

Recommendations for Cardiac Screening and Diagnosis in the Fetus

(Consensus statement developed by TPMG Regional Pediatric Cardiology and Perinatology Groups)

Definitions: A Fetal Cardiology Evaluation is an evaluation that includes a Formal Fetal Echocardiogram as well as parental counseling regarding prenatal and postnatal prognosis, disposition, therapies, and outcomes.

A Formal Fetal Echocardiogram includes a complete ultrasound evaluation of the following: systemic and pulmonary veins, atria, atrioventricular valves, septae, ventricles, semilunar valves, great arteries, outflow tracts, arches, and effusions. This includes the use of Doppler to assess venous flow pattern, flow pattern across PFO, AV and semi lunar valve function, ductal and pulmonary and systemic arterial flow. It also includes detailed evaluation of the size and function of both ventricles as well as any dysrhythmias.

A Fetal Cardiac Screening Ultrasound consists of ultrasound visualization of the four fetal cardiac chambers, atrial and ventricular septae, A-V valves, and outflow tracts. Also color flow of the four chamber heart should be used to identify any significant VSD and also to rule out significant tricuspid regurgitation. Finally this screen should also include a basic evaluation of fetal heart rate and rhythm.

Indications for a Fetal Cardiology Evaluation (these are expected to be referred):

1. Abnormal cardiac findings on any fetal ultrasound.
2. Fetal tachycardia persistently over 180 bpm, bradycardia persistently below 100 bpm, or any hemodynamically significant fetal dysrhythmia on screening ultrasound.
3. Any pregnancy in which termination is considered due to fetal cardiac abnormalities.

Indications for Formal Fetal Echocardiogram (referral strongly recommended):

1. Major fetal abnormalities highly associated with cardiac pathology such as:
 - a. Chromosomal Abnormalities highly associated with CHD (i.e. Down Syndrome)
 - b. Trisomy 13 and 18 if pregnancies are not terminated.
 - c. Heterotaxy Syndromes (Polysplenia/Asplenia).
 - d. VATER or VACTERL Associations.
2. Maternal systemic lupus erythematosus (SLE) with evidence of bradycardia or prolongation of the A-V interval.
3. Pre-gestational Diabetics with suboptimal fetal cardiac screening ultrasound.
4. Fetuses requiring fetal cardiac screening ultrasound (see below) where all components of a fetal cardiac screening ultrasound cannot be obtained.

Indications for Fetal Cardiac Screening Ultrasound:

1. Family history of congenital heart disease (excluding patent ductus arteriosus) in mother, father, or siblings. These patients are often known to pediatric cardiologists that are following the first degree relative and may be directly referred by the cardiologist.
2. Pre-gestational Diabetics.
3. Elevated fetal nuchal translucency measurements ≥ 3.0 mm between 10-3/7 and 13-6/7 weeks should be evaluated with a fetal cardiac screening ultrasound. Recommendations for additional testing, such as a formal fetal echocardiogram, will be determined by Perinatology.