

# Study evaluates a circle of netting in preventing heart failure

By William Hageman | Chicago Tribune reporter

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Thomas Casper has had more than his share of heart problems during the last 15 years.

He had a slight blockage that was treated with medication. He had two stents implanted when arteries were found to be 100 percent blocked. He had defibrillators implanted three times. And twice he received pacemakers.

But the latest procedure is the most unusual. Last June he had the HeartNet Ventricular Support System placed around his heart. It was part of a clinical research study of the device, which, as the name implies, is a net that surrounds a failing heart.

"You know when you buy a bag of oranges from the store?" says the 67-year-old [St. Charles](#) resident. "That orange net? It's kind of like one of those things."

The surgery was done at Edward Hospital in [Naperville](#), the only facility in the state taking part in the study, which is under the auspices of the Midwest Heart Foundation.

The idea is that the nylon net, developed by Paracor Medical in [California](#), will combat advanced heart failure by supporting the heart and keeping it from getting any larger—and thus less efficient at pumping—and will actually cause it to shrink over time.

The device could offer hope to people suffering from heart failure—more than 5 million Americans are living with it, according to the American Heart Association—depending on how the study turns out.

The procedure itself is relatively non-invasive and quick.

After an echo-cardiogram determines the exact placement of the heart and with the patient under anesthesia, an incision is made between the ribs on the left side. The doctor employs instruments devised by Paracor that first attach to the heart. Plastic fingers extend from the umbrella-like end of the delivery device, spreading the net over the lower portion of the heart. The fingers pull back and the delivery system is withdrawn, a fluoroscope is used for a final check to make sure the net is in the right position, and the doctor then closes.

Surgery takes less than an hour and is comparatively bloodless (the most recent patient at Edward lost 50 cc of blood, about a shot glass worth, during his procedure). And the patient can go home in three or four days.

"I'm not going to lie. It was sore where the scar was," Casper said. "But nothing out of the ordinary."

The first patient received a HeartNet in November 2006. About 100 have been implanted so far, and the results are promising.

"It's a blind study, but from the anecdotal feedback we get, the patients are doing well," says Darrell Ogi, Paracor's director of clinical engineering.

The HeartNet isn't the first product along these lines. Acorn Cardiovascular, a [Minnesota](#) company, tested a similar device but the FDA declined to approve it in 2005 and 2007 because it was not shown to improve survival rates. Still, says Dr. Robert Bonow, the data from that study

did provide some good news.

"The good news is that it appears to do what it was supposed to do, limit the heart's enlargement with time because it has a restraining device on the outside," says Bonow, chief of cardiology and co-director of the Bluhm Cardiovascular Institute at Northwestern Memorial Hospital and past president of the American Heart Association.

Bonow says the Acorn device has been approved for use in Europe, but the benefits of such restraining devices are still open for discussion.

"The studies did report an improvement in symptoms, which may be all you're looking for in some people," he says, "but we do have some medication and devices such as pacemakers that can also improve symptoms."

Dr. Russell Ivanhoe, the chief medical officer for Paracor, points out that the Acorn device and procedure differ from the HeartNet in several ways.

The Acorn implantation was done through open-heart surgery with the patient on bypass, and the device itself was made of fabric and didn't have the flexibility of the HeartNet, he says.

"Mechanistically there are some real differences," he said, adding that because the study is ongoing, no further conclusions can be reached yet.

The Paracor study is still enrolling patients, though not every person with heart failure is a candidate. People who have had previous heart surgery, who have inflammation around the heart or who may be future candidates for bypass surgery don't make the cut.

"Pardon the pun, but it's heartbreaking to some of these patients when they find out they can't be part of the study," said Dr. David Cziperle of Cardiac Surgery Associates and the cardiothoracic surgeon who has done more than a half-dozen of the procedures at Edward. "They were really hoping the HeartNet could help them."

Casper says he feels fine, and his prognosis is good, according to Dr. Maria Costanzo of Midwest Heart Specialists and the medical director of Edward Hospital's Center for Advanced Heart Failure.

"He is doing very well," she said. "We've noted in him and in other patients who have received the HeartNet that they're less tired and they feel they can do more."

Cziperle says that an underlying aim is to get as much mileage as possible out of a failing heart.

"If this is a way of keeping a heart from failing in the future, I think it's going to help a lot of people because there are roughly a half-million patients a year [diagnosed] with heart failure. And a significant number die, 250,000 to 300,000, die of heart failure.

"This isn't going to be for all those people, but if we can help a significant number of that population, it will decrease health costs, keep them out of the hospital, help them be functional and enjoying life. That's really what the goal is."

*To learn more about the study, go to [midwestheart.org](http://midwestheart.org) (630-932-2165) or [peerless-hf.com](http://peerless-hf.com).*