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## **Heart Repair Without Open Heart Surgery**

Repairing heart defects once meant certain open-heart surgery, but breakthrough technology continues to offer non-surgical alternatives for many cardiac patients. A new procedure is being performed at Carolinas Heart Institute and other select cardiac catheterization labs across the United States. Patients who benefit from this new procedure are those with a hole between the upper chambers of the heart through which blood clots can travel and potentially cause strokes.

Now, by using the CardioSEAL Septal Occluder, those holes can be repaired without surgery. The Sanger Clinic's Herbert Stern, M.D., a specially trained pediatric cardiologist, can close the hole using a catheter and the CardioSEAL device, which is made of fabric and flexible metal, and resembles 2 small umbrellas facing each other. It folds together, and is fed through a catheter into the heart. The procedure takes only one to two hours, and recovery time for the patient is measured in hours, not weeks, as it would be for surgery.

The cardiologist inserts a catheter into one of the patient's larger veins, usually in the leg or groin area. Monitored by x-ray and echocardiography, the catheter is threaded through vessels and into the patient's heart. The size of the hole is measured, and the appropriately sized CardioSEAL is selected. The doctor feeds the device into position through the catheter. He positions one umbrella on each side of the hole and once in place, the two sides of the umbrella open and compress together, effectively bridging the gap. In most cases, the patient goes home the next day. Within a few months, the patient's heart tissue grows around and into the CardioSEAL fabric, effectively making it a permanent part of the heart wall.

CardioSEAL has been available in Europe and other countries since 1997. It was approved by the FDA in February 2000 for use in this country. Carolinas

Medical Center and the Sanger Clinic began using the procedure for children and adults last July.

Through compassionate patient care, innovative medical procedures and a strong sense of community, the Sanger Clinic has built a reputation of trust and stability in the Carolinas. Founded in 1946 by Paul W. Sanger MD, the Sanger Clinic has grown to include an impressive staff of adult and pediatric cardiologists, and cardiac, thoracic and vascular surgeons. With 11 locations in both North and South Carolina, the Sanger Clinic offers convenient access to heart care. For more information, visit our website at [www.sangerclinic.com](http://www.sangerclinic.com)