1. **PREAMBLE**

This guideline is designed as an adjunct to the Society of Obstetricians and Gynecologists (SOGC) guidelines on Fetal Health Surveillance in Labour. The information contained in this guideline is consistent with the Fetal Health Surveillance in Labour manual produced by the Canadian Perinatal Regionalization Coalition and endorsed by the SOGC.

The SOGC states that Intermittent Auscultation (IA) is the preferred method of fetal surveillance for healthy low risk women in labour providing the following criteria are met:
- The presence of practitioners experienced in the technique of auscultation, the palpation of contractions, and the auditory recognition of pertinent fetal heart (FH) changes.
- The existence of a procedure/guideline addressing the technique and frequency of assessment
- The presence of a guideline outlining clinical interventions when non-reassuring findings are present

2. **FACILITY POLICIES AND PROCEDURES**

All facilities in BC providing planned or emergency obstetrical services require policies and procedures relating to:
- Indications for IA
- Techniques for IA
- Frequency of IA in latent, first, and second stages of labour
- Nursing management for non-reassuring IA findings
- Lines of communication 24/7 and consultation processes between caregivers.

3. **INDICATIONS FOR AUSCULTATION**

3.1 **USE IA FOR ALL HEALTHY, TERM WOMEN IN LABOUR WITH NO IDENTIFIABLE RISK FACTORS FOR ADVERSE PERINATAL OUTCOME**

3.2 **ASSESS FH BEFORE**

- initiation of labour-enhancing procedures, e.g. amniotomy
- administration of medications
- administration or initiation of analgesia/anaesthesia
- transfer or discharge of patient

3.3. **ASSESS FH AFTER**

- admission of patient
- artificial or spontaneous rupture of membranes
- vaginal examinations
- abnormal uterine activity patterns, e.g. increased basal tone or tachysystole
- any untoward event during labour, e.g. maternal hypotension
3.4. **INTERMITTENT AUSCULTATION AND EPIDURAL ANALGESIA**

- The use of IA is appropriate after initiation of regional analgesia
- It is reasonable to increase the frequency of IA to every 5 minutes for 30 minutes after any epidural injection
- If maternal hypotension is a persistent problem, continuous electronic fetal monitoring (EFM) should be initiated

4. **METHOD OF AUSCULTATION**

4.1 **AUSCULTATE IMMEDIATELY AFTER A CONTRACTION FOR ONE FULL MINUTE**

*Note*: Some clinicians support listening through the contraction during first stage of labour to identify any cord compression as early as possible. However, no study has been completed to date to determine whether or not this makes a difference in neonatal outcome.

4.2 **TO CLARIFY FH ACCELERATIONS AND DECELERATIONS**

Counts for 6-second intervals (multiplied by 10) may be helpful (this practice is not supported by research evidence).

5. **FREQUENCY OF AUSCULTATION**

5.1 **LATENT PHASE OF LABOUR**

There is no good data on which to base a recommendation for fetal heart observation during the latent phase of labour. Most women will pass through the latent phase of labour with family support at home.

5.2 **ESTABLISHED LABOUR (Regular uterine contractions accompanied by cervical changes)**

Assess the FH by IA every 15-30 minutes.

5.3 **ACTIVE SECOND STAGE OF LABOUR**

Assess the FH by IA every 5 minutes in the second stage of labour once the woman has begun pushing. Some clinicians support assessing the FH after every contraction in active second stage but there is no research evidence supporting this practice.

