

GUIDELINE FOR FETAL HEALTH SURVEILLANCE IN LABOUR

Preamble

Intermittent auscultation (IA) of the fetal heart is the preferred method of fetal surveillance in low-risk pregnancies provided there is an appropriately trained professional in attendance. This approach has been confirmed by the Society of Obstetricians and Gynecologists of Canada (SOGC) in their guideline issued in 2007, by Perinatal Services BC in their 2008 guideline, *Care in Normal Birth* by the World Health Organization (WHO 1999), and in *Pregnancy and Childbirth* (WHO 2007).

This guideline for midwives draws on all of these documents and the references contained within them. It reflects the expectation that the midwife will use best clinical judgment in assessing and responding to each labour and incorporate appropriate monitoring within the plan of care. It should be used in combination with the College's *Indications for Discussion, Consultation and Transfer of Care* and *Indications for Planned Place of Birth*, as well as other College guidelines and the midwife's own practice protocols for the provision of care in labour.

It is critical to remember that Fetal Health Surveillance is only one aspect of the clinical picture. Decisions about management should always be made in view of the total clinical picture, with the midwife providing information to the client in order to enable participation in the decision-making process.

Recommendations for Intermittent Auscultation

1. Basic Requirements

- The client is assessed to be low-risk at the onset of labour
- The midwife is skilled in the procedure
- The midwife uses this guideline or an equivalent evidence-based practice protocol addressing technique, frequency of auscultation, documentation standards and clinical management when abnormal findings are present

2. Frequency of Intermittent Auscultation

Fetal heart auscultation should be performed:

- First stage
 - Latent phase¹ at time of initial assessment
 - Active Phase², every 15 to 30 minutes immediately following a contraction

¹ First stage latent phase is defined by regular mild to moderate contractions causing discomfort to the client and resulting in a progressive change in the effacement and/or dilation of the cervix prior to 4 cm dilation. Ongoing monitoring is not necessary until labour becomes active.

² First stage active phase is defined by regular, painful (moderate to strong) contractions with progressive cervical effacement and progressive dilation of 4 cm or more.

- Second Stage
 - Latent Phase³ every 15 minutes
 - Active Phase⁴ immediately following every contraction or every 5 minutes

3. Intermittent Auscultation is also required:

- Before:
 - An intervention such as amniotomy (AROM)
 - Administration of medications
 - Leaving the client after an assessment in the latent phase of labour
 - Transfer of the client to another care provider
- After:
 - Arrival at the client's home or on admission to hospital
 - Spontaneous rupture of membranes (SROM) or AROM
 - Cervical exam
 - Identifying an abnormal event during labour while arranging for electronic fetal monitoring (EFM)

4. Technique

- Perform Leopold's Maneuvers prior to first auscultation (after initial palpation, extensive palpation is not necessary prior to each auscultation when monitoring at 15 minute or more frequent intervals, unless there are indications of a change in fetal positioning)
- Place doppler probe or fetoscope over fetal back or thorax
- Palpate client's pulse to differentiate from fetal heart rate auscultations when the fetal heart rate (FHR) is in the range of the client's heart rate
- Palpate uterine contraction
 - During the initial assessment, the FHR should be assessed for 60 seconds to establish a baseline
 - Subsequently the FHR should be assessed for 30 to 60 seconds⁵ immediately following a contraction

Normal Findings

- Baseline FHR 110-160 beats per minute (bpm)⁶
- Presence of accelerations⁷
- Regular rhythm

³ Second stage latent phase is defined as the period of time after full dilation when contractions are usually less strong and frequent than those of the active phase of first stage, and when there is no urge to push. Some clients do not have a latent phase in second stage, while others may experience this phase lasting up to one hour.

⁴ Second stage active phase is defined as the period after full dilation of the cervix and up to the birth of the baby where there are regular contractions with an expulsive urge.

⁵ The greatest accuracy results when the FHR is counted for 60 seconds. For regular assessments during labour, both 30- and 60-second sampling periods immediately following contractions were used in the randomized trials. In active labour, the 30-second sampling periods may be more feasible. However, a 60-second count will improve accuracy SOGC.

⁶ Normal fetal heart range for the term fetus (37-42 weeks gestation)

⁷ Increase of FHR above baseline, greater than 15 bpm, lasting greater than 15 seconds from onset to return. While the absence of accelerations does not constitute abnormal findings, the presence of accelerations are indicative of fetal well-being. It is important to consider the auscultation findings in light of the total clinical picture, including the general activity of the fetus, the stage of labor, and other risk factors. SOGC

Abnormal Findings

- Inability to clearly auscultate the FHR
- Baseline bradycardia (FHR <110 bpm) or tachycardia (FHR >160 bpm)
- Presence of decelerations
- Irregular FHR
- Changing baseline FHR

In the presence of an abnormal FHR detected by IA that is unresponsive to intrauterine resuscitative measures, increased surveillance by continuous electronic fetal monitoring (EFM) should be instituted. Where labour is being monitored in the home setting, this will necessitate transport to hospital.

