

Mayo Clinic Laboratories  
ARZ, FLA, MCHS, RST

## DLMP Critical Values / Critical Results List

### PURPOSE

The purpose of this list is to identify the laboratory tests and their respective critical high and critical low values/results. This list pertains to testing that is performed in Rochester, Arizona, Florida, Mayo Clinic Health System (MCHS) and MML performing sites.

### A Critical Value / Critical Result is defined as

A value/result that represents a pathophysiological state at such variance with normal (expected values) as to be life-threatening unless something is done promptly and for which some corrective action could be taken.

**NOTE:** The critical values/results do not necessarily correspond directly with normal reference ranges, toxic ranges, or therapeutic ranges.

**NOTE:** In addition to the critical values identified on this list, critical alerts from testing referred to outside laboratories (non-Mayo) will be communicated to clients in accordance with notification standards once those performing laboratories notify Mayo.

### HEMATOLOGY

Test Report Name	Age	Critical Low	Critical High	Units
Activated Partial Thromboplastin Time, Plasma		-	≥ 150	sec
Fibrinogen		≤ 60	-	mg/dL
Hemoglobin	0-7 weeks	≤ 6.0	≥ 24.0	g/dL
Hemoglobin	> 7 weeks	≤ 6.0	≥ 20.0	g/dL
INR (International Normalizing Ratio)		-	≥ 5.0	
Leukocytes		-	≥ 100.0	x10(9)/L
Absolute Neutrophil Count		≤ 0.5	-	x10(9)/L
Neutrophils		≤ 0.5	-	x10(9)/L
Platelets, Blood		≤ 40	≥ 1000	x10(9)/L
CSF White Blood Cell Count			≥ 100.0	Cells/mcL

**CHEMISTRY**

<b>Test Report Name</b>	<b>Age</b>	<b>Critical Low</b>	<b>Critical High</b>	<b>Units</b>
Ammonia – (Florida units are $\mu\text{mol/L}$ , MCHS&RST units are $\text{mcmol/L}$ )	$\geq 1$ yr	-	$\geq 200$	$\text{mcmol/L}$
*Ammonia – Arizona (Deviation in units)	$\geq 1$ yr		$\geq 500$	$\text{mcg/dL}$
Ammonia – (Florida units are $\mu\text{mol/L}$ , MCHS&RST units are $\text{mcmol/L}$ )	$< 1$ yr	-	$\geq 100$	$\text{mcmol/L}$
*Ammonia – Arizona (Deviation in units)	$< 1$ yr		$\geq 150$	$\text{mcg/dL}$
Bilirubin Total, Serum	$< 1$ yr	-	$\geq 15.0$	$\text{mg/dL}$
Calcium, Total		$\leq 6.5$	$\geq 13.0$	$\text{mg/dL}$
Calcium, Ionized, Blood	$< 1$ yr	$\leq 2.0$	$\geq 6.0$	$\text{mg/dL}$
Calcium, Ionized, Blood	$\geq 1$ yr	$\leq 3.0$	$\geq 6.5$	$\text{mg/dL}$
*Calcium, Ionized, Blood - Florida (Deviation due to methodology difference)	$< 1$ yr	$\leq 3.0$	$\geq 5.5$	$\text{mg/dL}$
*Calcium, Ionized, Blood - Florida (Deviation due to methodology difference)	$\geq 1$ yr	$\leq 3.0$	$\geq 6.0$	$\text{mg/dL}$
Carbon Monoxide (Carboxyhemoglobin Level)		-	$\geq 20$	%
Creatinine, Blood/Plasma/Serum	1 day-4 weeks	-	$\geq 1.5$	$\text{mg/dL}$
Creatinine, Blood/Plasma/Serum	5 weeks-23 mos	-	$\geq 2.0$	$\text{mg/dL}$
Creatinine, Blood/Plasma/Serum	2 yrs-11 yrs	-	$\geq 2.5$	$\text{mg/dL}$
Creatinine, Blood/Plasma/Serum	12 yrs-15 yrs	-	$\geq 3.0$	$\text{mg/dL}$
Creatinine, Blood/Plasma/Serum	$\geq 16$ yrs	-	$\geq 10.0$	$\text{mg/dL}$
Creatine Kinase, Total		-	$\geq 10,000$	U/L
FT4 (Free Thyroxine)	$< 50$ yrs	-	$\geq 7.8$	$\text{ng/dL}$
FT4 (Free Thyroxine)	$\geq 50$ yrs	-	$\geq 6.0$	$\text{ng/dL}$
FT4 (Free Thyroxine) – Florida	All ages	-	$\geq 7.8$	$\text{ng/dL}$
Glucose, Plasma/Serum	$< 4$ weeks	$\leq 40$	$\geq 400$	$\text{mg/dL}$
Glucose, Plasma/Serum	$\geq 4$ weeks	$\leq 50$	$\geq 400$	$\text{mg/dL}$
Magnesium, Serum		$\leq 1.0$	$\geq 9.0$	$\text{mg/dL}$
Osmolality		$\leq 190$	$\geq 390$	$\text{mOsm/Kg}$
*pH (MCHS and AZ only)		$\leq 7.200$	$\geq 7.600$	pH
*pCO <sub>2</sub> , arterial (MCHS and AZ only)		$\leq 20.0$	$\geq 70.0$	$\text{mmHg}$
*pO <sub>2</sub> (MCHS)		$\leq 40.0$	-	$\text{mmHg}$
*pO <sub>2</sub> (AZ)		$\leq 45.0$	-	$\text{mmHg}$
Phosphorus		$\leq 1.0$	-	$\text{mg/dL}$
Potassium		$\leq 2.5$	$\geq 6.0$	$\text{mmol/L}$
Sodium		$\leq 120$	$\geq 160$	$\text{mmol/L}$

