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**GUIDELINES**

## Practice guidelines for performance of the routine mid-trimester fetal ultrasound scan

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## Why ?

- The International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) is a scientific organization that encourages sound clinical practice, teaching and research for diagnostic imaging in women's healthcare.
- Practice Guidelines and Consensus are intended to reflect what is considered by ISUOG to be the best practices at the time at which they were issued.
- Although ISUOG has made every effort to ensure that guidelines are accurate when issued, neither the Society nor any of its employees or members accepts any liability for the consequences of any inaccurate or misleading data, opinions or statements issued by the CSC.
- Guidelines are not intended to establish a legal standard of care because interpretation of the evidence that underpins the guidelines may be influenced by individual circumstances and available resources.
- Approved guidelines can be distributed freely with the permission of ISUOG ([info@isuog.org](mailto:info@isuog.org)).



## What is the purpose of a mid-trimester fetal ultrasound scan?

- Provide accurate diagnostic information for the delivery of optimized antenatal care with the best possible outcomes for mother and fetus.
- The procedure is used to determine gestational age and to perform fetal measurements for the timely detection of are to detect congenital malformations and multiple pregnancies.
- Prenatal screening examination includes an evaluation of the following: cardiac activity; fetal number (and chorionicity if multiple pregnancy); fetal age/size; basic fetal anatomy; placental appearance and location.
- Although many malformations can be identified, it is acknowledged that some may be missed, even with sonographic equipment in the best of hands, or that they may develop later in pregnancy.
- Before starting the examination, a healthcare practitioner should counsel the woman/couple regarding the potential benefits and limitations of a routine mid-trimester fetal ultrasound scan.

## Who should perform the scan?

- In order to achieve optimal results from routine screening examinations, it is suggested that scans should be performed by individuals who fulfil the following criteria:
  - trained in the use of diagnostic ultrasonography and related safety issues;
  - regularly perform fetal ultrasound scans;
  - participate in continuing medical education activities;
  - have established appropriate referral patterns for suspicious or abnormal findings;
  - routinely undertake quality assurance and control measures.
- If the examination cannot be performed completely in accordance with adopted guidelines, the scan should be repeated, at least in part, at a later time, or the patient can be referred to another practitioner. This should be done as soon as possible, to minimize unnecessary patient anxiety and unnecessary delay in the potential diagnosis of congenital anomalies or growth disturbances.

## What equipment?

- For routine screening, equipment should have at least the following:
  - real time, gray-scale ultrasound capabilities;
  - transabdominal transducers (3–5-MHz range);
  - adjustable acoustic power output controls with output display standards;
  - freeze frame capabilities;
  - electronic calipers;
  - capacity to print/store images;
  - regular maintenance and servicing, important for optimal equipment performance.

## What document?

- An examination report should be produced as an electronic and/or a paper document, to be sent to the referring care provider in reasonable time. A sample reporting form is available at the end of this guidelines.
- Images of standard views (stored either electronically or as printed copies) should also be produced and stored. Motion videoclips are recommended for the fetal heart.
- Local laws should be followed. Many jurisdictions require image storage for a defined period of time.

	Produced	Printed	Stored
No. of images			

## Is prenatal ultrasonography safe?

- Prenatal ultrasonography appears to be safe for clinical practice.
- To date, there has been no independently confirmed study to suggest otherwise.
- Fetal exposure times should be minimized, using the lowest possible power output needed to obtain diagnostic information,
- following the ALARA principle (As Low As Reasonably Achievable).
- More details are available from the ISUOG Safety Statement.