6. **INTERMITTENT AUSCULTATION ASSESSMENT**

6.1 **ASSESS**

- Baseline fetal heart rate (FHR) (counted for one minute between contractions, in bpm)
- Rhythm (regular or irregular)
- Accelerations
- Decelerations (abrupt or gradual)

*Note*: There is no research to indicate that the practitioner can distinguish the type of deceleration. Therefore, **decelerations cannot be classified** as they can be when using EFM.
6.2 DO NOT ASSESS

- Baseline variability
- Classification/type of deceleration heard

7.0 PROCEDURE FOR FH AUSCULTATION

- Palpate the maternal abdomen to identify fetal lie, presentation and position
- Place the Doppler over the area of maximum intensity of fetal heart sounds (usually over the fetal back)
- Place a finger on mother's radial pulse to differentiate maternal from fetal heart rate
- Listen to the FH for at least 60 seconds immediately after a contraction, (some clinicians listen through a contraction but this practice is not supported by empirical evidence)
- To clarify FH accelerations and decelerations, counts for 6-second intervals (multiplied by 10) may be helpful (this practice is not supported by empirical evidence)
- Palpate uterine contractions during auscultation in order to clarify the relationship between the FHR and the contractions.

8. INTERPRETATION

8.1 REASSURING

- Normal baseline FHR (110 to 160 bpm)
- Presence of accelerations

8.2 NON-REASSURING

- Abnormal baseline FHR
  a) Tachycardia (FHR > 160 bpm)
  b) Bradycardia (FHR < 110 bpm)
- Changing FHR – if an increasing or decreasing FHR is detected over time, one may investigate before the absolute values of bradycardia or tachycardia are reached
- Presence of decelerations

9. CLINICAL MANAGEMENT

The data from intermittent auscultation should always be interpreted in conjunction with the total clinical picture. Interpretation of the findings is dependent on the stage of labour, the maternal clinical condition and fetal health prior to labour.

9.1 REASSURING

- Continue to assess as per protocol

9.2 NON-REASSURING

- Perform further assessments to confirm findings and determine potential causes (auscultate FH again; check maternal pulse, BP and temperature; perform vaginal exam)
- Interpret the non-reassuring findings in conjunction with the total clinical picture
Intermittent Auscultation in Labour

- **Intervene** in an attempt to eliminate or reduce the effects of the cause, and to promote four physiological goals (improve uterine blood flow, improve umbilical blood flow, improve fetal oxygenation, and decrease uterine activity)
- Consider the use of **additional fetal health surveillance** measures (EFM, fetal scalp sampling)
  
  **Note:** The decision of when to change from IA to EFM is determined by the severity of the non-reassuring findings and is based on clinical judgment
- **Notify** primary care provider
- Consider patient transfer or delivery, as appropriate

10. **DOCUMENTATION**

   Documentation of IA should be done according to facility policies and consistent with the BCRCP Perinatal Forms Guidelines 2: Generic Charting Guideline for Perinatal Care Providers and 4: Labour Admission and Partogram (HLTH 1583).

   For **common questions related to intermittent auscultation**, see Appendix A.

**REFERENCES**

3. Fischbeck Feinstein, N., Sprague, A., & Trepanier, MJ. (2000). Fetal Heart Rate Auscultation. AWHONN.
APPENDIX A

COMMON QUESTIONS RELATED TO INTERMITTENT AUSCULTATION

1. **How can I be comfortable relying solely on auscultation findings when I’m so used to looking at the EFM tracing?**
   Remember that the current guidelines established by professional organizations about intrapartum fetal heart surveillance were produced after a thorough review of the literature and are evidence-based. The evidence consistently demonstrates that use of IA leads to similar neonatal outcomes as use of EFM and is associated with fewer obstetric interventions such as cesarean birth. In a court of law, you are judged according to what a reasonable person would do under similar circumstances. Therefore, if your hospital implements new recommendations about FHR auscultation (which are national standards), and you follow your hospital policy based on the patient’s clinical condition, you will have performed the appropriate procedure at the time, regardless of the final outcome.

