

Blood Gas Reference Ranges

Arterial Blood Gas Reference Range	
Components	Reference Range
pH	0-4 days: 7.27-7.47 5 days-adult: 7.35-7.45
pCO₂	0-5 days: 27-40 mmHg 6 days-23 months: 27-41 mmHg 24 months-adult: 35-45 mmHg
pO₂	0-1 days: 54-95 mmHg 2 days-Adult: 80-100 mmHg
HCO₃	0-4 days: 16-23 mmol/L 5 days-12 years: 19-27 mmol/L 13 years-Adult: 23-29 mmol/L
TCO₂	0-11 mos: 17-27 mmol/L 1-12 years: 20-29 mmol/L 13 years-Adult: 22-32 mmol/L
Base Excess	0-Adult: -2 - +2 mmol/L
O₂Hb	0-Adult: 95-98%
CO Hb	Non Smoker: Less than 1.5% Heavy Smoker: Less than 9% Toxic: Greater than 20%
Met Hb	0-Adult: 0-2%
Hb	Female: 12.1-15.0 gm/dL Male: 13.5-17.0 gm/dL Pediatric Normal Values: 0-1 day: 14.6-22.7 gm/dL 2-14 days: 13.2-21.3 gm/dL 15 days-3 mos: 9.8-12.9 gm/dL 4-6 mos: 10.4-14.7 gm/dL 7-12 mos: 10.2-14.7 gm/dL 13-24 mos: 11.1-13.7 gm/dL 25 mos-5 years: 11.1-14.1 gm/dL 6-9 years: 11.4-14.7 gm/dL 10-12 years: 11.0-15.1 gm/dL 13-17 years: 11.7-15.6 gm/dL
O₂ Con	0-Adult: 18-21 Vol%

Blood Gas Reference Ranges

Venous Blood Gas Reference Range	
Components	Reference Range
pH	0-Adult: 7.32-7.42
pCO ₂	0-Adult: 41-51 mmHg
HCO ₃	0-Adult: 24-28 mmol/L
TCO ₂	0-11 mos: 17-27 mmol/L 1-12 years: 20-29 mmol/L 13 years-Adult: 22-32 mmol/L
Base Excess	0-Adult: -5 - +5 mmol/L
O ₂ HB	None
CO Hb	Non Smoker: Less than 1.5% Heavy Smoker: Less than 9% Toxic: Greater than 20%
Met Hb	0-Adult: 0-2%
Hb	Female: 12.1-15.0 gm/dL Male: 13.5-17.0 gm/dL Pediatric Normal Values: 0-1 day: 14.6-22.7 gm/dL 2-14 days: 13.2-21.3 gm/dL 15 days-3 mos: 9.8-12.9 gm/dL 4-6 mos: 10.4-14.7 gm/dL 7-12 mos: 10.2-14.7 gm/dL 13-24 mos: 11.1-13.7 gm/dL 25 mos-5 years: 11.1-14.1 gm/dL 6-9 years: 11.4-14.7 gm/dL 10-12 years: 11.0-15.1 gm/dL 13-17 years: 11.7-15.6 gm/dL

Capillary Blood Gas Reference Range	
Components	Reference Range
pH	0-4 days: 7.27-7.47 5 days-adult: 7.35-7.45
pCO ₂	0-5 days: 27-40 mmHg 6 days-23 months: 27-41 mmHg 24 months-Adult: 35-45 mmHg
pO ₂	0-1 day: 54-95 mmHg 2 days-Adult: 80-100 mmHg
HCO ₃	0-4 days: 16-23 mmol/L 5 days-12 years: 19-27 mmol/L 13 years-Adult: 23-29 mmol/L
TCO ₂	0-11 mos: 17-27 mmol/L 1-12 years: 20-29 mmol/L 13 years-Adult: 22-32 mmol/L
Base Excess	0-Adult: -2 - +2 mmol/L
O ₂ Hb	0-Adult: 95-98%
CO Hb	Non Smoker: Less than 1.5% Heavy Smoker: Less than 9% Toxic: Greater than 20%
Hb	Female: 12.1-15.0 gm/dL Male: 13.5-17.0 gm/dL Pediatric Normal Values: 0-1 day: 14.6-22.7 gm/dL 2-14 days: 13.2-21.3 gm/dL 15 days-3 mos: 9.8-12.9 gm/dL 4-6 mos: 10.4-14.7 gm/dL 7-12 mos: 10.2-14.7 gm/dL 13-24 mos: 11.1-13.7 gm/dL 25 mos-5 years: 11.1-14.1 gm/dL 6-9 years: 11.4-14.7 gm/dL 10-12 years: 11.0-15.1 gm/dL 13-17 years: 11.7-15.6 gm/dL
O ₂ Con	0-Adult: 18-21 Vol%

Blood Gas Reference Ranges

Arterial Cord Blood Gas Reference Range	
Components	Reference Range
pH	7.18-7.38
pCO ₂	32-66 mmHg
pO ₂	6-30 mmHg
HCO ₃	17-27 mmol/L
Base Excess	-10-(-2) mmol/L
O ₂ Hb	None
CO Hb	None
Met Hb	None
Hb	Pediatric Normal Values: 0-1 day: 14.6-22.7 gm/dL 2-14 days: 13.2-21.3 gm/dL 15 days-3 mos: 9.8-12.9 gm/dL 4-6 mos: 10.4-14.7 gm/dL 7-12 mos: 10.2-14.7 gm/dL 13-24 mos: 11.1-13.7 gm/dL 25 mos-5 years: 11.1-14.1 gm/dL 6-9 years: 11.4-14.7 gm/dL 10-12 years: 11.0-15.1 gm/dL 13-17 years: 11.7-15.6 gm/dL

Venous Cord Blood Gas Reference Range	
Components	Reference Range
pH	7.25-7.45
pCO ₂	27-49 mmHg
pO ₂	17-41 mmHg
HCO ₃	12-28 mmol/L
TCO ₂	None
Base Excess	-10-(-2) mmol/L
O ₂ Hb	None
CO Hb	None
Met Hb	0-2%
Hb	Pediatric Normal Values: 0-1 day: 14.6-22.7 gm/dL 2-14 days: 13.2-21.3 gm/dL 15 days-3 mos: 9.8-12.9 gm/dL 4-6 mos: 10.4-14.7 gm/dL 7-12 mos: 10.2-14.7 gm/dL 13-24 mos: 11.1-13.7 gm/dL 25 mos-5 years: 11.1-14.1 gm/dL 6-9 years: 11.4-14.7 gm/dL 10-12 years: 11.0-15.1 gm/dL 13-17 years: 11.7-15.6 gm/dL