

# The first biological heart valve implanted into a beating heart

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A few days ago, the cardiac surgeons at the MedUni Vienna and Vienna General Hospital achieved an absolute first: the first biological heart valve implanted into a beating heart was given to a male patient who had a leaky aortic valve. The patient, whose medical care was being provided in Vienna, had aortic regurgitation and was unsuitable for open-heart surgery due to his other co-morbidities.

Trans-catheter aortic valve implantation systems (TAVI) are essentially suitable for older patients with more severe symptomatic narrowing of their aortic valves who require an [aortic valve replacement](#), but for

whom open-heart surgery is associated with increased risk.

## **Anchoring based on the "paperclip principle"**

The new TAVI system is the only one to have CE approval in accordance with the EU Directive on the treatment of patients with aortic regurgitation. Cardiac surgeon Wilfried Wisser from the University Department of Surgery at the MedUni Vienna / Vienna General Hospital explains: "The prosthesis is secured to the native valve leaflets using a clipping mechanism. This mechanism, similar in nature to the 'paperclip principle', allows prostheses to be implanted in [aortic valves](#) too without any calcification."

"Another reason to use the TAVI system is that it allows the prosthesis to be placed in an anatomically correct position. The 'three-sensor element', as it is known, ensures that it is deployed at the correct implantation height and that the prosthesis's connections are optimally aligned with the native valve. And with the new 'Cathlete plus' introducer system, this prosthesis can also be implanted and deployed easily and in a controlled and precise manner," adds Günther Laufer, Head of the Clinical Department of Cardiac Surgery at Vienna General Hospital / MedUni Vienna.

The bioprosthesis is exceptionally durable and, according to the experts, safeguards the long-term function of the aortic valve. The implantation procedure takes place on the beating heart. The flow of blood is maintained, thereby eliminating the risk of cardiac arrest. No cardiac stimulation is required during the implantation procedure.

Provided by Medical University of Vienna

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