

BLOOD GASES PLUS

Orderable - BGP

Turnaround Time: 30 minutes (Cord gases: 1 hour)

STAT: 15 minutes

Specimen:

See Note in Interpretive Comments.

Collection Information:

Samples that are clotted, have an insufficient amount, contain bubbles, are not received within 60 minutes of collection time, or are leaking will be canceled.

Syringes, minimum volume

Electrolyte-balanced heparin in blood gas syringes

- Arterial, 3 mL
- Venous, 3 mL
- Capillary, completely filled 170 µL
 - o Mixing wire (flea), caps, plastic capillary (lithium heparin, balanced)
 - o Free-flowing sample, completely filled, air free, with sealed ends (caps tight)

Labeling:

Put small Cerner label on syringe and place in biohazard bag with large Cerner label in the outside pocket of the biohazard bag.

Transport for blood gas specimens:

Send specimens to the laboratory immediately at room temperature. Suggested transport time is 15 min. Do NOT freeze.

If specimens will not be received in lab within 30 minutes, transport on ice slurry.

Special Processing:

- Avoid air bubbles when collecting specimen. Air bubbles will falsely increase pO₂ result.
- Mix capillary blood with metal flea by running magnet up and down full length of the tube multiple times, to prevent clotting. Not mixing immediately will result in microclots formation that can affect results.



Laboratory:
Core Lab



Requisition:
GENERAL LABORATORY
REQUISITION



Method of Analysis:
GEM Premier 5000 Blood
Gas Analyzer

- Amperometric: pO₂,
Glucose, Lactate
- Potentiometric: pH,
pCO₂, Na⁺, K⁺, Ca⁺⁺, Cl⁻
- Calculated parameters:
O₂ Saturation, Total CO₂
(Bicarbonate)

Please note that the measured %saturation (sO₂) overestimates oxygenation status in the presence of dyshemoglobins (carboxyHb & metHb) and may result greater than 100%

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Reference Ranges:

Analyte	Age Range	Arterial/ Capillary	Venous	Units
pH	birth-1 day	7.29 - 7.45	7.32 - 7.42	
	2 days- adult	7.35 - 7.45	7.32 - 7.42	
pCO2	birth - 2 days	27 - 40	38 - 50	mmHg
	2 days - adult	35 - 45	38 - 50	mmHg
pO2	birth - 2 days	54 - 95	30 - 50	mmHg
	2 days - adult	83 - 108	30 - 50	mmHg
Base Excess (BE)	(all)	(-2) - 3	(-2) - 3	mmol/L
O2 saturation, calculated	(all)	N/A	N/A	%
Sodium, Na	(all)	135-145	135-145	mmol/L
Potassium, K	(all)	3.5-5	3.5-5	mmol/L
Chloride, Cl	(all)	98-107	98-107	mmol/L
Total CO2 (Bicarbonate)	(all)	22-28	25-29	mmol/L
Ionized Calcium	0-<7 days	1.02 - 1.45	1.02 - 1.45	mmol/L
	7 days-<6 months	1.21 - 1.44	1.21 - 1.44	mmol/L
	6 months-< 2 years	1.14 - 1.37	1.14 - 1.37	mmol/L
	2-18 years	1.10 - 1.33	1.10 - 1.33	mmol/L
	≥19 years	1.09 - 1.30	1.09 - 1.30	mmol/L
Glucose	(all)	3.4-11.0	3.4-11.0	mmol/L
Lactate	(all)	0.9-2.4	0.9-2.4	mmol/L



Test Schedule:
As required

Interpretive Comments:

Venous pCO2 >45 is suggestive of arterial pCO2 >40 mmHg, which may be clinically important.

Comments:

	Critical Low	Critical High
pH	7.20	7.60

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pCO ₂	20	60
pO ₂ (arterial only)	40	
Na	120	160
K	3.0	6.0
Glucose	2.8	30.0
Lactate (ED only)		4.0

Storage and Shipment:

- Send all blood gas specimens to core laboratory at room temperature within 30 minutes
- Store on ice slurry if delay in analysis or delivery longer than 30 minutes
- Do not freeze

Please note that if the blood specimen was not received within the specified 30 min; some of the results may have been affected.