

The Fetal Anatomy Ultrasound National Clinical Practice Guideline



BMUS 

THE BRITISH MEDICAL ULTRASOUND SOCIETY

UCD Radiography & Diagnostic Imaging
UCD School of Medicine



Learning Objectives

- Review the justification and the importance for the guidelines
- Development and overview
- Key recommendations
- Newer recommendations
- Implementation strategies
- Benefits and challenges
- Conclusions and Q&A

Importance of the Guideline

- No recognised screening programme.
- Health Act (Regulation of Termination of Pregnancy) 2018.
- Equitable access to fetal anatomy ultrasound.
- Many benefits of offering ultrasound in the mid-trimester, fetal anomalies, placenta previa, multiple pregnancy and abnormal growth patterns.

Who should have one: Everyone



- All pregnant women in Ireland should be offered a fetal anatomy ultrasound examination as part of standard antenatal care.
- Consistency of care

Fetal Anatomy Guidelines 2023



ACOG
The American College of
Obstetricians and Gynecologists



NICE National Institute for
Health and Care Excellence



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Common themes and differences

Similarities

- Optimally performed at 18- 22 weeks.
- All had biometry
- Amniotic fluid assessment

Differences

- Degrees of differences in the anatomy checklist
- Screening for VP
- Who signs off
- Labelling

Design of the new Guidelines

Developed to be used in 3 ways:

- National standard
- As a reference document
- A training document

Development



Trusted evidence.
Informed decisions.
Better health.

[Our evidence](#)

[About us](#)

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Google Scholar



ELSEVIER

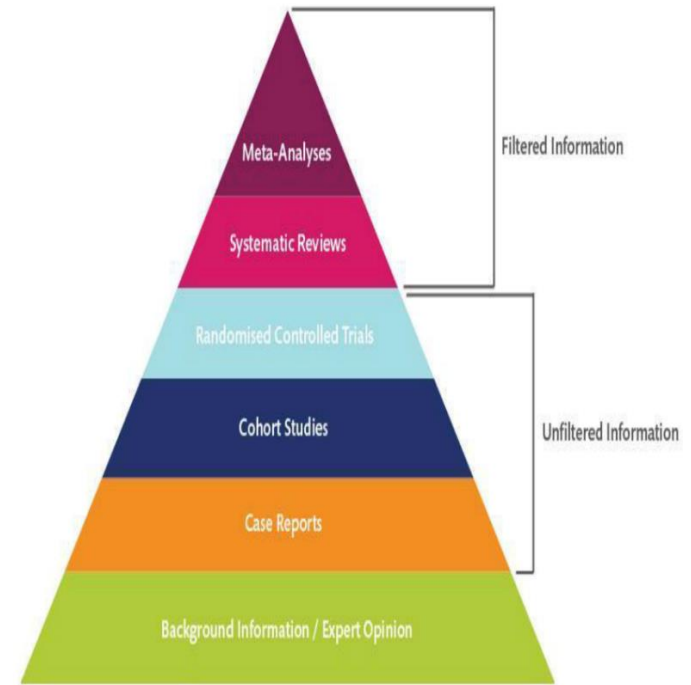


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Evidence-Based Information Pyramid



