

THE DAILY CHECKUP BY KATIE CHARLES

A little heart and a lot of skill

Congenital cardiac problems can be spotted even before birth, and the techniques for fixing them are becoming less invasive

► **The specialist: Dr. Barry Love on pediatric heart problems**

As director of the Congenital Cardiac Catheterization Lab at Mount Sinai, Barry Love is a pediatrician and congenital cardiologist who specializes in performing interventions for inborn heart problems. Last year, he performed more than 350 interventions.

► **Who's at risk**

Just under 1% of children are born with some abnormality of the heart structure.

"Congenital heart disease is the general term for inborn problems of the heart," says Love. "The diagnosis can be made any time from fetal life to adulthood."

While most congenital heart problems don't require treatment, about one or two of every 1,000 people have a more serious problem requiring an intervention.

There are many forms of congenital heart disease. "These problems can be anywhere in the heart, including a hole between the pumping chambers, or between the upper chambers of the heart," says Love. "There can be problems with heart valves or blood vessels, usually when they are too small or narrowed."

In other cases, blood vessels can arrive in the wrong place. Sometimes these problems are diagnosed in utero through a fetal ultrasound, while some are diagnosed shortly after birth, and still others don't become apparent until the patient is fully grown.

In the vast majority of cases, congenital heart diseases appear randomly, not as the result of family history or something that happens to the mother during pregnancy. "Most of these problems arise in an isolated fashion — not from heredity or anything we've identified," says Love. "We spend a fair bit of time reassuring parents that really, this isn't anything they did or didn't do."

► **Signs and symptoms**

Most congenital heart disease is diagnosed in newborns. "Infants can present with poor feeding, breathing difficulties or a blue color that indicates a low oxygen level," says Love. Another common symptom is a heart murmur, which the doctor often picks up during routine screening when listening to the child's chest.

"The doctor may hear a noise, a heart murmur, which can be a sign of abnormal blood flow," says Love. "An experienced doctor can tell the difference between normal and problematic heart murmurs in their sound and other symptoms."

For the vast majority of patients, a heart murmur is

► **What you can do:**

Take folic acid.

Doctors recommend that women start taking 400 units of folate daily before they get pregnant. It definitely helps prevent spina bifida — cutting the baby's risk by as much as 75% — and might help prevent heart defects, too.

Get a proper fetal ultrasound screening.

If you're pregnant, have a proper fetal ultrasound by a licensed practitioner. These tests are done routinely and are considered safe for both the baby and the mother.

Know your family history.

If there's a family history of inborn heart disease or maternal diabetes, or if your obstetrician suspects an abnormality of the heart, consider getting a fetal echocardiogram, which uses sound waves to fully evaluate your baby's heart.



TANYA BRAGANTI

In almost all cases, says Dr. Barry Love, congenital heart problems are the result of random chance.

caused by normal blood flow and is nothing to worry about. "But if it's something that persists over time, the doctor should ask to have it evaluated," says Love.

Less-serious congenital heart disease can also be diagnosed in children and adults. "Typically the ones who are diagnosed outside of infancy are diagnosed through a heart murmur," says Love. One thing that worried parents will be glad to know is that chest pain is almost never a sign of heart disease in children. "It's usually a sign of pain in the muscles of the chest wall, not the heart," says Love.

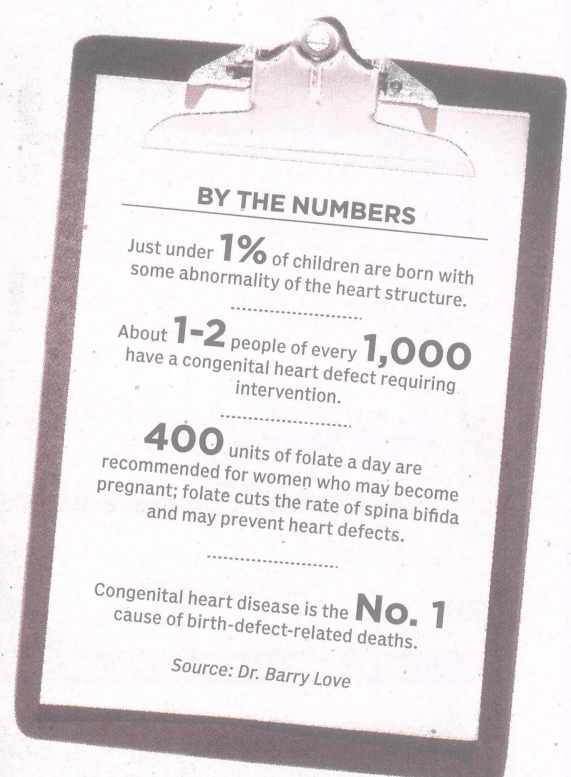
More and more babies are being diagnosed with congenital heart disease before they are even born. "Fetal heart ultrasounds are often helpful in early diagnosis," says Love. "It used to be that we got called routinely urgently in the middle of the night when a baby was born with a suspected severe heart defect, but now we have advance warning for more and more of those cases."

► **Traditional treatment**

The treatment options depend on what type of congenital heart disease the patient has. "The traditional treatment is still open-heart surgery," says Love. "The first intervention ever done for congenital heart disease was done in 1938, when surgeons closed an abnormal heart vessel."

Seventy years later, that procedure is routinely done nonsurgically in the cath lab, where instead of making an open cut, doctors use catheters to do everything minimally invasively. Doing interventions this way has a big advantage over surgery. "The heart is beating and the blood is being circulated the whole time," says Love. "You don't need to hook the patient up to a heart-lung machine to oxygenate the blood."

Depending on the complexity of the task, cath lab procedures take between 45 minutes and several hours. "Using a catheter, we go from the top of the leg, through the vein and artery and up to the heart, where we take pictures," says Love. "Then we can close holes between the chambers of the heart with devices, or open up valves and arteries with



BY THE NUMBERS

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400 units of folate a day are recommended for women who may become pregnant; folate cuts the rate of spina bifida and may prevent heart defects.

Congenital heart disease is the **No. 1** cause of birth-defect-related deaths.

Source: Dr. Barry Love

balloons." Doctors can also put in stents that hold open arteries, like the vessels that go to the lungs.

Without the major chest incision that would accompany open-heart surgery, the recovery period is remarkably fast. "Most patients go home the same day or the next day and are back to their normal activities within a week," says Love.

► **Research breakthroughs**

One of the most exciting advances for treating congenital heart disease is using a catheter to perform valve replacements, which substitutes a minimally invasive procedure for traditional surgery.

"This is on the short-term horizon," says Love. "Because artificial valves don't grow, doctors used to have to go back in to replace them as children grew." For many kids, that meant repeated operations. "We have evolving therapies that are improving our ability to treat congenital heart disease all the time," says Love.

► **Questions for your doctor:**

Before you take your newborn home from the hospital, ask if doctors performed a **pulse oximetry test**, which uses a light probe to painlessly measure the blood's oxygen level. A recent study showed that screening before discharge with pulse oximetry can detect nearly all serious newborn heart disease.

If a heart murmur shows up during your child's regular checkup, ask the doctor: "**Do you feel comfortable that my child's murmur doesn't represent a disease?**" If the doctor is not confident, then ask, "**What's the next step for getting it evaluated?**"

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