

5 INTRAPARTUM CARE

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5.6 Intrapartum Fetal Heart Rate Monitoring
Section B
Clinical Guidelines
King Edward Memorial Hospital
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5.6 INTRAPARTUM FETAL HEART RATE MONITORING

AIM

To provide guidelines for intrapartum caregivers that will lead to the best possible fetal outcomes while maintaining the lowest possible rates of intervention.

KEY POINTS¹

1. Fetal surveillance in labour, whether by intermittent auscultation or by electronic fetal monitoring is mandatory.
2. There is no strong evidence that admission CTG in low risk pregnancies confers significant benefit, in terms of reducing adverse perinatal outcomes, nor does it appear to be associated with an increase in major interventions providing it is removed once a reassuring trace is evident.
3. Intermittent auscultation may used for women who, at the onset of labour, are identified as having a low risk of developing fetal compromise.
4. Intermittent auscultation shall be performed using a Doppler monitor. It is recommended that the Doppler monitor be on speaker mode.
5. Each auscultation episode should commence toward the end of a contraction and continue for at least 30 seconds after the contraction has finished.
6. Auscultation shall be undertaken
 - At least every 15-30 minutes in the active phase of the first stage of labour.
 - At least every 5 minutes in the second stage of labour.
 - Toward the end and for at least 30 seconds after each contraction during active pushing in the second stage of labour.
7. When reviewing the fetal heart rate traces, the midwife shall record the assessment in the woman medical records with comments on
 - Baseline heart rate.
 - Variability, accelerations and decelerations.
 - An assessment of the trace as normal, non reassuring or pathological.
8. All CTG abnormalities shall be reported to the Labour and Birth Suite Coordinator and the Registrar / Senior Registrar.
9. In the presence of CGT abnormalities, the midwife shall initiate measures, where appropriate, to improve the fetal status e.g. change of maternal position, the administration of intravenous fluids or reducing / suspending an oxytocin infusion. See clinical guidelines [B 5.7 Acute Fetal Compromise](#)
10. The midwife / Resident Medical Officer shall
 - Explain the procedure of fetal monitoring to the woman including upper and lower limits of a normal baseline.

- Review the fetal heart rate trace on a regular basis (as determined by maternal and fetal condition). This assessment shall be recorded in the woman's medical records with comments on
 - Baseline heart rate
 - Variability and accelerations
 - FHR decelerations
 - An assessment of the trace as normal, non reassuring or pathological.
- Notify the Labour and Birth Suite shift co-ordinator and registrar / Senior Registrar of any FHR abnormalities.

11. The Registrar **must**

- Be aware of all women within the Labour and Birth Suite requiring continuous fetal heart rate monitoring.
- Be notified immediately of all abnormal fetal heart rate traces.
- Immediately assess any reported abnormal fetal heart rate trace (or contact a Senior Registrar if he / she is unable to do this). This assessment shall be recorded in the woman's medical records with comments on
 - Baseline heart rate.
 - Variability and accelerations.
 - FHR decelerations.
 - An assessment of the trace as normal, non reassuring or pathological.
 - A plan for subsequent management.
- Institute appropriate measures to assess fetal status which may include:
 - Conservative measures such as change of maternal position, giving intravenous fluids or reducing / suspending an oxytocin infusion.
 - An assessment of progress.
 - Fetal scalp stimulation.
 - Fetal scalp sampling.
 - Amnioinfusion.
 - Birth of the baby.
 - See clinical guideline [B 5.7 Acute Fetal Compromise](#).
- Notify the Senior Registrar / Consultant on call of abnormal patterns if they persist.

12. The Consultant shall review the trace and woman where there is uncertainty about the CTG as soon as possible and document a management plan in the woman's medical records.

