



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

TEST	SEX	AGE	REFERENCE RANGE	CRITICAL VALUE	
<b>Base Excess</b>	M/F	All Ages	-3.0 to 3.0	None defined	
<b>Bicarbonate</b>	M/F	All Ages	22-26 mmol/L	None defined	
<b>Calcium, Ionized, Respiratory Therapy</b>	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
<b>Carboxyhemoglobin, Arterial and Venous Blood</b>	M/F	All Ages	0.5-1.5%	<b>Low</b> None defined	<b>High</b> >20.0%
<b>Cord Blood, Arterial pH pCO<sub>2</sub> pO<sub>2</sub></b>	M/F	All Ages	7.16-7.38 35-60 mmHg 7-23 mmHg	<7.16 None defined None defined	
<b>Chloride</b>	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
<b>Cord Blood, Venous pH pCO<sub>2</sub> pO<sub>2</sub></b>	M/F	All Ages	7.18-7.41 26-52 mmHg 15-40 mmHg	None defined None defined None defined	
<b>ECMO, Arterial pH pCO<sub>2</sub> pO<sub>2</sub></b>	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
<b>ECMO, Venous pH pCO<sub>2</sub> pO<sub>2</sub></b>	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



**LEGACY  
LABORATORY  
SERVICES**

TEST	SEX	AGE	REFERENCE RANGE	CRITICAL VALUE	
<b>Glucose</b>	M/F	0 - 1 day	40-60 mg/dL	<b>Low</b> <31 mg/dL	<b>High</b> >299 mg/dL
		1 day - 1 month	50-80 mg/dL	<31 mg/dL	>299 mg/dL
		1 month - 1 year	60-100 mg/dL	<51 mg/dL	>499 mg/dL
		1- 60 years	74-100 mg/dL	<51 mg/dL	>499 mg/dL
		60 – 90 years	82-115 mg/dL	<51 mg/dL	>499 mg/dL
		≥ 90 years	75-121 mg/dL	<51 mg/dL	>499 mg/dL
<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	All Ages	7.35-7.45	<b>Low</b> <7.22	<b>High</b> >7.59
		All Ages	7.35-7.45	<7.22	>7.59
<b>pH, Capillary</b>	M/F	All Ages	7.35-7.45	<b>Low</b> <7.22	<b>High</b> >7.59
		All Ages	7.35-7.45	<7.22	>7.59
<b>pH, Venous Blood</b>	M/F	All Ages	7.33-7.43	<b>Low</b> <7.22	<b>High</b> >7.59
		All Ages	7.33-7.43	<7.22	>7.59
<b>pH, Scalp</b>	M/F		7.25-7.50	<b>Low</b> <7.21	<b>High</b> >7.59



**LEGACY  
LABORATORY  
SERVICES**

TEST	SEX	AGE	REFERENCE RANGE	CRITICAL VALUE	
pCO <sub>2</sub> , Arterial Blood	M/F	All Ages	34-46 mmHg	<b>Low</b> <21 mmHg	<b>High</b> >69 mmHg
pCO <sub>2</sub> , Capillary	M/F	All Ages	34-46 mmHg	<b>Low</b> <21 mmHg	<b>High</b> >75 mmHg
pCO <sub>2</sub> , Venous Blood	M/F	All Ages	39-54 mmHg	<b>Low</b> <11 mmHg	<b>High</b> >69 mmHg
pO <sub>2</sub> , Arterial Blood	M/F	0 - 1 month ≥1 month	80-100 mmHg 80-100 mmHg	<b>Low</b> <41 mmHg <51 mmHg	<b>High</b> None defined
pO <sub>2</sub> , Capillary	M/F	All Ages	80-100 mmHg	<b>Low</b> <25 mmHg	<b>High</b> None defined
pO <sub>2</sub> , Venous Blood	M/F	All Ages	25-43 mmHg	None defined	
Potassium	M/F	0 - 1 year >1 year	3.7-5.9 mmol/L 3.6-5.0 mmol/L	<b>Low</b> <2.9 mmol/L <2.9 mmol/L	<b>High</b> >7.4 mmol/L >6.1 mmol/L
Sodium	M/F	0 - 1 year 1 - 12 years >12 years	133-146 mmol/L 138-145 mmol/L 136-145 mmol/L	<b>Low</b> <126 mmol/L <121 mmol/L <121 mmol/L	<b>High</b> >149 mmol/L >159 mmol/L >159 mmol/L