



Intrapartum Fetal Surveillance

Clinical Guidelines – Summary of Guidelines and Good Practice Notes

Communication and information

Guideline 1

During their pregnancy, women should be offered information on intrapartum fetal surveillance.

Grading of recommendation: C

Guideline 2

Institutions undertaking intrapartum care have a responsibility to ensure that health professionals have an understanding of the relevant maternal and fetal pathophysiology and are able to demonstrate competence in the interpretation of fetal surveillance options.

Grading of recommendation: C

Good Practice Note

The Guideline Review Group has assessed grading and classification systems for FHR interpretation. Without an adequate appreciation of the underlying pathophysiology such systems may mislead the user. The Guideline Review Group recommends that all health professionals should participate in an ongoing education program in fetal surveillance and that if used, the inclusion of grading/classification systems in such programs should be in addition to, rather than instead of, an understanding of fundamental physiology.

Hospitals and health services should ensure that the health professionals providing intrapartum care have access to regular training in intrapartum fetal surveillance. The Guideline Review Group recommends that training should occur in a multidisciplinary forum to optimise communication between professional groups.

Standardisation

Guideline 3

Settings on CTG machines should be standardised to enable a consistent approach to teaching and interpretation of EFM traces, particularly as many health professionals move between different institutions in Australia and New Zealand.

Until there is clear evidence that interpretation based on one paper speed is superior to the others, it is recommended that the paper speed of 1cm per minute be adopted universally.

Grading of recommendation: C

Good Practice Note

Date and time settings on CTG machines should be validated whenever used. CTGs should be labelled with the mother's name, hospital number, date and time of commencement.

Any intrapartum events that may affect the FHR (e.g. vaginal examination, obtaining a fetal blood sample (FBS), insertion/siting of an epidural) should be noted contemporaneously both on the CTG and in the maternal notes, including date, time and signature.

For women receiving continuous EFM, the CTG should be reviewed at least every 15-30 minutes. It should be regularly recorded, either by written or electronic entry, in the medical record that the CTG has been reviewed.

Health professionals should be aware that machines from different manufacturers use different vertical axis scales, and this can change the perception of fetal heart rate variability.

Which modality should be used

Guideline 4

Fetal surveillance in labour, whether by intermittent auscultation or by electronic fetal monitoring, should be recommended to all women, in accordance with these guidelines.

Grading of recommendation: C

Low risk women

Guideline 5

There is insufficient evidence to confidently guide routine practice regarding the use of admission CTG in low risk women. Individual hospitals and/or attending clinicians should decide whether or not to routinely use admission CTG, weighing the increase in minor intervention against a possible fetal benefit in a small number of labours.

Grading of recommendation: B

Good Practice Note

Admission CTG offers an approach that may identify the unrecognised "at risk" fetus and may be particularly beneficial in women in whom early amniotomy is not planned/desired and in women between 41⁰ and 41⁶ weeks gestation.

Low risk women (cont'd)

Guideline 6

Intermittent auscultation is recommended as a minimum for women who, at the onset of labour, are identified as having a low risk of developing fetal compromise.

Grading of recommendation: A

Guideline 7

Intermittent auscultation should be performed using Doppler ultrasound rather than a Pinard stethoscope.

Grading of recommendation: A

Guideline 8

When using intermittent auscultation it should be performed according to a standardised protocol:

- Auscultation should occur with Doppler signal on speaker mode.
- Each auscultation episode should commence toward the end of a contraction and continue for at least 30 seconds after the contraction has finished.

Auscultation should 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.

Grading of recommendation: C

Guideline 9

The use of EFM, whether continuous or intermittent, in women with low risk of fetal compromise should be individualised, weighing the probable increase in intervention rates against a possible fetal benefit in a small number of labours.

Grading of recommendation: B

Good Practice Note

When using intermittent EFM in the first stage of labour it should be performed according to a standardised protocol:

- EFM should be undertaken for a minimum of 15 minutes at least every 2 hours.
- The episode of EFM should only be discontinued if the CTG is normal.
- IA should be undertaken according to Guideline 8 between episodes of EFM.