	<b>Patient:</b>	<b>ID number:</b>
<b>isuog.org</b>	<b>Date of birth (DD/MM/YYYY):</b>	
	<b>Referring physician:</b>	
	<b>Date of exam (DD/MM/YYYY):</b>	
	<b>Sonographer / Supervisor:</b>	
<b>Indication for scan and relevant clinical information:</b>		
<b>Gestational age (W + D):</b>		
Based on: <i>LMP / Previous US / Other :</i>		
<b>Technical conditions: <i>Good / Limited by:</i></b>		
<b>Singleton / Multiple (use 1 sheet/fetus)</b>		
<b>=&gt; Chorionicity:</b>		
<b><u>PLACENTA:</u> Position:</b>		
Relation to cervical os:	<input type="checkbox"/> clear	<input type="checkbox"/> covering ____ mm from os
Appearance	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal*
<b><u>AMNIOTIC FLUID:</u></b>	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal*
<b><u>FETAL MOVEMENT:</u></b>	<input type="checkbox"/> Normal	<input type="checkbox"/> Abnormal*

## Well being?

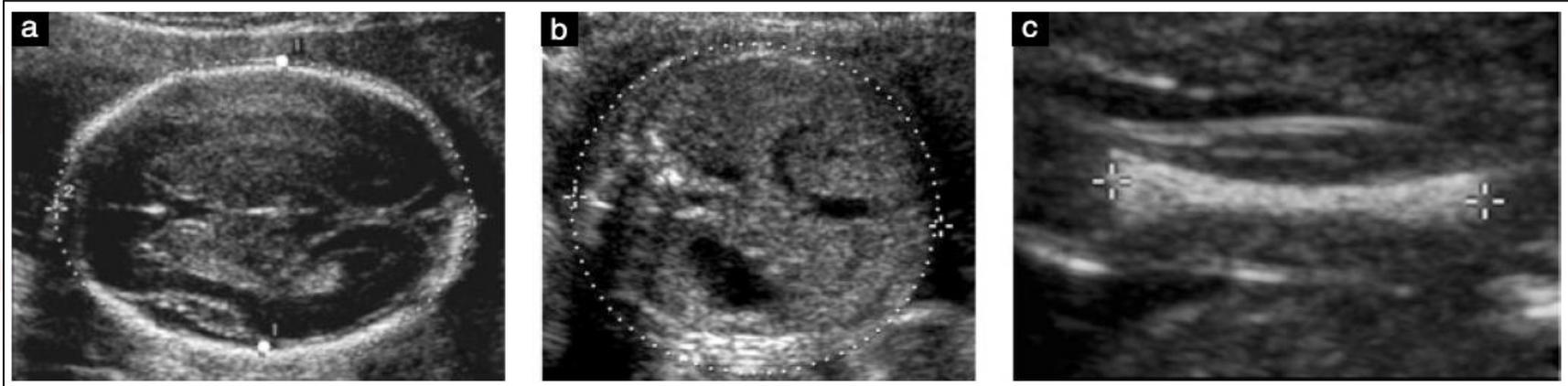
- Amniotic fluid assessment:
  - Amniotic fluid volume can be estimated subjectively or using sonographic measurements.
  - Subjective estimation is not inferior to the quantitative measurement techniques (e.g. deepest pocket, amniotic fluid index) when performed by experienced examiners.
- Fetal movement:
  - Normal fetuses typically have a relaxed position and show regular movements.
  - There are no specific movement and temporary absence or reduction of fetal movements during the scan should not be considered as a risk factor. Abnormal positioning or unusually restricted or persistently absent fetal movements may suggest abnormal fetal conditions such as arthrogryposis. The biophysical profile is not considered part of a routine mid-trimester scan.

## Fetal biometry?

- The following sonographic parameters can be used to estimate gestational age and for fetal size assessment:
  - biparietal diameter (BPD);
  - head circumference (HC);
  - abdominal circumference (AC) or diameter;
  - femur diaphysis length (FDL).
- Measurements should be performed in a standardized manner on the basis of strict quality criteria. An audit of results can help to ensure accuracy of techniques with regard to specific reference tables.
- The chosen reference standards should be indicated in the report
- An image(s) should be taken to document the measurement(s).
- The application of Doppler techniques is not currently recommended as part of the routine second-trimester ultrasound examination. There is insufficient evidence to support universal use of uterine or umbilical artery Doppler evaluation for the screening of low-risk pregnancies.