Increasing
Evidence
Strength



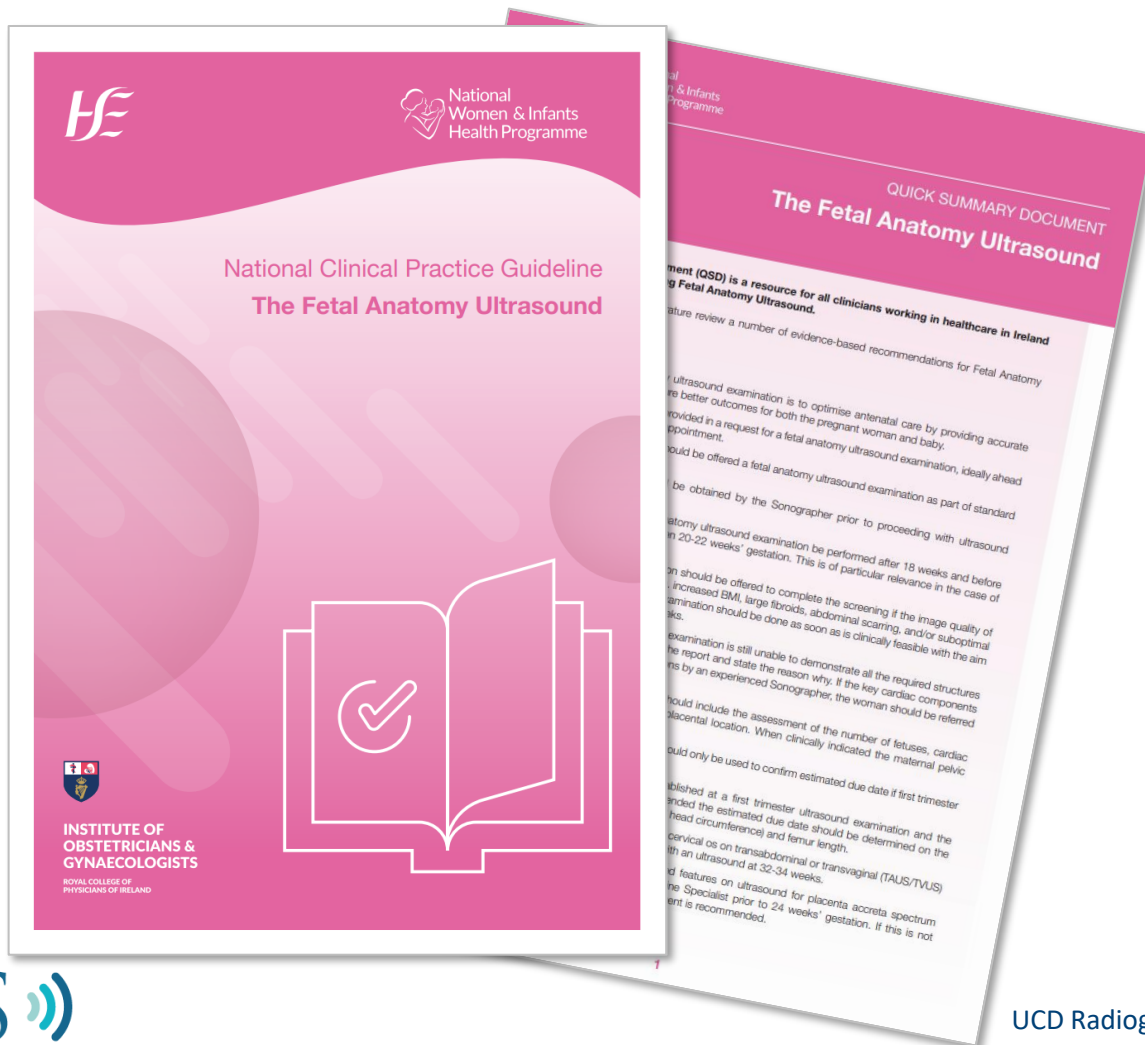
Development



- Input from Fetal medicine specialists and Fetal cardiologist
- 1st draft- 12 sonographers from large and small units across Ireland
- Stakeholders- including patient advocacy
- Expert advisory group

Final Document

National Guidelines



Targeted audience

Class of 2022/ 2023



Aim of the Guideline

Number	Recommendation	Grade
1	The aim of the fetal anatomy ultrasound examination is to optimise antenatal care by providing accurate diagnostic information to ensure better outcomes for both the pregnant woman and baby.	<i>Best practice</i>

Fetal Anatomy Examination

- Although many malformations can be identified, it is acknowledged that some abnormalities will not be detected even in the best of hands, or they may develop later in pregnancy.
- 30 minutes time slot allocated for a singleton pregnancy



Now the core stuff

- Fetal biometry
- Amniotic fluid assessment
- Anatomical survey
- Placental assessment
- Multiple pregnancy



Key recommendations

- 40 key recommendations - available in quick summary document
- 25 required images and 10 optional images
- Specific clinical situations for example:
 - cervical length, uterine artery Doppler, placenta accreta and high risk pregnancies for vasa previa

Appendix 9: Image Requirements

pg. 88-90 National Clinical Practice Guideline

Appendix 9: Minimum (and *optional) image requirements for Fetal Anatomy Ultrasound

Clips/sweeps is the preferred method for the cardiac examination to be archived.