Risk of fetal compromise

Guideline 10

Continuous EFM should be recommended when either risk factors for fetal compromise have been detected antenatally, are detected at the onset of labour or develop during labour. (see algorithm)

Grading of recommendation: B

Good Practice Note

Where continuous EFM is required for the substantial part of labour, and if the EFM to date is considered to be normal, monitoring may be interrupted for short periods of up to 15 minutes to allow personal care (e.g. shower, toilet). Such interruptions should be infrequent and not occur immediately after any intervention that might be expected to alter the FHR (e.g. amniotomy, epidural insertion or top-up etc).

Guideline 11

In clinical situations where the FHR pattern is considered abnormal, immediate management includes:

- Identification of any reversible cause of the abnormality and initiation of appropriate action (e.g. correction of maternal hypotension, cessation of oxytocin and/or tocolysis for excessive uterine activity) and
- Initiation or maintenance of continuous EFM.
- Consideration of further fetal evaluation or delivery if a significant abnormality persists.

Grading of recommendation: A

Good Practice Note

Maternal repositioning may alleviate maternal hypotension or cord compression and improve fetal condition.

Cessation of an oxytocin infusion, if running, may alleviate contraction related fetal compromise.

All institutions should be familiar with and have a protocol for acute tocolysis. Regimens currently available include:

- Intravenous or subcutaneous terbutaline 250 micrograms.
- Sublingual GTN spray, 400 micrograms.
- Intravenous salbutamol 100 micrograms.

Risk of fetal compromise (cont'd)

Good Practice Note

The normal CTG is associated with a low probability of fetal compromise and has the following features:

- Baseline rate 110-160.
- Baseline variability of 5-25 bpm.
- Accelerations 15bpm for 15 seconds.
- No decelerations.

All other CTGs are by this definition abnormal and require further evaluation taking into account the full clinical picture.

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

- Baseline rate 100-109.
- Absence of accelerations.
- Early decelerations.
- Variable decelerations without complicating features.

The following features may be associated with significant fetal compromise and require further action, such as described in Guideline 10:

- 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 delivery:

- Prolonged bradycardia (<100 bpm for >5 minutes).
- Absent baseline variability.
- Sinusoidal pattern.
- Complicated variable decelerations with reduced baseline variability.
- Late decelerations with reduced variability.

See Appendix E for definitions

Good Practice Note

Units employing EFM are strongly encouraged to have access to fetal blood sampling facilities.

The use of scalp lactate rather than pH measurement will provide an easier and more affordable adjunct to EFM for most units.

Guideline 12

Delivery should be expedited where:

- Significant fetal acidosis is suspected.
- There is clear evidence of serious fetal compromise (FBS should not be undertaken).
- CTG abnormalities are of a degree requiring further assessment, but FBS is contraindicated, clinically inappropriate or not feasible.

Grading of recommendation: B

Good Practice Note

If FBS is undertaken it is recommended that the woman be in the left-lateral position or lithotomy with a wedge in place. Contraindications to FBS include:

- Clear evidence on continuous EFM of serious, sustained fetal compromise.
- Fetal bleeding disorders (e.g. suspected fetal thrombocytopenia).
- Face presentation.
- Maternal infection* (e.g. HIV, hepatitis viruses, herpes simplex virus and suspected intrauterine sepsis).

FBS is not generally recommended in pregnancies at less than 34 weeks of gestation because delivery may be inappropriately delayed in a small "at risk" fetus that may sustain damage earlier than would be expected in a term fetus.

It is recommended that umbilical cord arterial and venous blood should be collected at the time of delivery to confirm acid-base status when a FBS has been performed intrapartum.

*Group B Streptococcus carrier status does not preclude FBS

Maintaining standards and practice review

Guideline 13

All health professionals should participate in regular multidisciplinary clinical audits focussing on maternal and perinatal outcomes in relation to intrapartum fetal surveillance.

Grading of recommendation: C

Good Practice Note

The Guideline Review Group recommends the following practices to assist with clinical audit and education:

- Regular CTG review meetings.
- Paired (arterial and venous) umbilical cord blood analysis following abnormal FHR pattern, operative deliveries, low apgars <7 at 5 minutes.
- Review of the use of FBS where available.