

Minorities born with heart defects at higher risk of dying in early childhood than whites

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Non-Hispanic black infants born with heart defects are more likely to die within the first five years of life than their non-Hispanic white and Hispanic peers. For certain types of congenital heart abnormalities, Hispanic children as well as non-Hispanic black children fare worse than non-Hispanic white children.

These findings, detailed in a new study by researchers at the University of South Florida, Texas Department of State Health Services and University of Texas Southwestern Medical Center, suggest preventive strategies are needed to reduce racial and ethnic disparities among infants and young children with heart defects. The research is published online today in the journal *Pediatrics*.

"When you consider that the numbers of minority children continue to grow and are expected to account for more than half of all U.S. children by 2040, it's clear we need to reduce the racial and disparities that burden the [health care system](#) and adversely affect the lives of families," said lead author Wendy Nembhard, PhD, associate professor of epidemiology at the USF College of Public Health.

Congenital heart defects are malformations in one or more structures of the heart or major blood vessels that occur before birth. They are the most common of all birth defects and the leading cause of death among infants with birth defects.

The new study adds to a growing body of evidence that minority infants with specific types of heart defects have poorer survival rates in early childhood than non-Hispanic white infants.

The researchers retrospectively reviewed the records of 19,530 single infants born with congenital heart defects in Texas from January 1996 through December 2005. The study was limited to infants born to non-Hispanic white, non-

Hispanic black and Hispanic women. Linking records from the Texas Birth Defect Registry to Texas death records and the National Death Index, the researchers analyzed survival rates and risk of childhood death within the first five years of life for each type of [congenital heart defect](#).

Among the study findings:

- Non-Hispanic black race/ethnicity was more strongly associated with increased risk of early childhood death than Hispanic race/ethnicity.
- Overall, non-Hispanic black infants with congenital heart defects had a 32 percent greater risk of early childhood death than their non-Hispanic white counterparts. In contrast, Hispanic infants with heart defects had no overall increased risk of early childhood death when compared with white infants.
- The risk of early childhood death was twice as great for non-Hispanic black infants with a reversal in primary connections of the heart's two main blood vessels (known as transposition of the great arteries) as for similarly affected non-Hispanic white infants. The same two-fold increased risk was seen in this group for tetralogy of Fallot, a cyanotic heart defect causing low oxygen levels in the blood.
- Of the three racial/ethnic groups, non-Hispanic black [infants](#) consistently had the lowest survival rates for congenital abnormalities in the septum (wall) separating the left and right sides of the heart.
- Hispanic children had the lowest survival rate of the three groups for hypoplastic left

heart syndrome, a rare defect in which the heart's left side is critically underdeveloped. They were also less likely to survive than non-Hispanic whites when born with pulmonary valve atresia without ventricular septic defect, a condition including absence of the pulmonary valve opening in the heart.

The researchers suggest the inequalities in early childhood survival may be caused by several factors: underlying racial/ethnic biological differences, including severity of the defect or the number of co-occurring defects; lack of timely access to quality health care; and cultural factors or preferences, such as differences in prenatal diagnosis of defects.

Future studies should determine what role these factors and others may play, so that effective public health policies can be devised to improve the health of minority children born with heart defects, the researchers conclude.

More information: Wendy N. Nembhard, PhD; Jason L. Salemi, MPH; Mary K. Ethen, MPH; David E. Fixler, MD, MSc; Angela DiMaggio, BS; and Mark A. Canfield, PhD; "Racial/Ethnic Disparities in Risk of Early Childhood Mortality Among Children With Congenital Heart Defects," *Pediatrics*, published online April 18, 2011.

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