2. **We don’t have the staffing for one-to-one nursing care during labour. How can we possibly implement auscultation?**
   There is no easy answer to this question. There is strong evidence about the positive effects of continuous support during labour, which goes hand-in-hand with auscultation. Units striving toward evidence-based practice should therefore develop a philosophy of care that promotes close support of women in labour and the use of auscultation for low-risk women in labour. Perhaps it is time to take a close look at what tasks nurses are performing in your unit. Which tasks are non-nursing in nature (e.g. cleaning beds or floors following deliveries)? Which tasks are inefficient (e.g. documenting the same information in a number of places)? What keeps nurses away from the patient’s bedside (e.g. charting at the nurses’ station and not in the patient’s room)? Many units are now finding other ways to increase their efficiency such as having an outpatient lounge for women who are not in active labour.

3. **Our hospital has many electronic fetal monitors but does not have the budget to purchase new Doppler technology. Can we use the ultrasound transducers from the fetal monitor for auscultation?**
   The technology for the Doppler and the EFM ultrasound transducer are basically the same in that they both generate a fetal heart sound from deflected ultrasound waves. For that reason, the EFM ultrasound transducer can be used to produce auscultation findings (i.e. the FHR) as long as the paper recorder is turned off. However, if the paper recorder is on or the heart rate data is being archived in a computer database and a tracing is produced, it cannot be considered auscultation alone, as all the fetal heart characteristics generated on the EFM tracing need to be interpreted. In the latter case, you are generating additional data that you may be compelled to assess.

4. **If we are so concerned with FHR variability when interpreting EFM data, why are we not assessing variability when using auscultation?**
   Variability of the FHR cannot be assessed with auscultation because it is a characteristic generated visually on an EFM tracing. Therefore, you can only assess variability with EFM. Again, in examining the research evidence, there were no significant differences in newborn outcomes between women monitored with EFM and those who received auscultation, even though variability could not be determined with auscultation. If the woman and her fetus have multiple clinical risk factors during the perinatal periods, using EFM to evaluate the variability is an option.
5. **HOW CAN I PROVE THAT I LISTENED TO THE FHR DURING LABOUR IF I DON’T HAVE A TRACING TO BACK ME UP?**
If you follow your hospitals policies, document an auscultated FHR at a particular time, and it is consistent with all the other clinical information, this confirms you have performed auscultation according to the policies. This is similar to documenting a blood pressure reading, a temperature, or the administration of medication, which also have no visual component that proves they were performed.

6. **WHAT ARE THE CRITERIA THAT WOULD INDICATE A CHANGE FROM THE LOW-RISK TO THE HIGH-RISK CATEGORY?**
A precise, research-based answer to this question does not exist. Most birthing units are developing lists of criteria for women eligible for auscultation and those needing EFM. The criteria may differ among institutions. For example, some units require women who receive epidural analgesia to be monitored by EFM, and others consider auscultation safe for a patient in this situation with a low-risk history. Probably the best answer is to discuss the issues with other health care providers in your area and arrive at a consensus. With additional research and RCT’s, clearer evidence-based guidelines may be established for particular situations.

7. **IF WE ONLY LISTEN TO THE HEART RATE AFTER CONTRACTIONS, AREN’T WE GOING TO MISS SOME CLINICALLY IMPORTANT DATA THAT OCCURS DURING CONTRACTIONS?**
The research evidence showing that auscultation and EFM lead to similar clinical outcomes resulted from studies in which auscultation was only performed after contractions. Some clinicians, however, choose to auscultate through a contraction during first stage of labour to identify any decelerations that may be present during the contraction. One should keep in mind that this can be uncomfortable for the mother, and one should remember that there are no studies that have determined the efficacy of this practice.

8. **WHAT IF I MISS CLINICALLY RELEVANT DATA IN THE 15 OR 30 MINUTES SINCE I LAST LISTENED TO THE FHR?**
The results of the RCT’s showed no significant difference in neonatal outcomes between women who were monitored using EFM and those monitored by auscultation. Therefore, you may in fact miss “something” in the FHR but over time, you should notice trends. For example, you may note a gradual increase in the baseline rate over time. The same could be said for a woman who is being monitored with EFM but does not always have a caregiver at her side: if there is no one to inspect the tracing every 15-30 minutes, you may also miss “something”.

