,000 /μL and no previous within 30 days
Platelets (PLT)	< 30,000/μL and no prev. within 7 days. <5000/ul always called regardless of previous	

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Peripheral smear differential	Blasts - Adults > 5%, Blasts - Children > 10%
Peripheral smear morphology	Red cell fragments with decreased platelets on smear. (<50,000 or a 50% change)
CSF (Cerebrospinal Fluid)	Presence of Cryptococcal-like yeast or intracellular bacteria