



The Royal College of
Midwives

Evidence Based Guidelines *for* *Midwifery-Led Care in Labour*

Intermittent Auscultation (IA)



Practice Points

A discussion about fetal monitoring should take place antenatally between the woman and her midwife (Thacker et al. 2004). If this has not taken place by the time the woman goes into labour, it should form part of the initial discussion about the woman's birth plan.

For women with no risk factors for fetal hypoxia in normal labour, intermittent auscultation is the method of choice because of the increased level of intervention associated with electronic fetal monitoring (Alfirevic et al. 2006; NICE 2007).

An abdominal palpation should be performed to determine the optimal area for listening to the fetal heart.

A pinard or fetal stethoscope should be used at initial assessment to establish the real sound of the fetal heart and to aid confirmation of presentation and position.

The maternal pulse should be palpated at the initial assessment, hourly throughout labour and if an FHR abnormality is detected, to differentiate between the two heart rates (NICE 2007).

Current evidence does not support the use of the admission CTG in low risk pregnancy (Devane et al. 2012; NICE 2007; Blix et al. 2003; Impey et al. 2003; Mires et al. 2001). Midwives should justify why this intervention has been undertaken.

Monitoring fetal well-being is a holistic process involving multiple clinical criteria included in a full assessment which should be recorded and an action plan documented.

EFM should never be offered as a substitute for, or interfere with, continuous care and support during labour (MIDIRS 2008).

If the auscultated fetal heart rate gives reason for concern, or if any intrapartum risk factors develop, then a continuous record should be obtained using electronic fetal monitoring.

Intermittent Auscultation (IA)

The goal of intrapartum fetal monitoring is to validate the fetus's ability to respond positively to the stress of labour. Intermittent auscultation (IA) of the fetal heart was the chosen method of fetal assessment during labour until the introduction of electronic fetal monitoring (EFM) in the late 1960s. As a new technology EFM quickly gained ground and in the next two decades several randomised controlled trials were conducted comparing EFM to IA. These have suggested that there is no significant improvement in outcome for the baby by using EFM during labour for low risk pregnancies (Mahomed et al. 1994; McDonald et al. 1985; Kelso et al. 1978; Haverkamp et al. 1976). This has been supported more recently by a Cochrane systematic review comparing neonatal outcomes following the use of EFM and intermittent auscultation (Alfirevic et al. 2006). Although continuous electronic monitoring was linked to a reduction in neonatal seizures there was no significant difference in overall infant mortality or other standard measures of neonatal well-being and women who were in the intervention group were significantly more likely to have an instrumental birth or a caesarean section. Pateman et al. (2008) discuss how electronic fetal heart monitoring is not 100% sensitive or specific for diagnosing cerebral palsy. This is supported by the study by Schiermeier et al. (2008) which showed 95% sensitivity for 'suspect' pathology but very low specificity for fetal acidosis. The problem of EFM as a poor predictor of fetal compromise is thus compounded by its low specificity (the ability to identify those fetuses that are not distressed) and the consequent increase in operative and assisted delivery rates, without showing a reduction in perinatal mortality, or the incidence of cerebral palsy (Ayres-de-Campo 2010; Alfirevic 2006).

Because of the increased level of intervention attached to electronic fetal monitoring, the recommendation for women with no risk factors for fetal hypoxia in normal labour is intermittent auscultation (Alfirevic et al. 2006; NICE 2007).

As Thacker et al. stated in 2004, the decision about fetal monitoring should be made in a joint discussion between the woman and her midwife in the antenatal period. If this has not taken place by the time the woman goes into labour it should form part of the discussion of the birth plan. The midwife must ensure that advice given is evidence based (NMC 2009a). Following discussion, it is the woman who will make the decision based upon her individual needs and preferences (NMC 2004). Electronic fetal monitoring should never be offered as a substitute for, or interfere with, continuous care and support during labour (MIDIRS 2008).

Current evidence does not support the use of the admission CTG in low risk pregnancy (Devane et al. 2010; NICE 2007; Blix et al. 2003; Impey et al. 2003; Mires et al. 2001). If the intervention is undertaken, midwives should justify and document the reason (NMC 2010).

There has been only one randomised controlled trial, which has included women's preferences of monitoring (Garcia et al. 1985). This reported that women were more likely to feel that their movements were restricted by EFM but otherwise showed little preferences. It must be noted that this trial took place in a hospital where personal and continuous care from a midwife for all women was a key feature of hospital policy. The report states, however, that even in that hospital "there is a suggestion that women monitored with EFM were more likely to be left alone for short periods".

It has to be acknowledged that fetal monitoring has several components, being a process based on an appropriate assessment pathway. A healthy term fetus will react normally to the stress of labour and normal progress in labour will maintain this equilibrium. A holistic approach to assessing fetal wellbeing in labour includes an understanding of the normal physiology of fetal heart rate changes during labour and recognition of factors that influence it (Chandrabaran 2010). Continuous assessment should include consideration of clinical factors such as progress in labour, maternal hydration, uterine stimulation, and the use of opioids which have an effect on the fetal somatic system. Fetal activity is a positive sign of fetal well-being, it is therefore appropriate to discuss fetal movements with the mother and listen during periods of activity to detect accelerations.

