# New Advances in Cardiac Treatment Help Treat Smallest Patients

Linda Pauliks, M.D., medical director, pediatric and congenital cardiac imaging, Children's Heart Institute, MemorialCare Miller Children's & Women's Hospital Long Beach

**"The amazing thing is that we are now able to use more gentle testing and still get more information than ever before" says Dr. Pauliks.**

Dr. Linda Pauliks says she was always interested in science. Yet it wasn't until she started working with babies and children as a young doctor that she realized pediatric medicine was her calling.

Today, as medical director of Pediatric and Congenital Cardiac Imaging at the Children's Heart Institute at MemorialCare Miller Children's & Women's Hospital Long Beach, Dr. Pauliks works with children while also mastering increasingly sophisticated equipment to diagnose and treat life-threatening heart issues.

"When I started my fellowship 20 years ago in New York we did a lot of invasive procedures to get information about children's conditions," Dr. Pauliks recalls. "In sick young babies, cardiac catheterization is difficult because everything is so small. We would send them cold and swollen back to the Intensive Care Unit. I thought, 'There must be a better way.'"

It took some time for expensive and accurate tools such as MRIs [magnetic resonance imaging devices] to be adopted for cardiac care in children, she recalls. "I wanted to learn about them because MRI was the future – and for a long time, the joke ran that it will continue to be the future." During training, Dr. Pauliks saw the the first moving heart MRI pictures in a child performed at the University of Maryland, but it took more than two decades for the complex technology to really arrive in daily practice.

"When neurologists insisted upon using MRI for the head, suddenly it became possible for many of us to use them," she remembers. "Then scanners were installed, and costs came down. The same is finally happening with heart MRI now."

Recently, Jimmy Kimmel's son Billy was born with a heart defect and had successful surgeries to treat the condition. Such stories underscore the treatment of children with such issues, Dr. Pauliks notes.

"The amazing thing is that we are now able to use more gentle testing and still get more information than ever before," she adds. "In the past 20 years I've tried to figure out most things without painful tests or risky procedures."

Dr. Pauliks, whose first job as a candy striper in Germany was to dust the medical equipment, says the surgeons would let her watch them performing prenatal ultrasounds to see if babies were growing properly. "We thought that was awesome to see all the fingers and toes then," she recalls. "Today, we can detect so much more."

Pediatric heart specialists like her use echocardiograms to take pictures of the baby's heart before and after birth. Ultrasound computers have largely replaced invasive testing. About one percent of babies are born with heart problems. A common example would be a hole in the heart. Once the problem is detected, treatment is almost always successful, she notes.

She says that genetic specialists increasingly work with doctors in multiple specialties to plan care for babies before their birth, and yet fewer than 50 percent of cardiac disease is detected before birth. "We must do better," Dr. Pauliks notes. "If we have the best technology and equipment we should be able to detect more than 80 percent of heart issues before the baby is born."

Dr. Pauliks says that future developments include small, hand-held ultrasound devices. Sharing images to off-site physicians helps communication with specialists in real time, who can then diagnose and recommend treatment before they even get to see the baby. Another important frontier is checking heart function. "We can get more sophisticated and figure out why hearts are not as strong as they could be and how we can get them to work better," she says.

MemorialCare Miller Children's & Women's Hospital Long Beach
2801 Atlantic Ave., Long Beach, CA 90806
1.800.MEMORIAL | millerchildrens.org/heart