

# Australian doctors transplant 'dead' hearts in surgical breakthrough (Update)

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Australian surgeons said Friday they have used hearts which had stopped beating in successful transplants, in what they said was a world first that could change the way organs are donated.

Until now, doctors have relied on using the still-beating hearts of donors who have been declared brain dead, often placing the recovered organs on ice and rushing them to their recipients.

But Sydney's St Vincent's Hospital and the Victor Chang Cardiac Research Institute have developed a technique which means hearts which had been still for 20 minutes can be resuscitated, kept beating and transplanted into a patient.

So far three people have received hearts in this way, with two recovering well and the third and most recent recipient still requiring intensive care.

"They are the only three in the world," surgeon Kumud Dhital, who is an associate professor at the University of New South Wales in Sydney, told AFP.

"We know that within a certain period of time the heart, like other organs, can be reanimated, restarted, and only now have we been able to do it in a fashion whereby a heart that has stopped somewhere can be retrieved by the transplant team, put on the machine... and then (surgeons can) transplant it."

The technique involves donor hearts being transferred to a portable machine known as a "heart in a box" in which they were placed in a preservation solution, resuscitated and kept warm.

All three patients have received hearts which came from different hospitals, with the organs kept beating during transport times of between five and eight hours.

Peter MacDonald, medical director of the St Vincent's Heart Transplant Unit, said it was likely that the first heart transplants ever performed in the 1960s used organs that had stopped beating. Three more had since been done with children.

"There have been no adult heart transplants from so-called DCD (Donated after Circulatory Death) donors since the very first ones done in the 1960s," he told AFP.

But in all previous cases, the donors and recipients had been in the same hospital.

"What we have done is developed a technique which enables us to firstly resuscitate hearts from a DCD donor and then have a capacity to transport that heart from the donor hospital wherever that donor hospital is ... to St Vincent's to enable it to be transplanted," he said.

"Where we will claim a world first is we have been able to do this in a remote hospital and transport it to St Vincent's.

"No one else has done that or attempted it. That's never even been contemplated before with a DCD heart."

### **'You see the heart starting to beat'**

Executive director of the Victor Chang Institute Bob Graham said it was possible to watch the heart revive in the portable machine which involves connecting the donor heart to a sterile circuit where it is kept beating and warm.

"Absolutely, you see the heart starting to beat again," he told the Australian Broadcasting Corporation.

Graham said the preservation solution used in the console allowed the heart to be more resistant to the damage done to it when it had stopped beating and was deprived of oxygen.

He said the technique will mean that surgeons in Australia, where the definition of death is brain death, will be able to do 20 to 30 percent more transplants.

"In addition we'll be able to tell whether the heart is worth transplanting, because we can look at the function on the console before we transplant it," he said.

He said in countries where the definition of death is heart death, the implications could also be dramatic.

"This will potentially open up heart transplantation in countries like Japan, Vietnam and other places where the definition of death is heart death, not brain death," he said.

Michelle Gribilas, the first patient to receive one of the three hearts, said she was very sick before her operation but now felt like "a different person altogether".

The second recipient, Jan Damen, who had the surgery about two weeks ago, said he felt "amazing".

"I'm not religious or spiritual but it's a wild thing to get your head around," he said.

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