The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

Mid-trimester fetal morphology ultrasound screening

This statement has been developed and reviewed by the Women's Health Committee and approved by the RANZCOG Board and Council.

A list of Women's Health Committee Members can be found in Appendix A.

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

Disclaimer This information is intended to provide general advice to practitioners. This information should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The document has been prepared having regard to general circumstances.

First endorsed by RANZCOG: March 2014
Current: March 2014
Review due: March 2017

Values: The evidence was reviewed by the Women's Health Committee (RANZCOG), and applied to local factors relating to Australia and New Zealand.

Background: This statement was first developed by Women's Health Committee in March 2014 and is due to be reviewed in March 2017.

Funding: The development and review of this statement was funded by RANZCOG.

The mid-trimester 'morphology' ultrasound examination is widely-used in contemporary obstetric practice, providing information about fetal anatomy and growth, multiple gestation, placental position, cervical dimensions, and other information. Findings from this screening investigation provide diagnostic information that may facilitate the management of problems that arise in later pregnancy.[1] As an example, abnormalities in fetal growth are a leading cause of perinatal mortality and morbidity around the world, and the mid-trimester ultrasound provides an important baseline for subsequent ultrasound examination to allow comparison.[1-3] Screening mid-trimester ultrasound also provides information useful in detecting congenital anatomical and other anomalies.[4-7] Large multi-centre studies have examined the accuracy of screening mid-trimester ultrasound and concluded that over half of major malformations and anomalies were detected before 24 weeks with this approach.[8]

In light of this information, the principal objective of screening mid-trimester ultrasound should be to provide diagnostic information that is as accurate as possible, with a view to optimising antenatal care and providing the best possible outcomes of pregnancy.[1] Although many fetal malformations are identifiable antenatally, there is the potential for many to remain undiagnosed, or for conditions to develop or become detectable subsequent to the screening examination. This applies with even the most highly-trained practitioners using the best equipment.

An important component of the provision of screening mid-trimester ultrasound is thus the availability of suitably-qualified and credentialed ultrasound practitioners and ultrasound equipment.[1] A study group of the WHO[9] concluded that, "worldwide, it is likely that much of the ultrasonography currently performed is carried out by individuals with in fact little or no formal training".

RANZCOG recommends that all practitioners involved in provision of mid-trimester fetal morphology ultrasound screening must undergo appropriate specific training in this critical and specialised area of practice. Service providers must participate in ongoing professional development, clinical audit, and multidisciplinary review of outcomes specific to their performance of mid-trimester fetal morphology ultrasound screening.

Recommendation	Grade
RANZCOG recommends that all practitioners involved in provision of mid-trimester fetal morphology ultrasound screening must undergo appropriate specific training in this critical and specialised area of practice.	Consensus-based

References

1. Salomon L, Alfirevic Z, Berghella V, et al. Practice guidelines for performance of the routine mid-trimester fetal ultrasound scan. Ultrasound Obstet Gynecol 2010;

2. World Health Organization. Report on the Regional Consultation Towards the Development of a Strategy for Optimizing Fetal Growth and Development. WHO Regional Office for the Eastern Mediterranean: Cairo, 2005.

3. Barker DJ, Gluckman PD, Godfrey KM, et al. Fetal nutrition and cardiovascular disease in adult life. Lancet 1993; 341: 938–91.

4. Schwarzler P, Senat MV, Holden D, et al. Feasibility of the second-trimester fetal ultrasound examination in an unselected population at 18, 20 or 22 weeks of pregnancy: a randomized trial. Ultrasound Obstet Gynecol 1999; 14: 92–97.

5. Saltvedt S, Almstrom H, Kublickas M, et al. Detection of malformations in chromosomally normal foetuses by routine ultrasound at 12 or 18 weeks of gestation – a randomised controlled trial in 39,572 pregnancies. BJOG 2006; 113: 664–674.

6. Tegnander E, Williams W, Johansen OJ, et al. Prenatal detection of heart defects in a non-selected population of 30149 fetuses – detection rates and outcome. Ultrasound Obstet Gynecol 2006; 27: 252–265.

7. Goldberg JD. Routine screening for fetal anomalies: expectations. Obstet Gynecol Clin North Am 2004; 31: 35–50.

8. Grandjean H, Larroque D, Levi S. The performance of routine ultrasonographic screening of pregnancies in the Eurofetus Study. Am J Obstet Gynecol 1999; 181: 446–454.

9. World Health Organization. Training in Diagnostic Ultrasound: Essentials, Practice, and Standards. (WHO Technical Report Series, No. 875). WHO: Geneva, 1998.

