



OBTAINING UMBILICAL CORD GASES

The SOGC Policy Statement, No. 41, October 1995, recommended that hospitals providing obstetrical care have facilities available to measure cord blood gases and pH levels at birth. At the time of birth, a segment of cord is clamped and set aside to allow for umbilical artery and umbilical vein blood gas analysis. Such information provides a measure of the fetal-placental response to labour in terms of respiratory and metabolic function. Rural hospitals will have to evaluate the feasibility of this recommendation.

PROCEDURE

(SOME HOSPITALS USE PREPACKAGED KITS)

1. Assemble equipment

- 2-3cc syringes, with 21-gauge needles
- 2 leuc locks
- ice
- disposable gloves
- Hepalean 1,000 USP units per ml.
- protective eye wear

2. Prepare equipment

- i. draw 0.5 ml Hepalean into syringe
- ii. moisten inside of syringe thoroughly with Hepalean
- iii. expel Hepalean

Repeat steps i-iii with 2nd syringe

3. Don gloves and protective eye wear prior to obtaining sample.
4. Place cord on ice if unable to sample immediately.
5. Visualize – two arteries and one vein in cord sample.
6. Insert needle of heparinized syringe into artery of umbilical cord sample, ensuring that the needle is completely inserted.
7. Withdraw a minimum of 1.0 ml of blood. Leave needle in place.
8. Repeat steps 6-7 obtaining sample from vein. When withdrawing venous sample, it is preferable to withdraw 2.0 ml of blood. This will assist with distinguishing the samples.

9. To decrease the incidence of accidental blood splash, remove the clamps at either end of the cord sample.
10. Withdraw needle from arterial sample.
11. Remove any air that may be in sample.
12. Cap syringe with leur lock immediately.
13. Repeat steps 10-12 for venous sample.
14. Label sample and place on ice.
15. Transport to lab **STAT** (to be analyzed within 60 minutes).

NORMAL GASES

	ARTERIAL CORD (Fetal status)	VENOUS CORD (Placental status)
pH	7.27 (\pm 0.069)	7.34 (\pm 0.063)
PCO ₂	50.3 (\pm 11.1)	40.7 (\pm 7.9)
HCO ₃	22.0 (\pm 3.6)	21.4 (\pm 2.5)
Base excess	-2.7 (\pm 2.8)	-2.4 (\pm 2)