Structure/Area	Detail	Fetal Measurements	Images/measurements to capture/archive
Head and neck <ul style="list-style-type: none"> • Skull • Brain • Neck 	Head shape	Biparietal Diameter Head circumference	Yes. Transthalamic view
	Cavum septum (CSP)	Measurement not required	
	Lateral ventricle (Vp)	Measurement of the Vp at the glomus	Yes
	Cerebellum	Transcerebellar diameter	Yes [+ measurement of TCD]
	Nuchal Fold	Distance between the outer border of the occipital bone and the outer skin edge.	Yes (included in TCD image)
Facial features	Both orbits and bulbi present*	Measurement not required	Image optional
	Coronal view of lips and nose	Measurement of nasal bone not required	Yes
	Mid sagittal* facial profile		Image optional

Appendix 14: Referral Criteria

Appendix 14, pg. 106 National Clinical Practice Guideline

Appendix 14: Referral criteria for Fetal Echocardiography following a fetal anatomy ultrasound

The majority of cases of CHD occur in the low risk population¹⁵⁷. However, it is also known that there are risk factors associated with CHD and the following criteria are accepted as referral criteria for those patients at a higher risk of fetal CHD. These criteria also adhere to the British Congenital Cardiac Association (2021) guidance¹⁵⁸.

Maternal Indications

1. Maternal congenital heart disease (CHD) or congenital complete heart block (CHB)
 - A. NB Only lesions where surgery or interventional procedures required
 - B. NB Not PDA, ASD
2. Maternal metabolic disorders, if poor control in early pregnancy
 - A. diabetes mellitus
 - B. phenylketonuria
3. Maternal exposure to known cardiac teratogens:
 - A. anticonvulsant, retinoic acid, lithium
 - B. viral infection (rubella, CMV, coxsackie, parvovirus) and toxoplasma
4. Maternal collagen disease with anti Ro/SSA and/or and La/SSB

Familial Indications

1. Paternal CHD/Previous child or fetus with CHD/CHB
 - A. First degree relatives to this fetus
 - B. NB Only lesions where surgery or interventional procedures required
 - C. NB Not PDA, ASD
2. Family history of genetic disorders/Chromosomal anomalies/ syndromes associated with CHD or cardiomyopathy

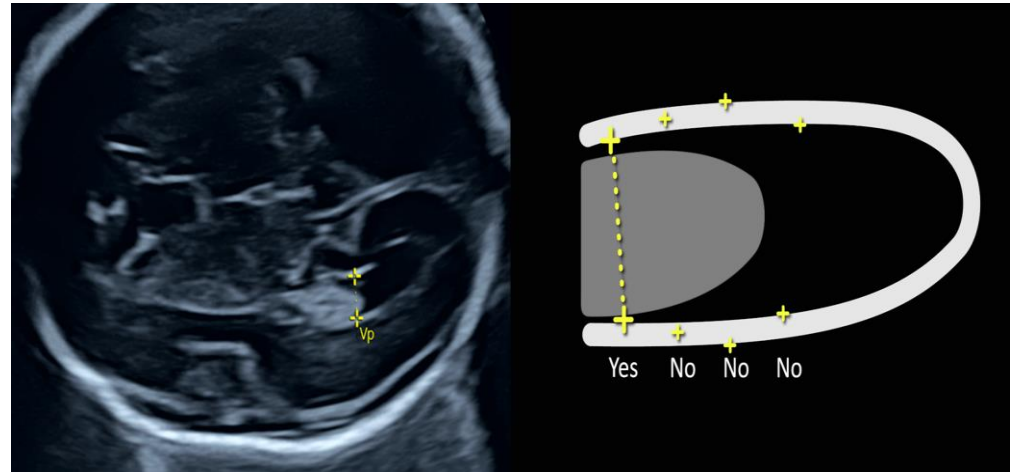
Some important points

ISUOG. Ultrasound Obstet Gynecol September 2020, March 2021



How do we measure
the ventricles?