NICE (2007) details a list of risk factors which indicate that a change to using EFM is appropriate. However, it is recommended that the midwife is alert to all clinical factors which may have an impact upon the ability of the fetus to cope during labour (Chandrabaran 2010).

NICE (2007) recommends that IA should consist of listening to the fetal heart after a contraction for minimum of 60 seconds every 15 minutes in the first stage, every 5 minutes in the second stage and the rate should be recorded as an average in a single figure.

There is a lack of clear evidence to guide the frequency of intermittent auscultation and this remains a matter of on-going debate amongst the midwifery community. There does not appear to be any good evidence from trials to recommend any particular frequency and duration of IA. Therefore, it is more a 'custom and practice' than 'evidence-based' process (Walsh 2008).

The Society of Obstetricians and Gynecologists of Canada recommend first stage auscultation to be recorded every 15 to 30 minutes and every 5 minutes in second stage. The American College of Obstetricians and Gynecologists and the Royal College of Obstetricians and Gynaecologists (subsequently recommendations made by NICE) both suggest 15 minute auscultations during the first stage and 5 minute auscultations during the second stage (Liston et al. 2007). This timing is made through consensus of expert opinion rather than as a result of evidence. Consequently some authors have challenged it suggesting that every 15 minutes during the first stage is too disruptive for the labouring woman and time consuming for the midwife (Sholapurkar 2010). This obstetrician argues that prolonged bradycardia is rare, and in the scenario with no risk factors for fetal hypoxia, an assessment every 30 minutes should not lead to a delay in recognition of abnormalities. An alternative intensive assessment lasting 10 minutes every 30 minutes is suggested in which the clinician listens to the fetal heart following 3 contractions during the 10 minute period and during this time also assesses the frequency and strength of contractions. However, NICE guidance is referenced within the clinical risk management standards and currently informs local unit protocols (NHSLA 2011).

The recommendations from NICE (2007) also state that the auscultation should take place following a contraction. This again is based upon expert consensus opinion rather than high level evidence, although it is fair to say that increasing knowledge regarding the physiology of the fetus during labour helps to guide opinion. Sholapurkar (2010) suggests that listening following a contraction alone may allow for the misinterpretation of a deceleration as a normal baseline. This is a hypothetical argument but offers a note of caution. His recommendation is that the baseline should be assessed between contractions and the on-going assessment should be based on this.

Goodwin (2000) suggests that auscultation can “easily” detect fetal tachycardia, bradycardia and the impression of accelerations and decelerations. However, she states that the technique does not give ample information to support the description of the FHR pattern or the type of deceleration. Goodwin makes these recommendations based upon a comprehensive review of the studies previously discussed.

None of the literature, either the few studies examining IA method or the guidance produced by experts in the field, suggests that variability can be determined. Conclusions are drawn that, due to the findings that randomised controlled trials have confirmed the equivalence of IA to EFM in terms of neonatal outcome, it doesn’t appear significant that variability and type of deceleration cannot be determined (ACNM 2010).

Fetal heart sounds can be heard using a fetal or Pinard stethoscope or a hand held Doppler device. The Pinard stethoscope allows the clinician to hear the actual heart sounds. Auscultation with the hand held Doppler uses ultrasound to detect motion of the fetal heart valves or walls and converts this information into a sound that is heard or displayed as a representation of the fetal cardiac cycle. There continues to be debate concerning the use of the Pinard stethoscope within today’s modern practice and it would appear that its use is a dying skill despite the fact that it is specifically included within the standards for pre-registration midwifery education (NMC 2009b, p44). Discussion published by the Association of Radical Midwives demonstrates that some midwives firmly believe that the Pinard is a tool that is vital in the assessment of fetal wellbeing despite the fact that it can be difficult to use depending upon the position of the mother and that it does not give the mother the reassurance that is gained from hearing the heart beat (ARM 2000). It is also recognised that as the Doppler converts movement of the heart into sound there is potential for this to be inaccurate and misinterpreted. It is currently recommended that the Pinard stethoscope should be used in the first instance to determine that there is a fetal heart before applying a CTG or when any concern arises (MHRA 2010). Most importantly, the maternal pulse must be palpated to differentiate between the sounds.

The importance of record keeping and regular re-assessment of action plans is set by the Midwives Professional Standards (NMC 2010; NMC 2004). It needs to be clear if an escalation of monitoring the fetal heart is required and why this decision has been made.

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The guidelines have been developed under the auspices of the RCM Guideline
Advisory Group with final approval by the Director of Learning Research and Practice
Development, Professional Midwifery Lead.

The guideline review process will commence in 2016 unless evidence requires
earlier review.

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Appendix A

Sources

The following electronic databases were searched: The Cochrane Database of Systematic Reviews, MEDLINE, Embase and MIDIRS. As this document is an update of research previously carried out, the publication time period was restricted to 2008 to March 2011. The search was undertaken by Mary Dharmachandran, Project Librarian (RCM Collection), The Royal College of Obstetricians and Gynaecologists.

Search Terms

Separate search strategies were developed for each section of the review. Initial search terms for each discrete area were identified by the authors. For each search, a combination of MeSH and keyword (free text) terms was used.

Journals hand-searched by the authors were as follows:

- Birth
- British Journal of Midwifery
- Midwifery
- Practising Midwife
- Evidence-based Midwifery