



Complete Summary

GUIDELINE TITLE

Intrapartum fetal surveillance. In: Fetal health surveillance: antepartum and intrapartum consensus guideline.

BIBLIOGRAPHIC SOURCE(S)

Intrapartum fetal surveillance. In: Fetal health surveillance: antepartum and intrapartum consensus guideline. J Obstet Gynaecol Can 2007 Sep;29(9 Suppl 4):S25-44.

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

IDENTIFYING INFORMATION AND AVAILABILITY

DISCLAIMER

SCOPE

DISEASE/CONDITION(S)

- Pregnancy
- Hypoxic acidemia
- Neonatal encephalopathy
- Perinatal and neonatal complications
- Hypoxic ischemic encephalopathy
- Cerebral palsy

GUIDELINE CATEGORY

Evaluation
Management

Prevention
Risk Assessment

CLINICAL SPECIALTY

Family Practice
Obstetrics and Gynecology
Pediatrics
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To provide new recommendations pertaining to the application and documentation of fetal surveillance in the antepartum and intrapartum period that will decrease the incidence of birth asphyxia while maintaining the lowest possible rate of obstetrical intervention. Pregnancies with and without risk factors for adverse perinatal outcomes are considered.
- To detect potential fetal decompensation and to allow timely and effective intervention to prevent perinatal/neonatal morbidity or mortality
- To promote an alternative classification system for antenatal non-stress testing and intrapartum electronic fetal surveillance
- To promote clarity and consistency in communicating and managing electronic fetal heart tracing findings

TARGET POPULATION

Pregnant women in labor

INTERVENTIONS AND PRACTICES CONSIDERED

1. Close continuous support for women during active labour
2. Intermittent auscultation in labour
3. Admission cardiotocography (fetal heart test for pregnancies at risk of adverse perinatal outcomes)
4. Electronic fetal monitoring (for pregnancies at risk of adverse perinatal outcomes)
5. Digital fetal scalp stimulation
6. Fetal scalp blood sampling
7. Umbilical cord blood gases

Note: ST waveform analysis, intrapartum fetal scalp lactate testing and fetal pulse oximetry were considered but not recommended.

MAJOR OUTCOMES CONSIDERED

- Antenatal and intrapartum fetal morbidity
- Antenatal and intrapartum fetal mortality
- Birth asphyxia
- Rates of operative and other labour interventions

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A comprehensive review of randomized controlled trials published between January 1996 and March 2007 was undertaken, and MEDLINE and the Cochrane Database were used to search the literature for all new studies on fetal surveillance both antepartum and intrapartum.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Quality of Evidence Assessment*

I: Evidence obtained from at least one properly randomized controlled trial.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one center or research group.

II-3: Evidence obtained from comparison between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

*The quality of evidence reported in these guidelines has been adapted from The Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The level of evidence has been determined using the criteria and classifications of the Canadian Task Force on Preventive Health Care.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Classification of Recommendations†

- A. There is good evidence to recommend the clinical preventive action
- B. There is fair evidence to recommend the clinical preventive action
- C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
- D. There is fair evidence to recommend against the clinical preventive action
- E. There is good evidence to recommend against the clinical preventive action
- I. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

† Recommendations included in these guidelines have been adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This guideline has been reviewed and approved by the Maternal-Fetal Medicine Committee, the Clinical Obstetrics Committee, and the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The grades of recommendations (A-E and I) and levels of evidence (I, II-1, II-2, II-3, and III) are defined at the end of the "Major Recommendations" field.

Fetal Surveillance in Labor

Labour Support During Active Labor

1. Women in active labour should receive continuous close support from an appropriately trained person. **(I-A)**

Professional One-to-One Care and Intrapartum Fetal Surveillance

1. Intensive fetal surveillance by intermittent auscultation or electronic fetal monitoring requires the continuous presence of nursing or midwifery staff. One-to-one care of the woman is recommended, recognizing that the nurse/midwife is really caring for two patients, the woman and her unborn baby. **(III-C)**

Intermittent Auscultation in Labour

1. Intrapartum fetal surveillance for healthy term women in spontaneous labour in the absence of risk factors for adverse perinatal outcome. Intermittent auscultation following an established protocol of surveillance and response is the recommended method of fetal surveillance; compared with electronic fetal monitoring, it has lower intervention rates without evidence of compromising neonatal outcome. **(I-B)**
2. Epidural analgesia and intermittent auscultation. Intermittent auscultation may be used to monitor the fetus when epidural analgesia is used during labour, provided that a protocol is in place for frequent intermittent auscultation assessment (e.g., every 5 minutes for 30 minutes after epidural initiation and after bolus top-ups as long as maternal vital signs are normal). **(III-B)**

Admission Fetal Heart Test

1. Admission fetal heart tracings are not recommended for healthy women at term in labour in the absence of risk factors for adverse perinatal outcome, as there is no evident benefit. **(I-A)**

2. Admission fetal heart tracings are recommended for women with risk factors for adverse perinatal outcome. **(III-B)**

Intrapartum Fetal Surveillance for Women with Risk Factors for Adverse Perinatal Outcome

1. Electronic fetal monitoring is recommended for pregnancies at risk of adverse perinatal outcome. **(II-A)**
2. Normal electronic fetal monitoring tracings during the first stage of labour. When a normal tracing is identified, it may be appropriate to interrupt the electronic fetal monitoring tracing for up to 30 minutes to facilitate periods of ambulation, bathing, or position change, providing that (1) the maternal-fetal condition is stable and (2) if oxytocin is being administered, the infusion rate is not increased. **(III-B)**