5A's



Ultrasound Obstet Gynecol 2020; 56: 476–484
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.22145

ISUOG Practice Guidelines (updated): sonographic examination of the fetal central nervous system. Part 1: performance of screening examination and indications for targeted neurosonography

Some important points

ISUOG. Ultrasound Obstet Gynecol 2013; 41: 348–359

Cardiac examination:

- Situs- we all do
- 4 chamber- we all do
- Extended views 3 vessel view or 3 vessel trachea view – we all do
- Colour flow – new for some
- Video clips- new for some

Ultrasound Obstet Gynecol 2013; 41: 348–359
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/uog.12403



GUIDELINES

ISUOG Practice Guidelines (updated): sonographic screening examination of the fetal heart

Other important points

- Dates not to be changes if it was established by ultrasound prior to **14 weeks** and **CRL of 10 mms** or greater.
- Hadlock charts - measurements reported in millimeters.
- Renal pelvic diameter \leq **7mms** in the AP diameter.
- Placental edge **2cms** distance from cervix

Communication

- It is appropriate for appropriately **experienced Sonographers** who perform fetal anatomy ultrasound examinations to **impart information** when they are **confident** of the diagnosis.
- Fetal Anomaly - referral within 5 working days.
- Major Fetal Anomaly - ideally within 3 days.

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Consent

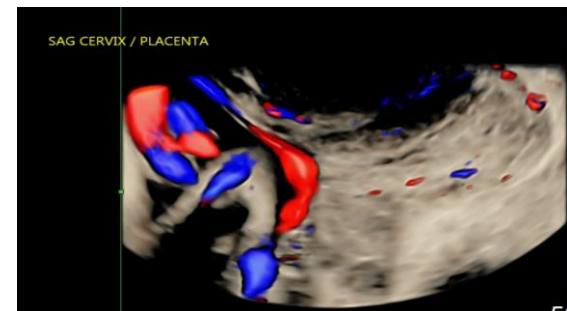
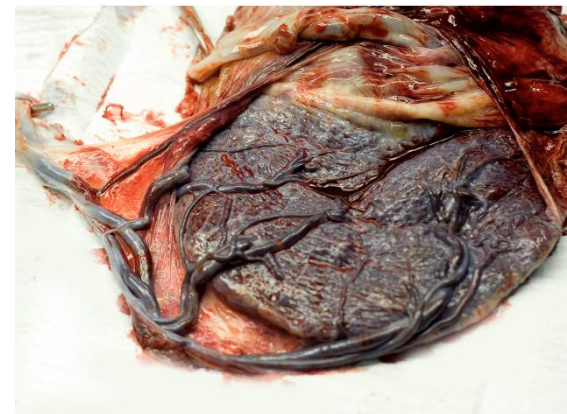
- Essential component of any medical investigation
- Written information well before US
- Benefits and limitations
- Opportunity to ask questions
- Medicolegal environment in Ireland
- If it's not written.....
- Not 100% protective



Vasa Previa

- Unprotected fetal vessels amniotic membrane traverse the cervix
- 1/2500
- If diagnosed 97% survival, if not 44% survival
- Detection rate 93%, specificity 99%

- **80%** have risk factors.



Vasa Previa

Risk Factors for Vasa Previa



- Succenturiate or bilobed placenta
- Low-lying placenta (60% will have)
- IVF 1/250
- Multiple pregnancies
- Velamentous cord insertion

Recent Literature

Ultrasound Obstet Gynecol 2023; **61**: 7–11
Published online in Wiley Online Library (wileyonlinelibrary.com).