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MEASUREMENTS	mm	Percentile (References)
Biparietal diameter		
Head circumference		
Abdominal circumference		
Femur diaphysis length		
Other:		
Other:		
Other:		

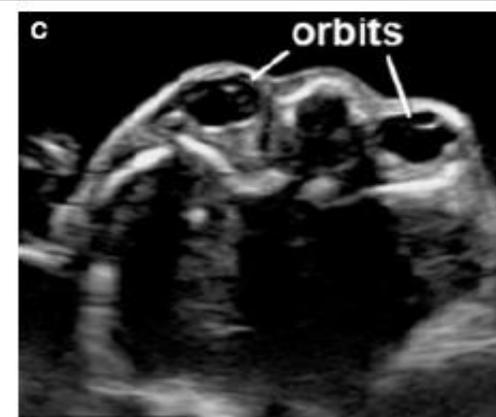
## Fetal anatomy?

- Recommended minimum requirements for a basic fetal anatomical survey during the mid-trimester of pregnancy are summarized in the report form
- Survey includes:
  - Head: skull, brain..
  - Face
  - Neck
  - Thorax: chest, heart.
  - Abdomen/urinary tract.
  - Skeletal
  - Limbs
  - Placenta, umbilical cord...

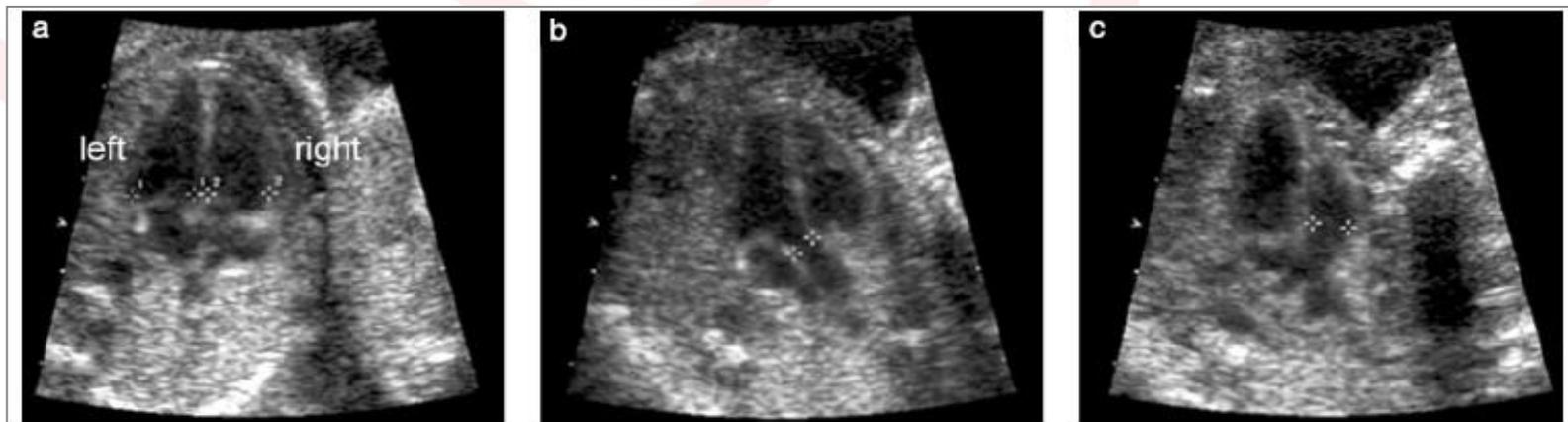
SONOGRAPHIC APPEARANCE OF FETAL ANATOMY: (N=Normal; Ab=Abnormal*; NV=Not visualized) Gray=optional	N	Ab*	NV
<b>Head</b>			
Shape			
Cavum septi pellucidi			
Midline falx			
Thalami			
Lateral ventricle			
Cerebellum			
Cisterna magna			

