
Cord Blood Sampling

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Cord Blood Sampling

Aim of policy and introduction

This document intends to guide clinicians to safely obtain cord blood samples and to aid decisions regarding ongoing management of care.

Paired cord gas sampling (venous and arterial), provides a practical objective measurement of the neonate's condition at birth. Arterial cord blood provides information on the acid-base of the neonate. Venous cord blood reflects both maternal acid-base status and placental function. Together, results provide information on possible oxygen deficiency of the neonate.

It is important to note that NICE (2022) do not routinely advise obtaining cord gases on all babies, however it is recognised that selective, rather than routine cord blood gas analysis can miss collection of samples from some high-risk deliveries and subsequently newborn babies with birth asphyxia. An emerging theme through DATIX and ATAIN has been the absence of paired cord gases. Therefore, the requirement is for all babies who are monitored with a CTG in labour, to have cord gases undertaken.

Criteria for cord gases but not limited to:

- Any baby that has had CTG monitoring in labour
- Emergency LSCS births (to include semi-elective)
- Instrumental births
- Any preterm birth <37/40
- Meconium stained liquor
- Shoulder dystocia
- Ante/intrapartum haemorrhage
- Apgar <5 at 5 minutes
- Any baby born in poor condition (including MLU)
- Maternal temperature of $\geq 38^{\circ}$
- Suspicious or Pathological CTG

PLEASE DOUBLE CLAMP ALL CORDS, IRRESPECTIVE OF PLACE OF BIRTH, TYPE OF BIRTH, OR OUTCOME

You will need...

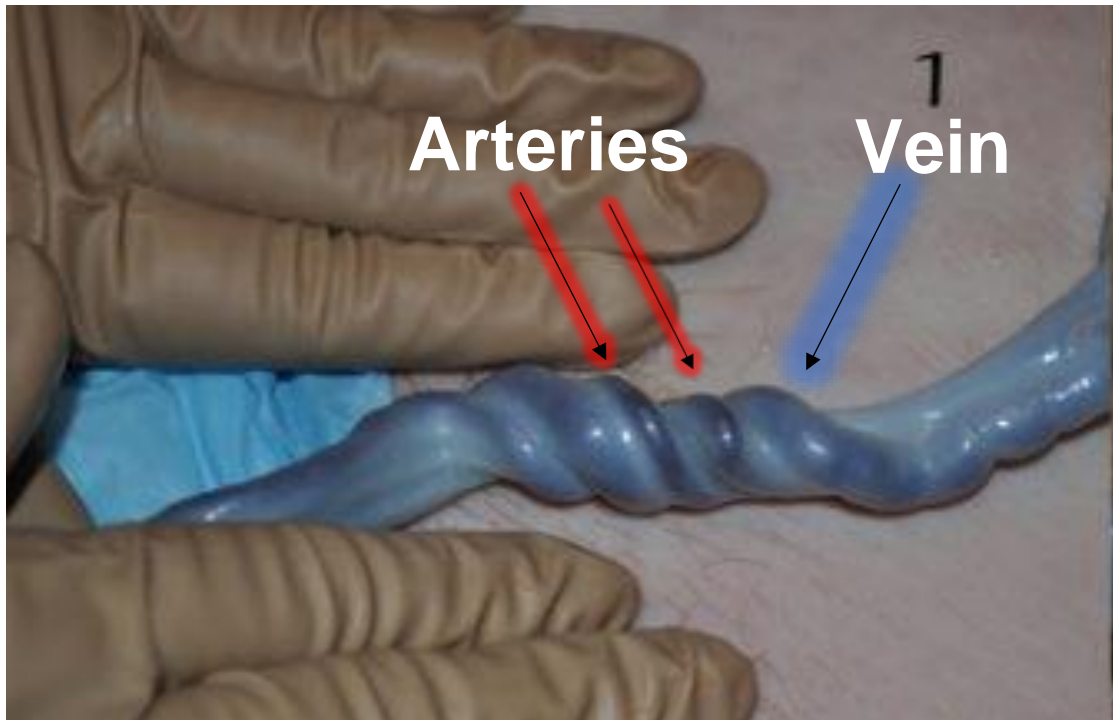
- 3 clamps (one for baby and two for the cord, as pictured)
- 2x pre-heparinised syringes and needle (take pic)
- Gloves
- ID labels to identify samples

Obtaining the sample...

Prioritise obtaining an arterial sample as this is most representative of the acid base status of the fetus

- Identify the segment of umbilical cord between the two clamps (can be saved for up to one hour with two clamps)
- Insert needle and withdraw 1-2ml of blood from the artery. (The vein should help to support the smaller arteries, aiding collection)
- Remove the needle and safely discard in sharps box
- Place cap with stopper and expel the air from the syringe
- Repeat for the venous sample
- Label and identify samples





Delayed cord clamping

Umbilical cord blood samples can still be obtained from the unclamped cord, providing it is done immediately after birth. Evidence suggests the procedure is safe and has no effect on the volume of blood received by the baby, or the results themselves.

The cord can be left at room temperature for up to 60 minutes. This is particularly important for cases when a baby is born in good condition but deteriorates after birth.

Storage and processing

It is best practice is to process samples immediately after birth however, in cases where cord gases have not been taken at birth, the cord should be double clamped. It can be left at room temperature for upto 60 minutes. This is particularly important for cases when a baby is born in good condition but deteriorates after birth. This should occur in ALL births

Ranges

VENOUS OR ARTERIAL pH <7.1 AND BASE DEFICIT OF > -12mmol/L

- Inform neonatal team
- Commence hypoglycaemic pathway
- Complete datix

Documentation

All staff should document results in both maternal AND neonatal notes, either by printing results or handwriting them. If a sample is unable to be obtained or there is suspected duplicate samples, then this should be acknowledged, and the reason why clearly documented.

Please complete a DATIX when cord blood results fall outside of the normal ranges or if there are any equipment issues, and record the DATIX number in the notes.

References

[Umbilical cord blood acid-base analysis at delivery - UpToDate](#)

[Cord Blood Analysis Guideline \(mkuh.nhs.uk\)](#)

[Intrapartum care for healthy women and babies \(nice.org.uk\)](#)

[Fetal-and-Cord-Blood-Sampling-Guideline-PDF-V4.2-01AUG15.pdf
\(northdevonhealth.nhs.uk\)](#)

[Umbilical cord blood gas sampling \(nsw.gov.au\)](#)

[Umbilical cord blood acid-base analysis at delivery - UpToDate](#)

WISDOM

Authorisation form for publication of a guideline on WISDOM

Please answer all questions – if not applicable answer N/A

Health Board / Trust	Swansea Bay UHB
Hospital site	Singleton Hospital
Title of guideline (this should be the title that you wish the guideline to be listed as)	Cord Blood Sampling
Name(s) of Authors	Emily Perkins
Group or Committee ratifying guideline	Labour Ward Forum
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