

ASA Position Statement: Obstetric medical diagnostic imaging and the non-medical use of ultrasound

10 January 2020

Key points

- Diagnostic ultrasound is an important medical service with the sonographer integral to the diagnostic results. In obstetric ultrasound, the sonographer provides detailed information for the assessment and management of fetal and maternal health.
- Patient-centred care models and community pressures have changed perceptions and expectations of obstetric ultrasound scans.
- Non-medical use of ultrasound in pregnancy places the fetus at potential risk of excessive exposure to ultrasound.
- Workplaces should develop policies to support sonographers in the communication of the appropriate use of diagnostic ultrasound in obstetric imaging.
- The ASA supports the World Federation for Ultrasound in Medicine and Biology (WFUMB) recommendations on the non-medical use of ultrasound in pregnancy.

Background and context

During ultrasound imaging, sonographers use medical knowledge and technical skills to obtain and selectively record sonographic images. These images provide anatomical and physiological information that forms the basis of clinical diagnosis.¹

Within obstetrics, ultrasound screening is a routine part of antenatal care. It offers benefits in providing diagnostic information so that fetal and maternal health may be better assessed and managed², such as screening for Down syndrome and major structural abnormalities during the 1st trimester, and severe fetal anomalies during the 2nd trimester.³

Diagnostic ultrasound contributes to expectant parents and families having a positive pregnancy experience⁴. The obstetric ultrasound examination experience has changed individual and community perceptions, and these are being projected onto the medical obstetric scan. Such perceptions and expectations are not assumed from other routine medical ultrasound services. These expectations include the availability of 3-dimensional imaging, gender determination, souvenir pictures, or adding extra family or friends to the examination room. Recent media highlights the extent of these expectations.⁵

Obstetric ultrasound imaging is considered a safe diagnostic service when performed at appropriate times on referral during pregnancy, and when provided by a highly skilled medical imaging specialist, such as a sonographer⁶. However, there are commercial businesses in Australia and New Zealand that provide non-medical obstetric ultrasound or 'entertainment scanning' to expectant mothers, including souvenir images. When ultrasound is used in a non-medical setting, without appropriate skill or training, there is a potential risk to a mother and her fetus.⁷

ASA recommendations

- The diagnostic aim of medical ultrasound in obstetric care and the role of the sonographer should be communicated to expectant parents.
- A diagnostic obstetric ultrasound is a complex, highly detailed examination for both the expectant mother and the fetus. Whilst modern technology provides detail that is surprising to the expectant family, it is important that their expectations do not exceed the limitations that the scan is providing. Highly trained sonographers can meet the expectations of both diagnostic criteria, as well as manage patient concern and apprehension. This is achieved in the guise of a diagnostic medical ultrasound. Social scanning does not meet the ALARA (As Low As Reasonably Achievable) principle that is the guiding principle of diagnostic ultrasound scanning OR the guiding principles of an accredited medical imaging centre.
- Workplaces incorporate into their practice guidelines policies that support sonographers in responding to 'social scanning' requests from patients and families of patients.
- The ASA supports the WFUMB *Recommendations on Non-medical Use of Ultrasound* and strongly recommends they be applied in sonography practice in Australia and New Zealand.

WFUMB Recommendations on Non-medical Use of Ultrasound⁸

- The WFUMB disapproves of the use of ultrasound for the sole purpose of providing keepsake or souvenir images of the fetus.
- Ultrasound imaging for non-medical reasons is not recommended unless carried out for education, training or demonstration purposes.
- In the absence of supporting evidence of safety, caution should be used to minimise ultrasound exposure to the fetus.
- The use of ultrasound to provide keepsake images or videos of the fetus may be acceptable if it is undertaken as part of a clinical diagnostic ultrasound examination, provided that it does not increase exposure to the fetus.
- The use of ultrasound without medical indication to determine the fetal gender is inappropriate and contrary to responsible medical practice.
- Live scanning of pregnant models for equipment exhibitions at ultrasound congresses is considered a non-medical practice that should be prohibited, since it provides no medical benefit, and risks to the embryo or fetus cannot be excluded.
- Ultrasonography is a medical procedure that should only be carried out in the clinical setting where there is a medical indication and when carried out under the supervision of a physician or an appropriately trained expert in diagnostic ultrasound.
- When using ultrasound for non-medical reasons, the ultrasound equipment display should be used to ensure thermal index (TI) < 0.7 and mechanical index (MI) < 0.3.

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3. WHO fact sheet. *Congenital anomalies*. World Health Organisation. September 2016. Available: <http://www.who.int/mediacentre/factsheets/fs370/en/>. Accessed 17 August 2017.
4. *WHO recommendations on antenatal care for a positive pregnancy experience*. World Health Organisation, 2016. Available: <http://www.who.int/nutrition/publications/guidelines/antenatalcare-pregnancy-positive-experience/en/>
5. <https://babygizmo.com/ultrasounds-family-affair-hospital-planning-take-experience-away/amp/>
6. Nelson TR, Fowlkes JB, Abramowicz JS, Church CC. *Ultrasound biosafety considerations for the practicing sonographer and sonologist*. Journal of ultrasound in medicine. 2009 Feb;28(2):139-50.
7. Buscarini E, Lutz H & Mirk P. *Manual of Diagnostic Ultrasound Second Edition*. World Health Organisation. 2013. Available: http://www.who.int/medical_devices/publications/manual_ultrasound_pack1-2/en/
8. WFUMB Administrative Council. *Safety Statements WFUMB Recommendations on Non-medical Use of Ultrasound*. World Federation for Ultrasound in Medicine and Biology USA. 2 February 2013. Available: <http://www.wfumb.org/safety-statements/>. Accessed 26 June 2017.