

## Heart Valve Replaced Outside of Heart



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Doctors at the Henry Ford Hospital in the United States have used a minimally invasive procedure to replace a failing, hard-to-reach heart valve with a new one and placed it just outside the heart. This is the first time this unique transcatheter tricuspid valve replacement procedure has been performed in the United States. It was originally pioneered in Germany.

There are approximately five million people in the United States who are diagnosed with heart valve disease annually. Many of them are too frail for open heart surgery. Over 9100 heart patients undergo tricuspid valve surgery in the United States annually. It is one of the most difficult surgeries to perform and generally requires open heart surgery to find the valve's location. According to the American Heart Association, nearly 20,000 Americans die of this disease each year.

This particular procedure was performed in a woman who was not considered a suitable candidate for traditional open heart surgery. While one medical centre refused to treat her, another told her that her only other option was a heart transplant. However, the medical team at Henry Ford Hospital replaced the woman's tricuspid valve during a two hour procedure.

Dr. O'Neill, the Medical Director of Henry Ford's Centre for Structural Heart Disease and lead physician for the procedure, threaded a catheter through a vein in the patient's groin to the upper abdomen. He then inserted the TAVR valve at the junction of the right atrium and the inferior vena cava (IVC). 3D modelling was used to create a working replica of the woman's heart.

Once the valve was deployed, it stopped blood from leaking and pooling in the patient's abdomen and lower extremities. Since there is always a risk of a drop of pressure in the abdomen, the patient was closely monitored through catheters inserted in the IVC above and below the new valve. The woman was released after spending five days at the hospital.

According to Dr. O'Neill, there are several people who have damage of the tricuspid valve and for whom surgery is considered to be risky. Doctors generally try to treat them with medical therapy but in a large number of cases, patients end up with swelling and severe liver congestion. The level of morbidity is very high in such patients and they are always in and out of hospitals. Dr. Neill is of the opinion that there is a need for a procedure that would offer a solution for individuals with this type of valve problem. The transcatheter tricuspid valve replacement offers such an option.

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