

# A pictorial guide for the second trimester ultrasound

## Abstract

**Introduction:** The second trimester ultrasound remains an important screening tool for detecting fetal abnormalities. This pictorial guide for the second trimester ultrasound is designed to assist practitioners to produce a high quality diagnostic survey of the fetus by demonstrating and describing recommended images.

**Methods:** Each image is discussed in detail and has an associated drawn line diagram to aid in the identification of the important features of that image. There is a description of the salient landmarks and relevant measurements.

**Result:** The authors hope this article may act as a useful guide to all practitioners performing second trimester ultrasounds.

**Keywords:** imaging, prenatal ultrasound, second trimester routine ultrasound.

**Michael Bethune<sup>1,2</sup>**  
FRANZCOG, DDU, COGU

**Ekaterina Alibrahim<sup>1</sup>**  
FRANZCR

**Bridy Davies<sup>1</sup>**  
Grad Dip US, AMS

**Eric Yong<sup>1</sup>**  
MBBS, BMed Sci

<sup>1</sup>Medical Imaging  
Department  
The Mercy Hospital for  
Women  
Melbourne  
Victoria  
Australia

<sup>2</sup>Specialist Women's  
Ultrasound  
Box Hill  
Melbourne  
Victoria  
Australia

Correspondence to email  
michaeln@swus.com.au

## Introduction

The second trimester ultrasound is commonly performed between 18 and 22 weeks gestation. Historically the second trimester ultrasound was often the only routine scan offered in a pregnancy and so was expected to provide information about gestational age (correcting menstrual dates if necessary), fetal number and type of multiple pregnancy, placental position and pathology, as well as detecting fetal abnormalities.<sup>1</sup> Many patients now have several ultrasounds in their pregnancy with the first trimester nuchal translucency assessment becoming particularly common.<sup>2</sup> The second trimester ultrasound is now less often required for dating or detection of multiple pregnancies but remains very important to detect placental pathology and, despite advances in first trimester anomaly detection, remains an important ultrasound for the detection of fetal abnormalities. In order to maximise detection rates there is evidence that the ultrasound should be performed by operators with specific training in the detection of fetal abnormalities.<sup>3</sup>

## Second trimester ultrasound landmarks

This pictorial guide is provided as, despite a large volume of literature on the subject, it is difficult to find a single publication that describes the landmarks and range of images which are most useful to look for when performing the second trimester ultrasound. These images were all obtained on GE Healthcare Voluson E8 or 730 machines (GE Healthcare, Sydney, Australia). The images provided are representative. Some examinations may yield significantly better images while other examinations, especially in large patients, may yield much less clear images. The authors are not suggesting that an

examination is only complete if all of these images are presented. Rather, we are suggesting that each labelled landmark is worth examining carefully during a second trimester ultrasound. Although the important features are described it is beyond the scope of this article to discuss the associated pathologies of each feature.

This guide is presented roughly in cephalic to caudal order, but where possible grouped by organ system. Operators would benefit from a systematic approach to ensure that all structures are seen even in difficult circumstances, as it can be possible to miss a structure, especially when there are active fetal movements.

## Recording the ultrasound

It is useful to have some record of the examination for future reference. Video clips or DVD recording of the scan has the advantage of providing moving images, which is particularly helpful when assessing the fetal heart. A series of still images is however easier to store and refer to in the future. Images should clearly display identifying information such as the patient's full name; birth date; medical record or identification number; date of the ultrasound examination; and site where the examination was performed (hospital or private practice),<sup>4</sup> ensuring compliance with local legal requirements.

## Biometry

There are a number of measurements to take during the examination. Some measurements of fetal size should be included in the formal report of each examination. The minimum measurements to report are: biparietal diameter (BPD), head circumference (HC), abdominal circumference (AC), and femur length (FL).<sup>5-7</sup> Other biometry

# Kregek Pictorial Guide

**Rachel Sandford**



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## **Table of Contents Kregek Pictorial Guide**

1. Understanding the eBook Kregek Pictorial Guide
  - The Rise of Digital Reading Kregek Pictorial Guide
  - Advantages of eBooks Over Traditional Books
2. Identifying Kregek Pictorial Guide
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Kregek Pictorial Guide
  - User-Friendly Interface
4. Exploring eBook Recommendations from Kregek Pictorial Guide
  - Personalized Recommendations
  - Kregek Pictorial Guide User Reviews and Ratings
  - Kregek Pictorial Guide and Bestseller Lists
5. Accessing Kregek Pictorial Guide Free and Paid eBooks

- Kregek Pictorial Guide Public Domain eBooks
  - Kregek Pictorial Guide eBook Subscription Services
  - Kregek Pictorial Guide Budget-Friendly Options
6. Navigating Kregek Pictorial Guide eBook Formats
    - ePub, PDF, MOBI, and More
    - Kregek Pictorial Guide Compatibility with Devices
    - Kregek Pictorial Guide Enhanced eBook Features
  7. Enhancing Your Reading Experience
    - Adjustable Fonts and Text Sizes of Kregek Pictorial Guide
    - Highlighting and Note-Taking Kregek Pictorial Guide
    - Interactive Elements Kregek Pictorial Guide
  8. Staying Engaged with Kregek Pictorial Guide
    - Joining Online Reading Communities
    - Participating in Virtual Book Clubs
    - Following Authors and Publishers Kregek Pictorial Guide
  9. Balancing eBooks and Physical Books Kregek Pictorial Guide
    - Benefits of a Digital Library
    - Creating a Diverse Reading Collection Kregek Pictorial Guide
  10. Overcoming Reading Challenges
    - Dealing with Digital Eye Strain
    - Minimizing Distractions
    - Managing Screen Time
  11. Cultivating a Reading Routine Kregek Pictorial Guide
    - Setting Reading Goals Kregek Pictorial Guide
    - Carving Out Dedicated Reading Time
  12. Sourcing Reliable Information of Kregek Pictorial Guide
    - Fact-Checking eBook Content of Kregek Pictorial Guide
    - Distinguishing Credible Sources
  13. Promoting Lifelong Learning
    - Utilizing eBooks for Skill Development

- Exploring Educational eBooks

#### 14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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