

Scientists unveil new method to create bioartificial organs

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Spanish scientists on Tuesday presented a new technique to create bioartificial organs for transplant using stem cells which they said will vastly reduce the risk of rejection of the donated organ.

The technique involves "stripping" a donated heart, liver or other organ which is deemed unsuitable for donation of their cells, leaving just a "scaffold", Francisco Fernandez-Aviles, chief cardiologist at Madrid's Gregorio Maranon hospital told a news conference.

Stem cells from the patient are then applied to this framework to re-grow the organ which will share their DNA, thus making it more acceptable to their body.

Doctors will be able to carry out transplants involving organs that have been re-generated using this technique in five years time at the earliest, said Fernandez-Aviles.

"This will put an end to two problems: the lack of donors or organs suitable for transplant and the rejection of transplanted organs by the patient," he said.

The hospital has eight heart "scaffolds" ready for use with this technique and it hopes to partially re-grow one heart using stem cells by the end of the year.

Science Minister Cristina Garmendia said the hospital "has the first lab

in the world dedicated to producing bioartificial organs for transplant using [adult stem cells](#)."

Three years ago the hospital became the first in the world to use [stem cells](#) from a patient's fat tissue, extracted through liposuction, to treat his heart.

Massive investment has been directed into stem-cell research, driven by hopes that immature, pre-cursor cells can be prompted into becoming specific adult cells for the heart, brain and so on.

Spain has become a world leader in organ donation since it set up a network of transplant coordinators in 1989 at all hospitals in the country which closely monitor emergency wards to identify potential donors.

When they learn of a death, they tactfully talk to the grieving families to get permission to use the organs to help save the lives of others.

Only about 15 percent of families approached in Spain refused consent for [organ donation](#), a huge drop from the 40 percent who refused in the 1980s before the system was set up.

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