**TOXICOLOGY/TDM**

Test Report Name	Age	Critical Low	Critical High	Units
Acetaminophen, S		-	> 150 4 hours after dose	mcg/mL
Acetone (Volatile Screen), applies to all specimen types		-	Any value detected	mg/dL
Amitriptyline and Nortriptyline, S		-	> 500	ng/mL
Butalbital, S		-	≥ 10	mcg/mL
Caffeine, S		-	≥ 30	mcg/mL
Carbamazepine, Total, S		-	≥ 15.0	mcg/mL
Carbamazepine, Free, S		-	≥ 4.0	mcg/mL
Clomipramine + Norclomipramine, S		-	> 450	ng/mL
Cyanide, B		-	≥ 2.0	mcg/mL
Desipramine, S		-	>400	ng/mL
Digoxin, S		-	≥ 4.0	ng/mL
Disopyramide, S		-	≥ 7.0	mcg/mL
Doxepin and Nordoxepin, S		-	> 500	ng/mL
Ethanol, Blood		-	≥ 400	mg/dL
Ethanol, Serum		-	≥ 400	mg/dL
Ethosuximide, S		-	> 150	mcg/mL
Ethylene Glycol, S		-	≥ 20	mg/dL
Imipramine and Desipramine, S		-	> 400	ng/mL
Isopropanol (Volatile Screen), applies to all specimen types		-	Any value detected	mg/dL
Lidocaine, S		-	> 6.0	mcg/mL
Lead, Blood	0 – 15 yrs	-	≥ 20	mcg/dL
Lead, Blood	≥ 16 yrs	-	≥ 70	mcg/dL
Lithium, S		-	> 1.6	mmol/L
Methanol (Volatile Screen), applies to all specimen types		-	Any value detected	mg/dL
Nortriptyline, S		-	> 500	ng/mL
Phenobarbital, S		-	≥ 60.0	mcg/mL
Phenytoin, Total, S		-	≥ 30.0	mcg/mL
Phenytoin, Free, S		-	≥ 2.5	mcg/mL
Primidone and Phenobarbital, S		-		
Primidone			≥ 15.0	mcg/mL
Phenobarbital			≥ 60.0	mcg/mL
Procainamide, S		-		
Procainamide			> 12	mcg/mL
N-Acetylprocainamide			≥ 40	mcg/mL
Quinidine, S		-	≥ 6.0	mcg/mL
Salicylates, S		-	≥ 50.0	mg/dL
Theophylline, S		-	> 20	mcg/mL
Trimipramine, S		-	> 500	ng/mL
Valproic Acid, Free and Total, S		-		
Free Valproic Acid			> 30	mcg/mL
Total Valproic Acid			≥ 151	mcg/mL
Valproic Acid, Total, S		-	≥ 151	mcg/mL

**MICROBIOLOGY**

<b>Result</b>	<b>Specimen source and patient details</b>
Detection (e.g., stain, culture, PCR, antigen detection) of a clinically significant bacterium, fungus, parasite, or virus (except HIV and hepatitis A through E virus)	Blood, cerebrospinal fluid, brain tissue, amniotic fluid, ocular fluid/corneal scrapings
Identification/detection of a select agent (or other highly pathogenic organism) including, but not limited to <i>Bacillus anthracis</i> , <i>Brucella</i> species, <i>Burkholderia mallei</i> , <i>Burkholderia pseudomallei</i> , <i>Clostridium botulinum</i> , <i>Corynebacterium diphtheriae</i> , <i>Coxiella burnetii</i> , <i>Francisella tularensis</i> , monkeypox virus, variola virus, <i>Vibrio cholerae</i> , or <i>Yersinia pestis</i> . In the event of an outbreak of a novel contagious microorganism, detection of such an organism may fall into this category.	Any specimen tested
Detection of clinically significant fungi including, but not limited to members of the Zygomycetes class, dimorphic fungal pathogens ( <i>Histoplasma capsulatum</i> , <i>Blastomyces dermatitidis</i> , or <i>Coccidioides</i> species), <i>Cryptococcus neoformans</i> , <i>Cryptococcus gattii</i> , or <i>Pneumocystis jiroveci</i>	Any specimen tested
Detection of <i>Strongyloides stercoralis</i> larvae	Non-intestinal specimen
Detection of herpes simplex virus or <i>Bordetella pertussis</i>	Any specimen tested from a neonate (< 1 month)