10. Van der Wal S, Robson S, Choong S. Is bedside ultrasound now a routine part of specialist obstetrics and gynaecology outpatient consultation? AJUM 2013; 16: 190-92.

Links to other College statements

Measurement of cervical length for prediction of preterm birth (C-Obs 27).

Patient information

A range of RANZCOG Patient Information Pamphlets can be ordered via:

https://www.ranzcog.edu.au/Womens-Health/Patient-Information-Guides/Patient-Information-Pamphlets

Appendices

Appendix A Women's Health Committee Membership

Name	Position on Committee
Associate Professor Stephen Robson	Chair
Professor Susan Walker	Deputy Chair - Obstetrics
Dr Gino Pecoraro	Deputy Chair - Gynaecology
Professor Yee Leung	Member
Associate Professor Anuschirawan Yazdani	Member
Dr Simon Craig	Member
Associate Professor Paul Duggan	Member
Dr Vijay Roach	Member
Dr Stephen Lyons	Member
Dr Ian Page	Member
Dr Donald Clark	Member
Dr Amber Moore	Member
Dr Martin Ritossa	Member
Dr Benjamin Bopp	Member
Dr James Harvey	Member
Dr John Tait	Member
Dr Anthony Frumar	Member
Associate Professor Kirsten Black	Member
Dr Jacqueline Boyle	Chair of IWHC
Dr Louise Sterling	GPOAC representative
Ms Catherine Whitby	Council Consumer representative
Ms Susan Hughes	Consumer representative
Ms Sherryn Elworthy	Midwifery representative
Dr Scott White	Trainee representative
Dr Agnes Wilson	RANZCOG Guideline developer

Appendix B Overview of the development and review process for this statement

i. Steps in developing and updating this statement

This statement was originally developed in March 2014 and is due to be reviewed in March 2017. The Women's Health Committee carried out the following steps in reviewing this statement:

- Declarations of interest were sought from all members prior to reviewing this statement.
- Structured clinical questions were developed and agreed upon.
- An updated literature search to answer the clinical questions was undertaken.
- At the March 2014 face-to-face committee meeting, the existing consensus-based recommendations were reviewed and updated (where appropriate) based on the available body of evidence and clinical expertise. Recommendations were graded as set out below in Appendix B part iii)

ii. Declaration of interest process and management

Declaring interests is essential in order to prevent any potential conflict between the private interests of members, and their duties as part of the Women's Health Committee.

A declaration of interest form specific to guidelines and statements was developed by RANZCOG and approved by the RANZCOG Board in September 2012. The Women's Health Committee members were required to declare their relevant interests in writing on this form prior to participating in the review of this statement.

Members were required to update their information as soon as they become aware of any changes to their interests and there was also a standing agenda item at each meeting where declarations of interest were called for and recorded as part of the meeting minutes.

There were no significant real or perceived conflicts of interest that required management during the process of updating this statement.

iii. Grading of recommendations

Each recommendation in this College statement is given an overall grade as per the table below, based on the National Health and Medical Research Council (NHMRC) Levels of Evidence and Grades of Recommendations for Developers of Guidelines.[17] Where no robust evidence was available but there was sufficient consensus within the Women's Health Committee, consensus-based recommendations were developed or existing ones updated and are identifiable as such. Consensus-based recommendations were agreed to by the entire committee. Good Practice Notes are highlighted throughout and provide practical guidance to facilitate implementation. These were also developed through consensus of the entire committee.

Recommendation category		Description
Evidence-based	A	Body of evidence can be trusted to guide practice
	B	Body of evidence can be trusted to guide practice in most situations
	C	Body of evidence provides some support for recommendation(s) but care should be taken in its application
	D	The body of evidence is weak and the recommendation must be applied with caution
Consensus-based		Recommendation based on clinical opinion and expertise as insufficient evidence available
Good Practice Note		Practical advice and information based on clinical opinion and expertise

Appendix C Full Disclaimer

This information is intended to provide general advice to practitioners, and should not be relied on as a substitute for proper assessment with respect to the particular circumstances of each case and the needs of any patient.

This information has been prepared having regard to general circumstances. It is the responsibility of each practitioner to have regard to the particular circumstances of each case. Clinical management should be responsive to the needs of the individual patient and the particular circumstances of each case.

This information has been prepared having regard to the information available at the time of its preparation, and each practitioner should have regard to relevant information, research or material which may have been published or become available subsequently.

Whilst the College endeavours to ensure that information is accurate and current at the time of preparation, it takes no responsibility for matters arising from changed circumstances or information or material that may have become subsequently available.