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Indications for obtaining paired Cord blood samples following birth

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| 1 | June 2024 | Dawn Apsee | New CTM guidance |

AUTHORSHIP, RESPONSIBILITY AND REVIEW

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|-----------|--------------------------|-------------------|-------------|
| Author | Dawn Apsee | Ratification Date | August 2024 |
| Job Title | Intrapartum Lead midwife | Review Date | August 2027 |

Disclaimer

**When using this document please ensure that the version is the most up to date by checking the Obstetrics & Gynaecology Guidelines on WISDOM
PRINTED DOCUMENTS MUST NOT BE RELIED ON**

Cord Blood Sampling

Aim of policy and introduction

This guidance is for clinicians to safely obtain cord blood samples to support decision making around 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 new-born babies with birth asphyxia. An emerging theme through DATIX and ATAIN has been the absence of paired cord gases. Please note criteria for taking paired cord blood samples below:-

Indications for obtaining cord blood samples but not limited to:

- Any birth where baby has shown evidence of fetal hypoxia
- All emergency, urgent and scheduled Caesarean births
- Multiple births
- Assisted births
- Any preterm birth <37/40
- Significant Meconium or Meconium stained liquor with additional risk factors
- Shoulder dystocia
- Ante/intrapartum haemorrhage
- Apgar <7 at 5 minutes
- Any baby born in poor condition (including MLU)
- Maternal temperature of $\geq 38^{\circ}$

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 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 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.

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.

The sample 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 following birth. This should occur in ALL births

Ranges

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

- Inform neonatal team
- Commence hypoglycaemic pathway
- Complete a 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

[Intrapartum care for healthy women and babies \(NICE 2023\)](#)

[Cord Blood Analysis Guideline \(mkuh.nhs.uk 2021\)](#)