9. **HOW WILL I MAKE CLINICAL DECISIONS BASED ON AUSCULTATION DATA WHEN I AM USED TO WORKING WITH EFM?**
The overall clinical decision-making process does not differ with auscultation – it is merely a different technique of fetal surveillance. You will still consider the FHR data in conjunction with the total clinical picture. For example, if you hear an abrupt or gradual decrease after a contraction, it should alert you to the possibility of a problem, and you should evaluate potential causes. Some practitioners may want to switch to EFM in this case. However, if you were using EFM and encountered the same pattern, you would probably wait to see what happens with the next contraction. Similarly, with auscultation, when you hear a nonreassuring heart rate with one contraction, you can listen after the next one. If the decrease in the FHR persists, then your decision-making process would lead you to try corrective interventions based on what you believe to be the physiologic cause of the problem. The decision to use another surveillance method, such as EFM, will be guided by your institution’s policy.
10. HOW LONG SHOULD I WAIT TO REACT TO A NONREASSURING FHR CHARACTERISTIC WHEN AUSCULTATING: ONE, TWO, THREE OR MORE CONTRACTIONS?

There is little scientific evidence to answer this question for either EFM or auscultation. However, common sense suggests that if after a contraction you hear a decrease in the FHR that returns to baseline, you need to listen again after the next few contractions to clarify your findings. You can then combine that information with the total clinical picture and act accordingly. If, on the other hand, the FHR does not return to baseline and the decreased heart rate persists, you should intervene immediately to maximize fetal oxygenation and attempt to determine the cause of the decrease. Additional assessments of fetal oxygenation status also may be used (e.g. perform fetal scalp stimulation or assist in fetal scalp sampling to rule out acidemia with persistent nonreassuring FHR characteristics).

11. WHAT DO WE CALL DECREASES OR INCREASES IN HEART RATE? ISN’T THAT A DECELERATION OR AN ACCELERATION?

For the purposes of this document, deceleration is defined as a “decrease in speed or rate” (Taber, 1997, p. 492). An acceleration is defined as an increase in the “speed or rate” (Taber, 1997, p. 14). Therefore, when you hear a decrease or increase from the baseline rate, you are technically correct in calling that a deceleration or an acceleration, respectively. However, it is critical to remember that while you can hear a decrease or deceleration from the baseline FHR, it is not possible to differentiate the type of deceleration heard (e.g. late, variable, or early) when using intermittent auscultation.

12. I’M AFRAID THAT IN A COURT OF LAW I MAY BE HELD NEGLIGENT FOR NOT PROVIDING EFM, EVEN TO LOW-RISK PATIENTS. WHAT IS MY MEDICAL-LEGAL RISK?

In a court of law you will be judged according to the professional standards and hospital policies and procedures. There have been two cases in British Columbia (Penman versus Gerretsen, 1997 & Johnson-Coy versus Barker, 1995) where the appropriateness of intermittent auscultation was challenged by the plaintiff. In both cases the judges implicitly accepted auscultation as the appropriate method of fetal assessment. In the Reasons for Judgment in Penman verses Gerretsen (1997), the judge states, “The standard expected of a community hospital such as the defendant hospital in this case requires, in respect of a low risk pregnancy, the monitoring of the FHR by auscultation not less frequently than every thirty minutes and for one minute immediately following…[the] contraction during the first stage of labour, and not less frequently than every five minutes and for one minute following…[the] contraction during the second stage of labour to delivery”. The use of intermittent auscultation during low risk labour has already been challenged in the courts in B.C. and it has been judged as an appropriate method of fetal surveillance. You must, of course, follow the recommended policy and guidelines for the frequency of IA during latent, active, and second stage of labour, and perform IA according to your facility policies and procedures.