13. If the CTG is considered normal, monitoring may be interrupted for short periods for patient comfort or personal care e.g. toilet and shower. Such interruptions should not be frequent or at times when the fetus may be at increased risk of compromise, e.g. shortly after an epidural top up, or artificial rupture of membranes.¹

INDICATIONS FOR CONTINUOUS FETAL MONITORING¹

Antenatal Risk Factors

- Suspected or confirmed intrauterine growth restriction.
- Previous antepartum monitoring suggesting at 'at risk' fetus, such as abnormal antenatal CTG, abnormal Doppler ultrasound, oligohydramnios.
- Pre eclampsia.
- Antepartum or intrapartum haemorrhage.
- Prolonged rupture of membranes
- Chorioamnionitis.
- Prolonged pregnancy > 42 weeks.

- Multiple pregnancy.
- Breech presentation.
- Diabetes – women on insulin, suspected or confirmed macrosomia, diabetes poorly controlled.
- Prior uterine scar or previous Caesarean birth.
- Current or previous obstetric or medical condition which may pose a significant risk of fetal compromise.

Intrapartum Risk factors.

- Induction of labour with prostaglandins / oxytocin.
- Abnormal fetal heart rate on auscultation.
- Oxytocin augmentation.
- Epidural analgesia.
- Abnormal bleeding in labour.
- Maternal pyrexia $\geq 38^{\circ}\text{C}$.
- Meconium or blood stained liquor.
- Absent liquor following amniotomy.
- Active first stage of labour > 12 hours (i.e. regular uterine activity, cervix 4cm or more dilated).
- Active second stage (i.e. pushing) of greater than 1 hour when delivery is not imminent.
- Pre term labour less than 37 completed weeks.

RISK OF FETAL COMPROMISE ¹

It is recognised that CTGs have high sensitivity in detecting the potentially compromised fetus but low specificity. Fetuses go through sleep / wake cycles or may be affected by maternal drugs and thus CTGs may alternate between appearing normal and non reassuring (decreased baseline variability and no accelerations) due to a sleeping fetus or a sedated fetus. This normal physiological response must be distinguished from the hypoxic fetus.

The **normal CTG** is associated with a low probability of fetal compromise:

- Fetal heart baseline rate of 110 to 160 beats per minute (bpm)
- Fetal heart baseline variability of 5 to 25 bpm
- If over 30 weeks gestation fetal heart accelerations greater than 15 bpm – occurring spontaneously or elicited by a vaginal examination.
- If 23 to 30 weeks gestation fetal heart accelerations greater than 10 bpm - occurring spontaneously or elicited by a vaginal examination.
- No decelerations

Other CTG patterns are by definition, abnormal and require careful evaluation taking into account the duration of the abnormal pattern and other clinical features.

The following CTG features, occurring in isolation, are unlikely to be associated with significant fetal compromise:

- Fetal heart baseline rate of 100 to 109 bpm.
- Absence of accelerations
- Early decelerations
- Variable decelerations with no complicating features (previously mild decelerations)

The following features may be associated with fetal compromise:

- Fetal tachycardia
- Reduced baseline variability
- Complicated variable decelerations
- Late decelerations
- Prolonged decelerations

The following features are very likely to be **associated with significant fetal compromise** and require immediate management, which may include urgent birth:

- Prolonged bradycardia
- Absent baseline variability
- Sinusoidal pattern
- Complicated variable decelerations with reduced baseline variability
- Late decelerations with reduced variability

Birth should be undertaken when there is:

- Significant fetal acidosis suspected and it cannot reasonably be excluded
- Clear evidence of serious fetal compromise (fetal blood sampling)
- Persistent CTG abnormalities that require further assessment but fetal blood sampling is unavailable, contraindicated, clinically inappropriate or not feasible.

COMPETENCY

Refer to Clinical Guideline [B, 1.7.2 Antenatal fetal heart rate monitoring](#) for competency requirements.

PROCEDURE

Refer to Clinical Guideline [B, 1.7.2 Antenatal fetal heart rate monitoring](#) for procedure.

Note: Adjust the speed of CTG tracing as indicated – usually 1cm per minute for a labouring woman.

REFERENCE

1. RANZCOG. [Intrapartum Fetal Surveillance. Clinical Guidelines](#) 2006; Second edition.