Content of a Complete Routine Second Trimester Obstetrical Ultrasound Examination and Report

This clinical practice guideline has been reviewed by the Diagnostic Imaging Committee and approved by the Executive and Council of the Society of Obstetricians and Gynaecologists of Canada.

The Society of Obstetricians and Gynaecologists of Canada acknowledges advisory input from the Canadian Association of Radiologists pertaining to imaging guidelines in the creation of this document.

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

Objective: To review the benefits of and requirements for a complete second trimester ultrasound and the documentation needed.

Outcomes: A complete second trimester ultrasound provides information about the number of fetuses, the gestational age, the location of the placenta, and fetal and maternal anatomy.

Evidence: In the production of this document, the American Institute of Ultrasound in Medicine’s “Practice Guideline for the Performance of Obstetric Ultrasound Examinations,” the American College of Obstetricians and Gynaecologists’ practice bulletin, “Ultrasound in Pregnancy,” and the Royal College of Obstetricians and Gynaecologists’ Working Party Report, “Ultrasound Screening” were reviewed. PubMed and the Cochrane Database were searched using the words “routine second trimester obstetrical ultrasound.”

Values: The evidence was evaluated using the guidelines developed by the Canadian Task Force on Preventive Health Care.

Benefits, Harms, and Costs: A routine complete second trimester ultrasound between 18 and 22 weeks and a complete ultrasound report will provide the best opportunity to diagnose fetal anomalies and to assist in the management of prenatal care. It will also reduce the number of ultrasound examinations done during the second trimester for completion of fetal anatomy survey. The costs are those involved with the performance of obstetrical ultrasound.

Validation: This is a revision of previous guidelines; information from other consensus reviews from medical publications has been used.


Recommendations
1. Pregnant women should be offered a routine second trimester ultrasound between 18 and 22 weeks’ gestation. (II-2B)
2. Second trimester ultrasound should screen for the number of fetuses, the gestational age, and the location of the placenta. (II-1A)
3. Second trimester ultrasound should screen for fetal anomalies. (II-2B)


SECOND TRIMESTER ULTRASOUND

A routine ultrasound scan performed between 18 and 22 weeks’ gestation provides the pregnant woman and her care provider with information about multiple aspects of her pregnancy.1–4 The obstetrical ultrasound will inform them of and/or confirm the number of fetuses present, the gestational age, and the location of the placenta. It will present an opportunity to diagnose congenital anomalies and/or to detect soft markers of aneuploidy and to identify maternal pelvic pathology.

The occurrence of twins undiagnosed at delivery is extremely rare when women have received a second trimester ultrasound, and the likelihood of postdates induction and intrauterine growth restriction significantly decreases.1 In the last two decades, the infant death rate from congenital...
### Table 1. Content of a Complete Obstetrical Ultrasound Report

<table>
<thead>
<tr>
<th>Category</th>
<th>Required Information</th>
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</table>
| Patient demographic information  | • Patient name, second patient identifier (birth date, hospital identifier, health insurance number)  
• Indication for consultation  
• Requesting physician/caregiver (preferably with contact information)  
• Starting date of last normal menstrual period (LNMP)  
• Examination date  
• Date of written report  
• Name of interpreting physician  
| Number of fetuses and indications of life | Presence of cardiac activity for each fetus  
If multiple gestation: chorionicity and amnionicity should be reported  
| Biometry                         | Should be reported all in millimetres or in centimetres along with equivalent estimated gestational age for:  
• Biparietal diameter  
• Head circumference  
• Abdominal circumference  
• Femur length  
Should be reported in millimetres if abnormal  
• Nuchal fold  
• Cisterna magna  
• Cerebellar diameter  
• Lateral ventricle width  
| Fetal anatomy                    | Should be reported as: normal OR abnormal (with details) OR not seen, with explanation  
Should be reported for:  
• Cranium  
• Cerebral ventricles, cavum septi pellucidi, the midline falx, the choroid plexus  
• Posterior fossa: cisterna magna, cerebellum  
• Face: orbits, lips  
• Spine  
• Chest  
• Cardiac four-chamber view  
• Cardiac outflow tracts  
• Heart axis  
• Cardiac situs  
• Stomach  
• Bowel  
• Kidneys  
• Bladder  
• Abdominal cord insertion  
• Number of cord vessels  
• Upper extremities and presence of hands  
• Lower extremities and presence of feet  
| Amniotic fluid amount Placenta  | Should be reported as: normal OR increased OR decreased OR absent  
| Maternal anatomy uterus, ovaries, cervix, bladder | • Position should be reported as well as relationship to the cervical os  
Should be reported as:  
• normal OR abnormal with details OR not seen  

The number of fetuses and the presence of cardiac activity should be recorded. If a multiple gestation is diagnosed, the chorioncity and amnionicity should be assessed and documented.