Digital Fetal Scalp Stimulation

1. Digital fetal scalp stimulation is recommended in response to atypical electronic fetal heart tracings. **(II-B)**
2. In the absence of a positive acceleratory response with digital fetal scalp stimulation:
 - Fetal scalp blood sampling is recommended when available. **(II-B)**
 - If fetal scalp blood sampling is not available, consideration should be given to prompt delivery, depending upon the overall clinical situation. **(III-C)**

Fetal Scalp Blood Sampling

1. Where facilities and expertise exist, fetal scalp blood sampling for assessment of fetal acid-base status is recommended in women with "atypical/abnormal" fetal heart tracings at gestations > 34 weeks when delivery is not imminent, or if digital fetal scalp stimulation does not result in an acceleratory fetal heart rate response. **(III-C)**

Umbilical Cord Blood Gases

1. Ideally, cord blood sampling of both umbilical arterial and umbilical venous blood is recommended for ALL births, for quality assurance and improvement purposes. If only one sample is possible, it should preferably be arterial. **(III-B)**
2. When risk factors for adverse perinatal outcome exist, or when intervention for fetal indications occurs, sampling of arterial and venous cord gases is strongly recommended. **(I-insufficient evidence.** See Table 1 in the original guideline document).

Fetal Pulse Oximetry

1. Fetal pulse oximetry, with or without electronic fetal surveillance, is not recommended for routine use at this time. **(III-C)**

ST Waveform Analysis

1. The use of ST waveform analysis for the intrapartum assessment of the compromised fetus is not recommended for routine use at this time. **(I-A)**

Intrapartum Fetal Scalp Lactate Testing

1. Intrapartum scalp lactate testing is not recommended for routine use at this time. **(III-C)**

Definitions:

Levels of Evidence*

I: Evidence obtained from at least one properly randomized controlled trial.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case-control studies, preferably from more than one center or research group.

II-3: Evidence obtained from comparison between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

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Grades of Recommendations †

A. There is good evidence to recommend the clinical preventive action

B. There is fair evidence to recommend the clinical preventive action

C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making

D. There is fair evidence to recommend against the clinical preventive action

E. There is good evidence to recommend against the clinical preventive action

L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

† Recommendations included in these guidelines have been adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.

CLINICAL ALGORITHM(S)

The following clinical algorithms are provided in the original guideline document:

- Decision support tool–intermittent auscultation in labour for healthy term women without risk factors for adverse perinatal outcome
- Algorithm–clinical management of normal, atypical, and abnormal electronic fetal monitoring (EFM) (intrapartum)

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Increased identification of specific patient populations expected to benefit from antenatal and intrapartum testing
- Appropriate antenatal and intrapartum fetal surveillance pregnant women and reduction of perinatal morbidity and mortality
- Decreased incidence of birth asphyxia while maintaining the lowest possible rate of obstetrical intervention
- Use of a consistent classification system for antenatal and intrapartum cardiotocography
- Improved clarity and consistency in communicating and managing electronic fetal heart tracing findings

POTENTIAL HARMS

Repeated fetal scalp blood sampling is uncomfortable for the mother, and repeated scalp puncture increases trauma to and bleeding from the fetal scalp.

CONTRAINDICATIONS

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- Contraindications for internal fetal scalp monitoring include placenta previa, face presentation, unknown presentation, human immunodeficiency virus (HIV) seropositivity, or active genital herpes.
- Digital scalp stimulation is best avoided during a deceleration, as the deceleration reflects a vagal response that prevents any sympathetic nerve response during scalp stimulation.
- Fetal scalp blood sampling is contraindicated if there is a family history of hemophilia, a suspected fetal bleeding disorder (suspected fetal thrombocytopenia), or face presentation, or in the presence of maternal

infection (HIV, hepatitis viruses, herpes simplex, suspected intrauterine sepsis).

QUALIFYING STATEMENTS

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This guideline reflects emerging clinical and scientific advances as of the date issued and are subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Local institutions can dictate amendments to these opinions. They should be well documented if modified at the local level. None of these contents may be reproduced in any form without prior written permission of the SOGC.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Clinical Algorithm

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Safety
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Intrapartum fetal surveillance. In: Fetal health surveillance: antepartum and intrapartum consensus guideline. J Obstet Gynaecol Can 2007 Sep;29(9 Suppl 4):S25-44.

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2007 Sep

GUIDELINE DEVELOPER(S)

Society of Obstetricians and Gynaecologists of Canada - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of Obstetricians and Gynaecologists of Canada. This consensus was partly supported by an unrestricted educational grant from the British Columbia Perinatal Health Program.

GUIDELINE COMMITTEE

Fetal Health Surveillance Consensus Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Disclosure statements have been received from all members of the committees.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [Society of Obstetricians and Gynaecologists of Canada Web site](#).

Print copies: Available from the Society of Obstetricians and Gynaecologists of Canada, La société des obstétriciens et gynécologues du Canada (SOGC) 780 promenade Echo Drive Ottawa, ON K1S 5R7 (Canada); Phone: 1-800-561-2416

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on July 8, 2009. The information was verified by the guideline developer on July 14, 2009.

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