



Understanding **FETAL** ECHOCARDIOGRAM



SEEING TODAY FOR A HEALTHIER TOMORROW



WHAT IS A FETAL ECHOCARDIOGRAM?

A fetal echocardiogram is a specialized ultrasound examination of an unborn baby's heart. It uses sound waves to create detailed images of the fetal heart, allowing physicians to evaluate the heart's structure, function, rhythm, and blood flow before birth.

Unlike a routine prenatal ultrasound, it focuses specifically on the cardiovascular system.



WHEN IS IT USUALLY PERFORMED?

The optimal time is typically between **18 and 24 weeks** of pregnancy, although studies may be performed earlier or later depending on the clinical situation.



**18-24
WEEKS**



WHY IS A FETAL ECHOCARDIOGRAM PERFORMED?

- ✓ Detect congenital heart defects before birth
- ✓ Assess fetal heart rhythm abnormalities (arrhythmias)
- ✓ Evaluate heart function and blood flow
- ✓ Monitor babies at increased risk for heart disease
- ✓ Assist in planning delivery and postnatal care when heart abnormalities are identified



WHO MAY NEED A FETAL ECHOCARDIOGRAM?

MATERNAL RISK FACTORS

- Diabetes mellitus
- Autoimmune diseases (such as lupus)
- Certain medications during pregnancy
- In-vitro fertilization (IVF)
- Family history of congenital heart disease
- Maternal infections during pregnancy

FETAL RISK FACTORS

- Abnormal findings on routine obstetric ultrasound
- Increased nuchal translucency
- Chromosomal abnormalities
- Genetic syndromes
- Abnormal fetal heart rhythm
- Suspected congenital heart disease



WHAT CONDITIONS CAN BE DETECTED?

STRUCTURAL HEART DEFECTS



- Ventricular Septal Defect (VSD)
- Atrial Septal Defect (ASD)
- Tetralogy of Fallot
- Transposition of the Great Arteries
- Hypoplastic Left Heart Syndrome
- Coarctation of the Aorta
- Pulmonary Valve Stenosis
- Atrioventricular Septal Defect

RHYTHM DISORDERS



- Supraventricular Tachycardia (SVT)
- Heart Block
- Premature Atrial Contractions (PACs)
- Premature Ventricular Contractions (PVCs)

FUNCTIONAL ABNORMALITIES



- Cardiomyopathy
- Heart failure
- Fetal hydrops
- Valve dysfunction



WHAT HAPPENS DURING THE EXAMINATION?

- 1 The mother lies comfortably on an examination table.
- 2 Ultrasound gel is applied to the abdomen.
- 3 A transducer is moved across the abdomen to obtain images.
- 4 Multiple views of the fetal heart are obtained.
- 5 Blood flow is assessed using Doppler imaging.



The examination usually takes **30-60 MINUTES** depending on fetal position and the complexity of the study.



IS IT SAFE?

Yes. Fetal echocardiography is a safe, non-invasive procedure that uses ultrasound waves rather than radiation. It has been used extensively in pregnancy for decades.



LIMITATIONS OF FETAL ECHOCARDIOGRAPHY

While highly accurate, some conditions may be difficult to diagnose before birth:

- Small ventricular septal defects
- Mild valve abnormalities
- Coarctation of the aorta
- Small atrial septal defects
- Certain coronary artery abnormalities

Some heart conditions may evolve as pregnancy progresses and require follow-up studies.



BENEFITS OF PRENATAL DIAGNOSIS

- ✓ Improve pregnancy counseling
- ✓ Allow coordinated delivery planning
- ✓ Ensure immediate access to specialized neonatal care
- ✓ Improve outcomes for many complex congenital heart defects
- ✓ Reduce parental anxiety through education and preparation



AFTER THE FETAL ECHOCARDIOGRAM



IF THE STUDY IS NORMAL

- Reassurance is provided.
- No further cardiac testing may be necessary unless new concerns arise.



IF AN ABNORMALITY IS FOUND

- Detailed counseling is provided.
- Additional fetal echocardiograms may be scheduled.
- Genetic testing may be considered.
- Delivery planning with maternal-fetal medicine, neonatology, and pediatric cardiology teams may be recommended.



A fetal echocardiogram is one of the most valuable tools for evaluating an unborn baby's heart. Early detection of congenital heart disease allows families and healthcare teams to prepare for the safest possible pregnancy, delivery, and postnatal care.

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