# [Usefulness of Postnatal Echocardiography in Patients with Down Syndrome with Normal Fetal Echocardiograms.](https://www.ncbi.nlm.nih.gov/pubmed/31541264)

Cooper A, Sisco K, Backes CH, Dutro M, Seabrook R, Santoro SL, Cua CL.

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**Take-Home Points:**

* The incidence of significant congenital heart defects(CHD) on postnatal echocardiograms for patients with Down Syndrome (DS) who had a normal fetal echo is nearly zero.
* Minor CHD, if present, will likely have an abnormal exam or EKG finding.
* Delivery at a center without pediatric cardiology availability is likely reasonable.

**Commentary from Dr. Jared Hershenson (Greater Washington DC), section editor of Pediatric Cardiology Journal Watch:** A fetal echocardiogram is a class I recommendation if a chromosomal abnormality is present. The AHA currently recommends a postnatal echocardiogram in all patients with DS regardless of a normal fetal echocardiogram. With a new emphasis on appropriate use criteria in pediatric echocardiography, this may be a subgroup that could be further evaluated. The primary and secondary goals of this study was to determine if there was any missed complex CHD and any CHD postnatal echocardiograms after a normal fetal echo in DS patients. This was a retrospective evaluation of 120 total patients with suspected DS; 72 had complex CHD with the most common diagnoses AVSD and VSD. 45 patients had a normal fetal echo and also had a postnatal echo performed. Complex CHD was defined as a diagnosis with RACHS >/= 3.  PFO and PDA were not included as pathologic CHD diagnoses for the purpose of this study. The gestational age at the time of initial fetal echo was 25 +/- 3.5 weeks. The median age at postnatal echo was 7 days, with 24 patients having an echo within the first week of life. No patients had complex CHD; negative predictive value was 100%. 13 patients had minor CHD consisting mostly of ASDs or VSDs; negative predictive value 71.1%. All of them had a heart murmur or EKG abnormality on evaluation. 1/13 patients died from severe PPHN. 3/13 required intervention (2 caths for PDA closure, 1 primum ASD repair). One other patient has a primum ASD that was still being followed (see table 1).

While fetal echocardiography does not have 100% sensitivity for ruling out CHD, this study adds weight to previous studies that missed complex CHD is very unlikely. At a minimum, in an otherwise uncomplicated pregnancy or in a region with many hospitals that do not have direct access to pediatric cardiology, it would seem quite reasonable to deliver patients with a negative fetal echo and refer them to pediatric cardiology within the first few weeks of life. There is unlikely enough evidence to change the postnatal echo recommendations given that there are many minor CHD diagnoses that need to be followed over time; however, the authors do speculate how AUC may be used in this population when adding other historical and clinical factors and an EKG. Limitations of this study include its small sample size and retrospective design, but this study could easily be replicated with a larger cohort.

