

MEDIA RELEASE



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HOPE FOR HEART FAILURE PATIENTS THROUGH ADULT STEM CELL BREAKTHROUGH

A Sydney academic has won a prestigious grant of \$100,000 to support landmark research using adult stem cells and 3D bioprinting to help patients with heart failure.

University of Technology Sydney biomedical engineer, Dr Carmine Gentile is this year's winner of the Catholic Archdiocese of Sydney adult stem cell research grant, which has been offered on nine occasions since 2003.

Dr Gentile and his team of researchers from UTS and the University of Sydney have been using a 3D bioprinter to generate personalised heart patches using stem cells generated by the patient's own body, including from skin biopsies and blood samples. The healthy cells would then be transplanted directly back into the patient's heart to help regenerate it.

Dr Gentile said he was greatly honoured to receive the grant which would help his team cover the high cost of producing personalised bioinks and in conducting more thorough testing over coming months. He believes the project highlights the long-term benefits which adult stem cell research has over that involving embryonic stem cells.

"Besides serious ethical issues concerning the use of embryonic stem cells, there is also a serious risk that the embryonic cell could be rejected by the patient's body. This is not the case with autologous adult stem cells because they're taken from the patient themselves", Dr Gentile said.

"Heart disease is the leading cause of death for Australians. For many of these patients the gold standard treatment at the moment is a heart transplant, which involves finding a suitable donor following a long waiting list. If transplanted, a donor heart carries with it a significant risk of failure as well. But we believe our research could offer a real, long term alternative to heart transplants for patients with heart failure", he added.

The Archbishop of Sydney, Most Rev Anthony Fisher OP has congratulated Dr Gentile and his team on the grant, saying the project demonstrates first-hand the power of adult stem cell research to shape medical breakthroughs.

“Not only is this a more responsible approach which shows respect for the great gift of each and every human life, but it also ultimately leads to better outcomes. There are less complications involved in transplanting cells from an individual’s own body than using cells which result from the destruction of a human embryo”, Archbishop Fisher said.

“If we can potentially save lives through tackling one of Australia’s most pressing health challenges- that of heart failure- through ethically responsible research projects like this one, then future generations will ultimately reap the rewards”, he added.

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