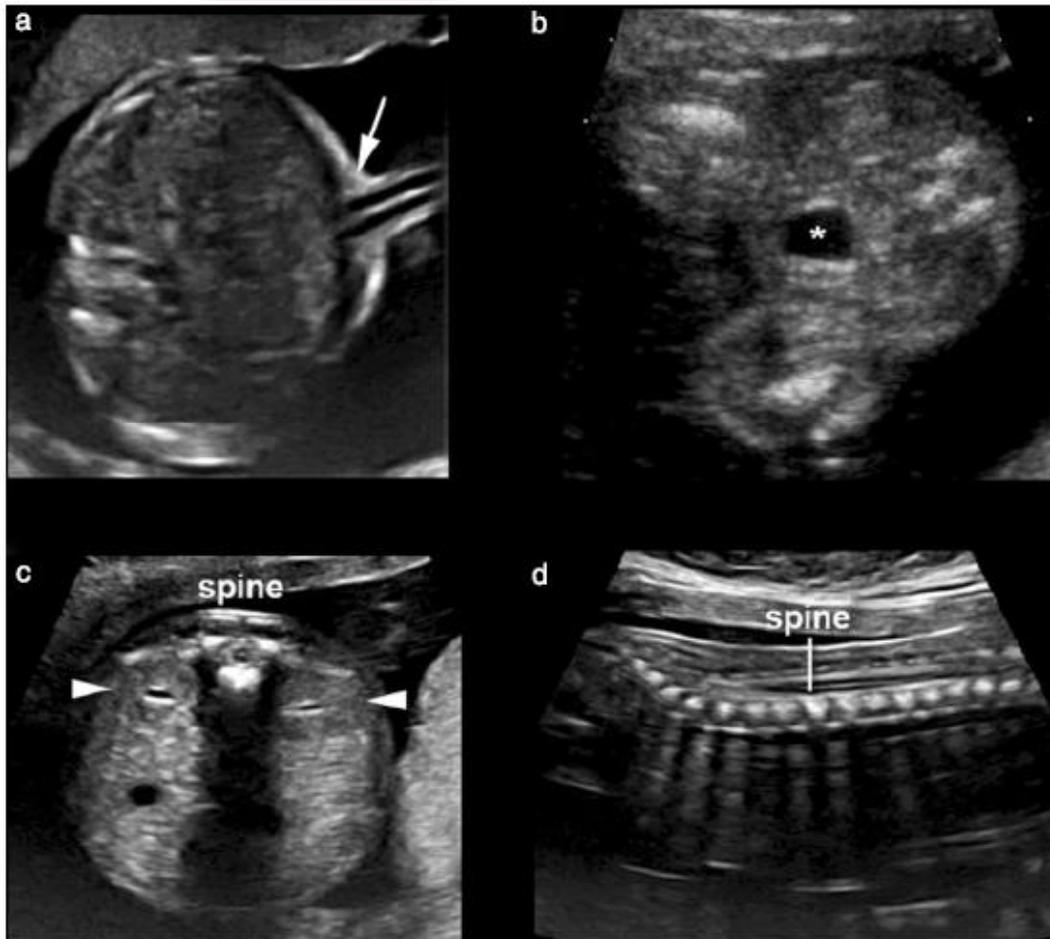


SONOGRAPHIC APPEARANCE OF FETAL ANATOMY: (N=Normal; Ab=Abnormal*; NV=Not visualized) Gray=optional	N	Ab*	NV
<b>Face</b>			
Upper lip			
Median profile			
Orbits			
Nose			
Nostrils			
<b>Neck</b>			



SONOGRAPHIC APPEARANCE OF FETAL ANATOMY: (N=Normal; Ab=Abnormal*; NV=Not visualized) Gray=optional	N	Ab*	NV
<b>Thorax</b>			
Shape			
No masses			
<b>Heart</b>			
Heart activity			
Size			
Cardiac axis			
Four-chamber view			
Left ventricular outflow			
Right ventricular outflow			



