

Prenatal diagnosis matters: Linked to earlier surgery for congenital heart disease

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A study from Ann & Robert H. Lurie Children's Hospital of Chicago has shown that prenatal diagnosis, or diagnosis before a baby is born, is associated with earlier surgery for babies with congenital heart defects,

the most common birth defects affecting nearly 1% of all live births. The association was demonstrated for critical defects (when heart surgery is required before the infant leaves the hospital) and certain types of noncritical defects, which constitute about 75% of all congenital heart defects.

The benefits of prenatal diagnosis of congenital heart defects for babies has been debated. With the knowledge that earlier [heart surgery](#) is often better for a child's development, investigators at Lurie Children's have found that prenatally diagnosed babies born with critical heart disease had [surgery](#) on average one week sooner than those with postnatal diagnosis. Surgery for babies with prenatally diagnosed noncritical cardiac defects occurred anywhere from two to 12 months sooner. Results were published in the journal *Circulation: Cardiovascular Quality and Outcomes*.

"Our study quantifies the tremendous importance of prenatal diagnosis for infants with congenital heart disease," said lead author Joyce Woo, MD, MS, cardiologist at Lurie Children's and Assistant Professor of Pediatrics and Medical Social Sciences at Northwestern University Feinberg School of Medicine. "For infants with critical disease especially, getting surgery a week earlier can make a big difference in the development of the brain and other organs. Earlier surgery for certain types of noncritical congenital heart disease can also prevent poor outcomes, such as [heart failure](#). Our findings emphasize that prenatal diagnosis is crucial to optimize surgical timing and the long-term health of the baby. Prenatal diagnosis needs to be equitably accessible to all pregnant people."

Dr. Woo and colleagues analyzed a cohort of 1,131 patients with congenital [heart](#) defects, aged 0-9 years, who received their initial cardiac surgery at Lurie Children's between 2015 and 2021. Nearly half of these patients had prenatal diagnosis. After accounting for

demographics, comorbidities and surgical complexity, the average age at surgery was significantly younger in infants with prenatally versus postnatally diagnosed critical and noncritical [congenital heart disease](#). Infants with one of the most common types of noncritical disease, called atrial septal defects, had surgery about a year sooner.

"Our study shows that the best care for kids starts with prenatal [diagnosis](#). More research is needed to identify and overcome the barriers to [prenatal diagnosis](#)," said Dr. Woo. "These can include social barriers such as distance to care, lack of childcare, or inability to take time off from work. We need a better understanding of these factors in order to provide the highest quality care to babies born with cardiac defects, and their families."

More information: Joyce L. Woo et al, Association Between Prenatal Diagnosis and Age at Surgery for Noncritical and Critical Congenital Heart Defects, *Circulation: Cardiovascular Quality and Outcomes* (2023). DOI: 10.1161/CIRCOUTCOMES.122.009638 , [dx.doi.org/10.1161/CIRCOUTCOMES.122.009638](https://doi.org/10.1161/CIRCOUTCOMES.122.009638)

Provided by Ann & Robert H. Lurie Children's Hospital of Chicago

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