5. Documentation and Communication

Midwives should ensure that the following information is recorded in the labour record:

- Baseline rate
- Accelerations
- Decelerations
- Change in baseline
- Rhythm (note as *regular* or *irregular*)
- Uterine activity and resting tone
- Specific actions taken when the FHR is abnormal
- Responses to interventions
- Subsequent return to normal findings
- Document classification of IA as: Normal or Abnormal

Please refer to the Intermittent Auscultation Classification chart below⁸

	NORMAL	ABNORMAL
Parameters	<ul style="list-style-type: none"> • FHR 110-160 bpm • Regular • Accelerations 	<ul style="list-style-type: none"> • FHR < 110 bpm • FHR > 160 bpm • Irregular • Changing baseline • Decelerations
ACTIONS:	<ul style="list-style-type: none"> • Continue IA • Promote maternal comfort and fetal oxygenation • Provide supportive care 	<ul style="list-style-type: none"> • Auscultate again following next few contractions to confirm characteristics • Assess potential causes and attempt to eliminate/reduce effects of problem • Intervene to improve blood flow and oxygenation • Review overall clinical situation • Initiate EFM to obtain tracing of FHR characteristics • Notify physician • Consider fetal scalp sampling • Consider delivery

⁸ SOGC 2007

Recommendations for Electronic Fetal Monitoring (EFM)

Indications for EFM

- Inaudible or abnormal findings on IA or as indicated by risk factors⁹

1. Internal Monitoring¹⁰

Indications

- Abnormal finding on IA and EFM that is inadequate for accurate interpretation in a labouring client with ruptured membranes.

Potential Contraindications

Contraindications to the use of internal fetal monitoring include but are not limited to the following:

- Placenta previa
- Face presentation
- Unknown presentation
- HIV or Hepatitis B or C seropositive
- Active genital herpes or any other active infection where the fetus may be affected

Relative Contraindications¹¹

- Extreme fetal prematurity
- GBS, syphilis or gonorrhoea
- Genital tract infection

2. Responsibilities Associated with Electronic Fetal Monitoring

- The attending midwife should understand the benefits and limitations of EFM and be qualified and able to assess the tracing every 15-30 minutes (without oxytocin) and every 15 minutes (with oxytocin use).
- The reasons, benefits and limitations for EFM use should be explained so that the client can make an informed choice.
- The EFM tracing becomes a part of the record of care and relevant events and interventions are noted on the client chart.
- Registered midwives performing EFM are responsible for obtaining an interpretable EFM tracing including both the FHR and contractions, and:
 - Interpreting the EFM tracing and consulting with a physician when an atypical or abnormal finding is present
 - Ensuring that EFM data is documented on the client's chart
 - Carrying out appropriate intrauterine resuscitation when indicated (including position changes, vaginal assessments for progress and to rule out cord prolapse, providing oxygen by mask, initiating or increasing IV fluids, discontinuing oxytocin infusion, supporting the client and family, communication and documentation)

⁹ For a list of risk factors refer to the SOGC, *Fetal Health Surveillance Guideline 2008* and to *Fundamentals of Fetal Health Surveillance A Self-Learning Manual 2013*

¹⁰ Refer to the *CMBC Guideline For Inserting A Fetal Spiral Electrode For Use With An Electronic Fetal Heart Monitor*

¹¹ Applying an internal fetal monitor is not recommended in these situations but may be acceptable if there are clinical benefits.

When EFM results in atypical or abnormal findings, physician consultation is recommended.

Classification of EFM is as follows: Normal, Atypical, Abnormal

Please refer to the EFM Classification chart below¹²

Table 15. Classification of intrapartum EFM tracings			
	Normal Tracing Previously "Reassuring"	Atypical Tracing Previously "Non-reassuring"	Abnormal Tracing Previously "Non-reassuring"
Baseline	110–160 bpm	Bradycardia 100–110 bpm Tachycardia > 160 for > 30 min to < 80 min. Rising baseline	Bradycardia < 100 bpm Tachycardia > 160 for > 80 min. Erratic baseline
Variability	6–25 bpm ≤ 5 bpm for < 40 min.	≤ 5 bpm for 40–80 min.	≤ 5 bpm for > 80 min. ≥ 25 bpm for > 10 min. Sinusoidal
Decelerations	None or occasional uncomplicated variables or early decelerations	Repetitive (≥ 3) uncomplicated variable decelerations Occasional late decelerations Single prolonged deceleration > 2 min. but < 3 min.	Repetitive (≥ 3) complicated variables: deceleration to < 70 bpm for > 60 secs. loss of variability in trough or in baseline biphasic decelerations overshoots slow return to baseline baseline lower after deceleration baseline tachycardia or bradycardia Late decelerations > 50% of contractions Single prolonged deceleration > 3 min. but < 10 min.
Accelerations	Spontaneous accelerations present (FHR increases ≥15 bpm lasting ≥ 15 seconds; < 32 weeks' gestation increase in the FHR ≥ 10 bpm lasting ≥10 seconds) Accelerations present with fetal scalp stimulation	Absence of acceleration with fetal scalp stimulation	Usually absent*
ACTION	EFM may be interrupted for periods up to 30 min. if maternal-fetal condition stable and/or oxytocin infusion rate stable	Further vigilant assessment required, especially when combined features present.	ACTION REQUIRED Review overall clinical situation, obtain scalp pH if appropriate/prepare for delivery.

*Usually absent, but if accelerations are present, this does not change the classification of tracing.

¹² SOGC 2007

References

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- The WHO Reproductive Health Library, 2007, *Pregnancy and Childbirth*. Available from: http://apps.who.int/rhl/pregnancy_childbirth/en/
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