Opinion

**The case for screening for vasa previa:
time to implement a life-saving strategy**

Y. OYELESE^{1*} , C. C. LEES^{2,3} and
E. JAUNIAUX⁴ 

Editorial

Vasa previa: time to make a difference

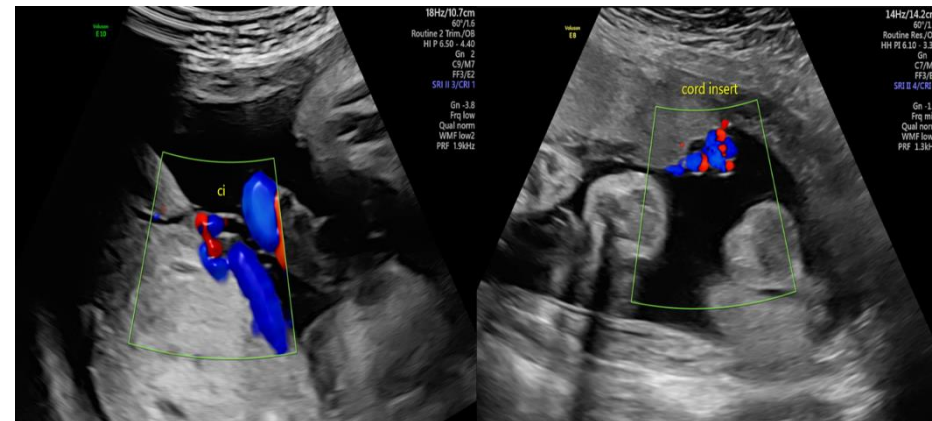
Yinka Oyelese, MD

Placental cord insertion

Marginal - adverse outcome due to reduced blood flow to all parts of the placenta – IUGR/early delivery/NICU

- Relatively quick and easy
- Rules out vasa previa
- What is marginal? 1cm, 2cms? Not well established

- Best practice, not grade A evidence



Soft markers



SMFM Consult Series

smfm.org

Society for Maternal-Fetal Medicine Consult Series #57: Evaluation and management of isolated soft ultrasound markers for aneuploidy in the second trimester



(Replaces Consults #10, Single umbilical artery, October 2010; #16, Isolated echogenic bowel diagnosed on second-trimester ultrasound, August 2011; #17, Evaluation and management of isolated renal pelviectasis on second-trimester ultrasound, December 2011; #25, Isolated fetal choroid plexus cysts, April 2013; #27, Isolated echogenic intracardiac focus, August 2013)

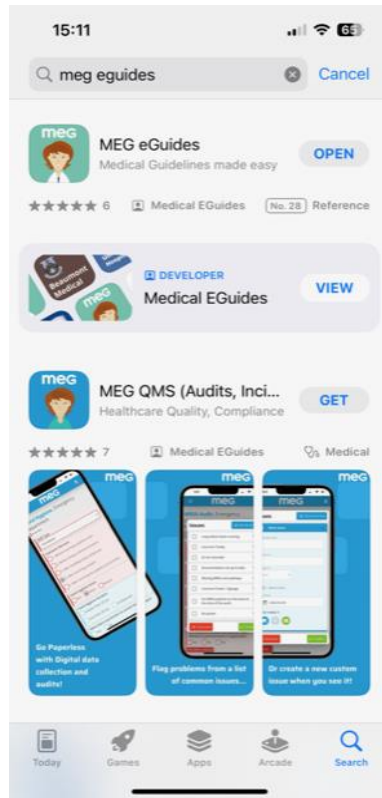
Society for Maternal-Fetal Medicine (SMFM); Malavika Prabhu, MD; Jeffrey A. Kuller, MD; and Joseph R. Biggio, MD, MS

Communication and Dissemination

- Sent to all CEOs of 19 hospitals – December 2022
- Senior management and senior clinicians responsible for implementing recommendations
- Existing service, identify barriers (facilities, equipment, knowledge, skill, time)
- Education and training
- Identifying necessary resources required

Communication and Implementation

MEG e Guides



Dissemination



- Clinical Guidelines mobile application- MEG
- Availability of Quick Summary Document for clinical staff

Monitoring/Audit/Evaluation

- Process for monitoring continuous improvement
- Audit criteria (12 suggested)
- Process for evaluation of implementation and clinical effectiveness
- NWIHP involvement
- Guideline/Practice facilitators?
- Eventual revision and updating

Benefits

- Consistency and equity of care
- Compliance with best practice
- Early Informed decision making
- Improved patient experience and outcomes

Have we set the bar too high?

Yes we have set it high.

However...

Coordinated approach involving healthcare providers to ensure successful implementation and adherence to fetal anatomy guidelines.

Sonographers- Thank you!!



Questions



Contact us:

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