



Pregnancy Ultrasound and Its Role in Maternal and Fetal Health Assessment

Sophia Bennett*

Department of Child Health, Faculty of Medicine, University of Auckland, Auckland, New Zealand

DESCRIPTION

Pregnancy ultrasound is a widely used imaging technique in maternal healthcare that provides valuable information about fetal growth, development, and pregnancy progression. It uses high-frequency sound waves to create images of the developing foetus and surrounding structures without exposing the mother or foetus to ionizing radiation. Ultrasound examination has become an important part of antenatal care because it assists healthcare professionals in evaluating fetal well-being, identifying pregnancy-related concerns, and supporting appropriate clinical decision-making. Regular ultrasound assessments during pregnancy allow monitoring of important factors such as fetal growth, gestational age, fetal position, placental location, and amniotic fluid levels, contributing to safer pregnancy management.

The use of ultrasound during pregnancy begins with early assessment of pregnancy location, viability, and gestational age. In the first trimester, ultrasound can confirm the presence of an intrauterine pregnancy, assess fetal heartbeat, and estimate the expected date of delivery. Accurate determination of gestational age is important because it helps guide future antenatal care, evaluate fetal growth patterns, and plan appropriate timing of delivery. Early ultrasound examination may also assist in identifying multiple pregnancies and detecting certain early pregnancy complications that require closer observation.

During the second trimester, ultrasound plays an important role in evaluating fetal anatomy and development. Detailed fetal examinations can assess the formation of major organs, skeletal structures, and other anatomical features. These assessments help identify structural abnormalities that may require further evaluation, specialized care, or preparation for management after birth. Ultrasound findings also provide information about fetal growth patterns and allow healthcare providers to monitor whether development is progressing according to expected standards. When concerns are identified, additional investigations and consultations can be arranged to support informed care planning for the mother and family.

Pregnancy ultrasound also contributes to the evaluation of maternal structures that influence pregnancy outcomes. Assessment of the placenta helps determine its location and relationship to the cervix, which is important for identifying conditions that may affect delivery planning. Measurement of amniotic fluid volume provides information regarding fetal health and may indicate conditions requiring additional monitoring. Evaluation of the uterus and surrounding tissues can also assist in identifying factors that may influence pregnancy progression. By providing information about both maternal and fetal conditions, ultrasound supports comprehensive antenatal assessment.

Fetal growth monitoring through ultrasound is particularly valuable in pregnancies where there is an increased risk of growth abnormalities. Conditions such as maternal hypertension, diabetes, previous pregnancy complications, or suspected fetal growth restriction may require repeated ultrasound evaluations. Measurements of fetal body parts, including head circumference, abdominal circumference, and femur length, are used to estimate fetal size and assess growth patterns. Monitoring these changes over time helps healthcare providers recognize deviations from expected development and determine appropriate follow-up strategies.

Advancements in ultrasound technology have expanded the ability to evaluate pregnancy development with greater detail. Three-dimensional and four-dimensional ultrasound techniques provide enhanced visualization of fetal structures and movements, while Doppler ultrasound allows assessment of blood flow between the mother, placenta, and fetus. These methods are particularly useful in pregnancies requiring closer surveillance because they provide additional information about fetal circulation and placental function. However, ultrasound findings should always be interpreted by trained healthcare professionals to ensure accurate assessment and appropriate clinical use.

Although pregnancy ultrasound is considered a safe and valuable diagnostic method, its effectiveness depends on proper timing, skilled performance, and appropriate interpretation. Excessive

Correspondence to: Sophia Bennett, Department of Child Health, Faculty of Medicine, University of Auckland, Auckland, New Zealand, E-mail: sophia.bennett.sofi@outlook.com

Received: 28-Feb-2026, Manuscript No. CMCH-26-32406; **Editor assigned:** 03-Mar-2026, Pre QC No. CMCH-26-32406; **Reviewed:** 17-Mar-2026, QC No. CMCH-26-32406; **Revised:** 24-Mar-2026, Manuscript No. CMCH-26-32406; **Published:** 31-Mar-2026, DOI: 10.35248/2090-7214.26.23.576

Citation: Bennett S (2026). Pregnancy Ultrasound and Its Role in Maternal and Fetal Health Assessment. Clinics Mother Child Health.23:576.

Copyright: ©2026 Bennett S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

use of ultrasound without medical purpose is generally avoided, and examinations are recommended based on clinical needs and established antenatal care practices. Access to quality ultrasound services may vary between regions due to differences in healthcare infrastructure, availability of trained personnel, and economic factors. Strengthening maternal healthcare systems and improving access to reliable imaging services can enhance pregnancy monitoring and outcomes.

Ultrasound examinations also provide an opportunity for communication between healthcare providers and expectant parents. Seeing fetal development through imaging can help families understand pregnancy progression and participate more actively in antenatal care decisions. Healthcare professionals can use ultrasound visits to provide education regarding pregnancy

health, birth preparation, and follow-up recommendations. Clear communication regarding ultrasound findings helps families receive accurate information and appropriate guidance throughout pregnancy.

In conclusion, pregnancy ultrasound is an essential component of modern maternal healthcare that supports the assessment of fetal growth, pregnancy progression, and maternal conditions. Through accurate imaging and careful interpretation, ultrasound helps identify potential concerns, guides clinical management, and promotes informed antenatal care. Integrating appropriate ultrasound services into routine pregnancy care contributes to improved maternal and fetal health outcomes while supporting families throughout the pregnancy journey.