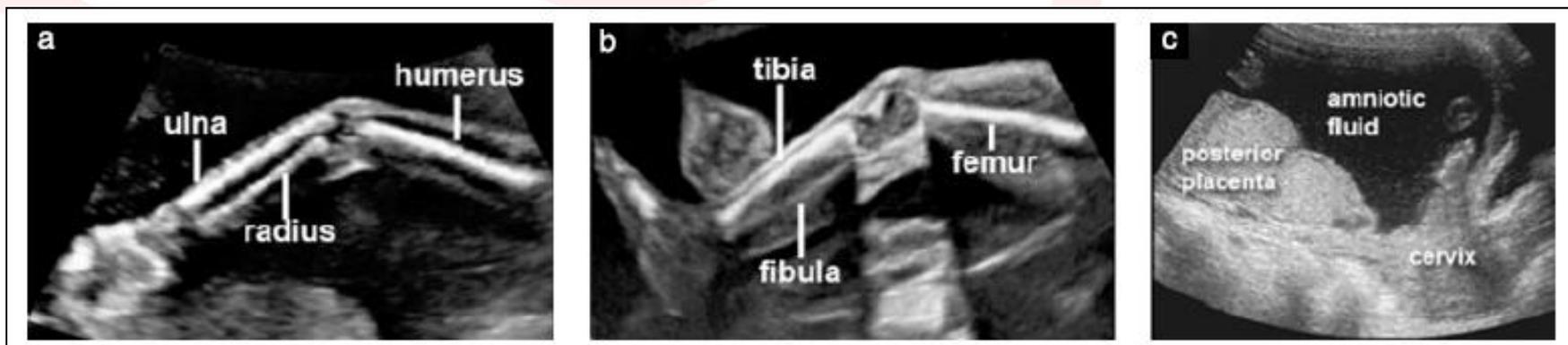


SONOGRAPHIC APPEARANCE OF FETAL ANATOMY: (N=Normal; Ab=Abnormal*; NV=Not visualized) Gray=optional	N	Ab*	NV
<b>Abdomen</b>			
Stomach			
Bowel			
Kidneys			
Urinary bladder			
Abdominal cord insertion			
Cord vessels (optional)			
<b>Spine</b>			

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SONOGRAPHIC APPEARANCE OF FETAL ANATOMY: (N=Normal; Ab=Abnormal*; NV=Not visualized) Gray=optional	N	Ab*	NV
<b>Limbs</b>			
Right arm (incl. hand)			
Right leg (incl. foot)			
Left arm (incl. hand)			
Left leg (incl. foot)			
<b>Gender (optional):</b> <input type="checkbox"/> M <input type="checkbox"/> F			
<b>Other :</b>			



## Cervix, uterine and adnexa?

- Several studies have demonstrated a strong correlation between short cervical length on transvaginal scan and subsequent preterm birth. However, several randomized controlled trials that examined the combination of routine cervical length measurement and subsequent interventions (cerclage, progesterone) failed to demonstrate conclusively any cost-effectiveness of such screening programs.
- Currently, there is insufficient evidence to recommend routine cervical length measurements at the mid trimester in an unselected population.
- Uterine fibroids and adnexal masses should be documented if they are likely to interfere with labor.

\*Abnormal findings (please detail):

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**CONCLUSION:**

- Normal and complete examination.
  - Normal but incomplete examination.
  - Abnormal examination\*
  - Plans:
    - No further ultrasound scans required.
    - Follow up planned in ..... weeks.
    - Referred to .....
    - Other:
-



**ISUOG's website is a great resource for more information:**  
[www.isuog.org](http://www.isuog.org)



The screenshot shows the ISUOG website homepage. At the top, there is a navigation bar with links for Home, About us, Contact us, International, and a Quick search box with a 'find it' button. The ISUOG logo and name are prominently displayed. Below the logo is a horizontal menu with categories: Membership, Journal, World Congress, Future Meetings & Courses, Education & Training, and Clinical Resources. The main content area features a welcome message: 'Welcome to ISUOG: The Society of Women's Imaging'. The text describes ISUOG as a charity and membership association with over 5,000 members in more than 100 countries. It lists member benefits such as access to the Journal, reduced fees for Courses and Congress, free online educational material through Web Lectures and ISUOG OnDemand, and the Outreach Program. To the right of the text is a color Doppler ultrasound image of a fetus. Below the main content are three columns: 'Join ISUOG' with a list of membership categories (Full, Online, Core) and a 'find out more' button; 'ISUOG News' with a 'CLICK HERE TO BECOME A MEMBER' button and a notice about renewing membership before 31 December, along with a link to a keynote lecture on evaluating ovarian masses; and 'Register with us' with a 'find out more' button.

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**Existing members: your website access will be suspended if unpaid on 31 December.**

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**Evaluating ovarian masses: Keynote Lecture**

#### Register with us

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**find out more**