MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

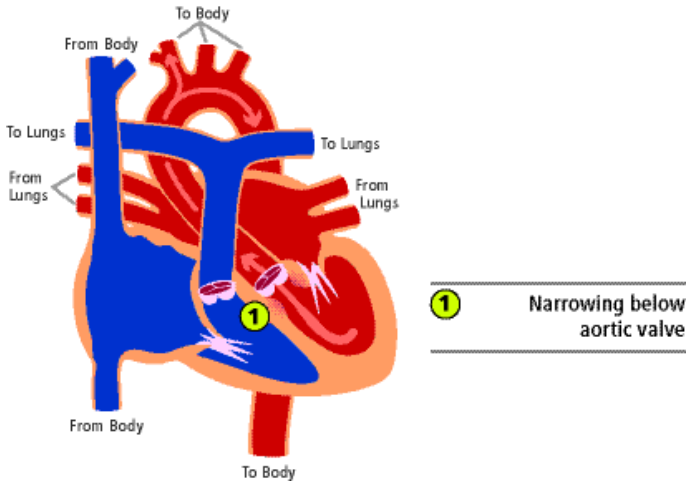
FETAL DIAGNOSIS AND TREATMENT CENTER

Prenatal Care for Aortic Stenosis

In a normal fetus, blood flows from the heart through the aortic valve to the rest of the body. The term 'aortic stenosis' refers to a narrowing of this valve, resulting in an obstruction of blood flow. Critical aortic stenosis affects about 6 in every 1,000 infants born and occurs more often in boys. It may be an isolated defect or occur with other heart problems. Michigan Medicine C.S. Mott Children's Hospital is an international referral center for children with complex congenital heart disease, such as aortic stenosis. Advances in technology have led to increased ability to diagnose aortic stenosis in infants before birth. Michigan Medicine's maternal fetal medicine specialists (doctors who specialize in caring for high-risk pregnancies) work in close collaboration with the fetal heart specialists from our Congenital Heart Center to provide unparalleled fetal diagnosis and treatment alternatives for mothers of infants diagnosed with aortic stenosis.

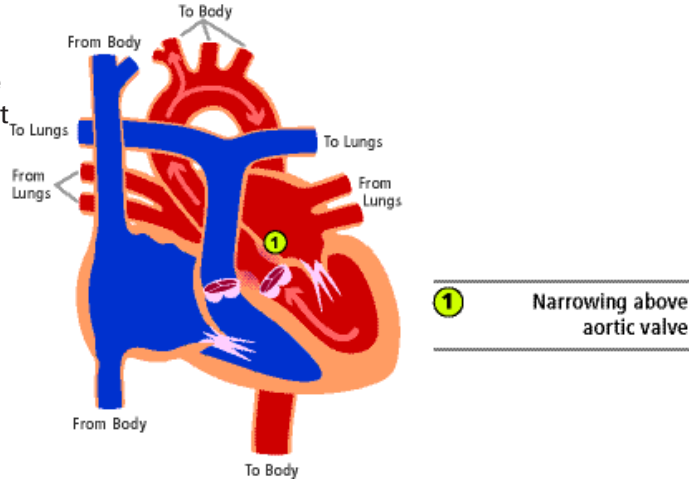
Fetal diagnosis of aortic stenosis

Routine prenatal ultrasounds can detect a problem with the baby's heart. Aortic stenosis can be identified by fetal echocardiogram as early as 16 weeks into the pregnancy. When critical aortic stenosis is present in the mid-trimester fetus, the left ventricle becomes dilated and dysfunctional. As a result, there is less blood flow through the left heart contributing to a halt in the growth of the left ventricle. The outcome is similar to hypoplastic left heart syndrome at the time of the delivery. Due to the high number of mothers referred to our fetal heart center from throughout the nation, our team has an unparalleled level of experience accurately diagnosing aortic stenosis prenatally.



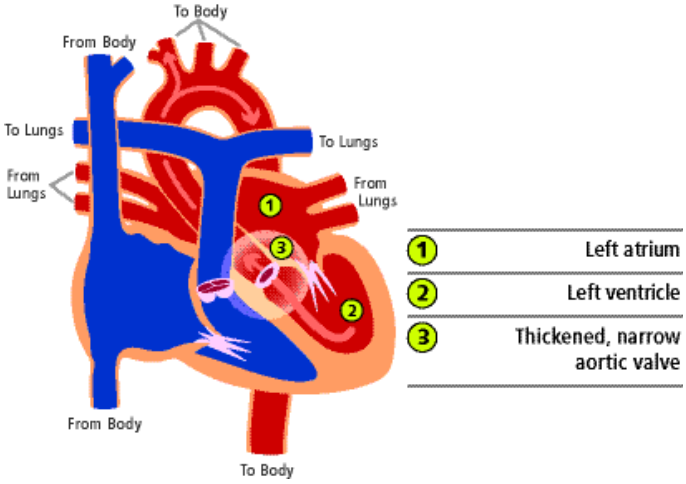
Fetal treatment for aortic stenosis

Fetal treatment is available for select fetuses. Fetal intervention to correct the anatomical defect has the potential to alter the natural history of the disease, which may lead to a significant improvement in the outcome. The maternal fetal medicine team and your pediatric cardiologist at Mott Children's Hospital will work with you to determine if your baby is a candidate for fetal cardiac intervention. After the placement of an epidural for maternal anesthesia, a needle and catheter is passed through the uterus and into the fetal heart. The aim of in utero intervention is to open the stenotic aortic valve with a balloon catheter before the growth of the left ventricle is negatively affected. If normal blood flow can be restored, a left ventricle with more adequate size and function may be present at birth.



Delivery of babies with aortic stenosis

Unless there is a special birth plan, a vaginal delivery is recommended and a cesarean section is reserved for obstetric indications. It is recommended that the delivery is planned at a hospital that is prepared for high-risk deliveries and also includes a neonatal intensive care, pediatric cardiology and pediatric cardiothoracic services. This will help facilitate coordination of care between specialties and permit access to other emergency services if needed. Michigan Medicine is one of only a few centers nationwide at which the birth center is co-located within a comprehensive children's hospital. This unique setting allows for seamless integration between our private-room birth center, state-of-the-art newborn intensive care unit (NICU), and pediatric cardiothoracic intensive care unit in one convenient location.



Treatment for aortic stenosis after birth

Medical interventions for infants with aortic stenosis depend on several factors including the location of the narrowing, severity of narrowing, size of the left ventricle, associated cardiac problems, symptoms, age and size. The Michigan Medicine Congenital Heart Center offers a comprehensive treatment and long term care for babies born with aortic stenosis.

Can this happen again with another pregnancy?

Left sided heart problems can recur in families where one child is affected. Estimates of having another child affected with a heart defect range from 4.5 to 13% (Boughman et al. 1993, Brenner et al. 1989). When a heart defect recurs in another child, it is not necessarily the same heart defect, and can be something more minor or just as severe. Your doctor and a genetic counselor will meet with you and discuss your family's risk.

Take the next step

If you have questions about the fetal heart program at C.S. Mott Children's Hospital, would like to schedule an appointment or if we can be of further assistance in any way, please call 1-877-475-6688.