



**Pediatric Blood Gases, Critical Care Panel, Pediatric Transport and  
ECMO Age Related Reference Ranges and Critical Values**

TEST	SEX	AGE	REFERENCE RANGE	CRITICAL VALUE	
Base Excess	M/F	All Ages	-3.0 to 3.0	None defined	
Bicarbonate	M/F	All Ages	17-28 mmol/L	<b>ECMO ONLY</b>	
				<b>Low</b> <17 mmol/L	<b>High</b> >33 mmol/L
Calcium, Ionized, Respiratory Therapy	M/F	0 - 1 day 1 - 2 days ≥2 days	1.08-1.28 mmol/L 1.00-1.18 mmol/L 1.12-1.26 mmol/L	<b>Low</b> <0.76 mmol/L	<b>High</b> >1.49 mmol/L
Carboxyhemoglobin, Arterial and Venous Blood	M/F	All Ages	0.5-1.5%	<b>Low</b> None defined	<b>High</b> >20.0%
Cord Blood, Arterial pH pCO <sub>2</sub> pO <sub>2</sub>	M/F	All Ages	7.16-7.38 35-60 mmHg 7-23 mmHg	<7.16 None defined None defined	
Chloride	M/F	0 - 1 month 1 month - 90 years ≥90 years	98-113 mmol/L 98-107 mmol/L 98-111 mmol/L	<b>Low</b> <76 mmol/L	<b>High</b> >125 mmol/L
Cord Blood, Venous pH pCO <sub>2</sub> pO <sub>2</sub>	M/F	All Ages	7.18-7.41 26-52 mmHg 15-40 mmHg	None defined None defined None defined	
ECMO, Arterial pH pCO <sub>2</sub> pO <sub>2</sub>	M/F	All Ages	7.35-7.45 34-46 mmHg 150-500 mmHg	<b>Low</b> <7.31 <27mmHg <91 mmHg	<b>High</b> >7.54 >59 mmHg None defined
ECMO, Venous pH pCO <sub>2</sub> pO <sub>2</sub>	M/F	All Ages	7.33-7.43 39-54 mmHg 30-40 mmHg	<b>Low</b> <7.31 <27 mmHg None defined	<b>High</b> >7.54 >59 mmHg None defined
Glucose	M/F	<1 day 1- 30 days 1 - 11 months 1- 59 years 60 - 89 years ≥ 90 years	40-60 mg/dL 50-80 mg/dL 60-99 mg/dL 74-99 mg/dL 82-99 mg/dL 75-99 mg/dL	<b>Low</b> <31 mg/dL <31 mg/dL <51 mg/dL <51 mg/dL <51 mg/dL <51 mg/dL	<b>High</b> >299 mg/dL >299 mg/dL >499 mg/dL >499 mg/dL >499 mg/dL >499 mg/dL



**LEGACY  
LABORATORY  
SERVICES**

TEST	SEX	AGE	REFERENCE RANGE	CRITICAL VALUE	
<b>Hematocrit</b>	M/F	0 - 2 weeks	42-68%	<b>Low</b> <30%	<b>None</b>
	M/F	2 weeks - 2 months	35-50%	<18%	
	M/F	2 months - 1 year	30-40%	<18%	
	M/F	1 - 5 years	32-42%	<18%	
	M	>5 years	40-52%	<18%	
	F	>5 years	35-46%	<18%	
<b>Hemoglobin</b>	M/F	0 - 2 months	14.0-18.0 g/dL	<b>Low</b> <10 g/dL	<b>None</b>
	M/F	2 months - 11 years	11.0-14.0 g/dL	<6.0 g/dL	
	M	>11 years	13.6-18.0 g/dL	<6.0 g/dL	
	F	>11 years	11.5-16.0 g/dL	<6.0 g/dL	
<b>Lactate</b>	All	0 min – 150 years	0.5-2.0 mmol/L	<b>Low</b> None defined	<b>High</b> >2.0 mmol/L
<b>Oxygen Saturation, Arterial Blood</b>	M/F	All Ages	94-99%	<b>Low</b> <76%	<b>High</b> None defined
<b>Oxygen Saturation, Venous Blood</b>	M/F	All Ages	60-85%	None defined	None defined
<b>pH, Arterial Blood</b>	M/F			<b>Low</b>	<b>High</b>
		All Ages	7.35-7.45	<7.22	>7.59
<b>pH, Capillary</b>	M/F			<b>Low</b>	<b>High</b>
		All Ages	7.35-7.45	<7.22	>7.59
<b>pH, Venous Blood</b>	M/F			<b>Low</b>	<b>High</b>
		All Ages	7.33-7.43	<7.22	>7.59
<b>pH, Scalp</b>	M/F			<b>Low</b>	<b>High</b>
			7.25-7.50	<7.21	>7.59
<b>pCO<sub>2</sub>, Arterial Blood</b>	M/F			<b>Low</b>	<b>High</b>
		All Ages	34-46 mmHg	<21 mmHg	>69 mmHg
<b>pCO<sub>2</sub>, Capillary</b>	M/F			<b>Low</b>	<b>High</b>
		All Ages	34-46 mmHg	<21 mmHg	>75 mmHg
<b>pCO<sub>2</sub>, Venous Blood</b>	M/F			<b>Low</b>	<b>High</b>
		All Ages	39-54 mmHg	<11 mmHg	>69 mmHg
<b>pO<sub>2</sub>, Arterial Blood</b>	M/F	0 - 1 month	80-100 mmHg	<b>Low</b> <41 mmHg	<b>High</b> None defined
		≥1 month	80-100 mmHg	<51 mmHg	
<b>pO<sub>2</sub>, Capillary</b>	M/F	All Ages	80-100 mmHg	<b>Low</b> <25 mmHg	<b>High</b> None defined
<b>pO<sub>2</sub>, Venous Blood</b>	M/F	All Ages	25-43 mmHg	None defined	
<b>Potassium</b>	M/F	0 - 1 year	3.7-5.9 mmol/L	<b>Low</b> <2.9 mmol/L	<b>High</b> >7.4 mmol/L
		>1 year	3.6-5.0 mmol/L	<2.9 mmol/L	



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TEST	SEX	AGE	REFERENCE RANGE	CRITICAL VALUE	
				Low	High
Sodium	M/F	0 - 1 year	133-146 mmol/L	<126 mmol/L	>149 mmol/L
		1 - 12 years	138-145 mmol/L	<121 mmol/L	>159 mmol/L
		>12 years	136-145 mmol/L	<121 mmol/L	>159 mmol/L