The fetal biometric measurements should include at least the following: biparietal diameter, head circumference, abdominal circumference, and femur length. Absolute biometric measurements with their estimated gestational age should be documented and reported. A composite estimated gestational age should also be reported, taking into consideration measurement errors arising from abnormal fetal body parts. Moreover, the gestational age/size should be interpreted in correlation with any previous obstetrical ultrasound if available. This will allow the care provider to confirm if fetal growth has been appropriate. Due date should not be adjusted if it has been established by an earlier ultrasound.

**Fetal Anatomy Survey to Be Performed During a Complete Obstetrical Routine Second Trimester Ultrasound**

The standard **fetal brain anatomical survey** should include an assessment and documentation of the following anatomical landmarks: the shape of the fetal skull, the cavum septi pellucidi, the midline falx, the choroid plexus, the lateral cerebral ventricles, the cerebellum, the cisterna magna, and the nuchal fold. The face should be scanned to assess and document the orbits and lips.

In the **thorax**, the heart and lungs should be examined. Examination of the fetal heart includes its relationship with the chest (axis, size, and position) as well as the assessment

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**Table 2. Key to evidence statements and grading of recommendations, using the ranking of the Canadian Task Force on Preventive Health Care**

<table>
<thead>
<tr>
<th>Quality of Evidence Assessment*</th>
<th>Classification of Recommendations†</th>
</tr>
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<tbody>
<tr>
<td>I: Evidence obtained from at least one properly randomized controlled trial</td>
<td>A. There is good evidence to recommend the clinical preventive action</td>
</tr>
<tr>
<td>II-1: Evidence from well-designed controlled trials without randomization</td>
<td>B. There is fair evidence to recommend the clinical preventive action</td>
</tr>
<tr>
<td>II-2: Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group</td>
<td>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</td>
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<td>II-3: Evidence obtained from comparisons 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 included in this category</td>
<td>D. There is fair evidence to recommend against the clinical preventive action</td>
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<tr>
<td>III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees</td>
<td>E. There is good evidence to recommend against the clinical preventive action</td>
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<tr>
<td></td>
<td>F. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making</td>
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</table>

*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.† Recommendations included in these guidelines have been adapted from the Classification of Recommendations criteria described in the The Canadian Task Force on Preventive Health Care.
of the four chamber view and the relationships of the out-
flow tracts. The fetal cardiac motion should be observed
and a fetal heart rate recorded. The lungs should be exam-
ined for their echogenicity.

In the fetal abdomen, the anatomical survey should
include the position, presence, and situs of the stomach,
and visualization of the bowel, bladder, kidneys, cord inser-
tion, and number of cord vessels.

The fetal spine should be viewed throughout its length in
sagittal, coronal, and transverse planes if possible. The skin
line should be seen away from the uterine wall. This cannot
always be documented with still images.

An attempt should be made to assess the fetal genitalia.

All four limbs to the level of the hands and feet should be
visualized, and the presence of hands and feet should be
noted. Subjective assessment of bone size, shape, and den-
sity should be done. This cannot always be documented
with still images.

The placenta should be examined for position, appear-
ance, and presence or absence of abnormalities. The placen-
tal location and its relationship to the internal cervical os
should be assessed and documented.

A qualitative assessment of the amniotic fluid volume
should be made. It should be reported as normal, increased,
decreased, or absent.

Table 1 shows the recommended content of the report, but
other information may be provided in such consultations.
The ultrasound report should include all ultrasound infor-
mation necessary for appropriate management of the preg-
nancy. It needs to include the date the scan was performed
and the composite gestational age based on fetal biometric
measurements. The number and size of fetuses and the
measurements obtained to determine them should be
noted. If a structure was not seen, this should be reported,
along with the reason it was not seen. If fetal or maternal
abnormalities are reported, a differential diagnosis and,
when appropriate, a recommendation for further investiga-
tion should be provided. The report should comment on
any significant technical difficulty of the examination. The
final report should be easy to read.

It is acknowledged that even in the best of hands and cir-
cumstances, the 18–22 week scan has limitations and can-
d not detect all fetal and maternal abnormalities.10

Any significant fetal or maternal abnormalities need to be
reported promptly to the caregiver. The communication
should be recorded in the patient’s file.

An ultrasound report summary should provide:

• Summary of findings
• Differential diagnosis if indicated
• Recommendations for further investigations and
  referral for tertiary centre assessment when necessary.

Recommendations

The evidence was evaluated using the guidelines developed
by the Canadian Task Force on Preventive Health Care
(Table 2).

1. Pregnant women should be offered a routine second
   trimester ultrasound between 18 and 22 weeks’ gestation. (II-2B)

2. Second trimester ultrasound should screen for the
   number of fetuses, the gestational age, and the location
   of the placenta. (II-1A)

3. Second trimester ultrasound should screen for fetal
   anomalies. (II-2B)

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