Accelerating regenerative medicine using stem cell therapies

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BIO
Professor Trounson was President of Californian Institute for Regenerative Medicine (2007-2014), the Californian state’s $3 billion stem cell agency driving research in stem cell biology and facilitating the translation of stem cell discoveries into clinical therapies. He founded the National Stem Cell Centre (2002-2003) and was the founding Director of the Monash Immunology and Stem Cell Laboratories at Monash University (2004-2007).

Professor Trounson was a pioneer of human IVF in the 1980s and led the team for discovery of human embryonic stem cells (ESCs) in the late 1990’s. In the 2000’s his work was focused on directing differentiation of human ESCs introducing reporter genes for lineage direction.

RESEARCH
The potential of stem cells to contribute to therapies for a broad range of conditions in regenerative medicine is in the process of realisation. Currently there are several thousand trials involving adult cells including bone marrow cells, fat derived cells, skin cells and various subtypes of mesenchymal stem cells. This first wave of cell therapies are likely to have a relatively high failure rate because in many cases the mechanism of action is speculative or unknown. A second wave of clinical studies are now rapidly evolving that have sound scientific bases that are likely to be very effective. Some are based on the use of pluripotent stem cells (embryonic stem cells or induced pluripotent stem cells), others include genetically modified cells that have curative properties and neural stem cells that appear effective in neural regeneration.

These trials include new ways of eliminating inoperable cancers, curing HIV/AIDS and blindness, correcting Type I diabetes and spinal cord, cardiac and stroke injury repair, and reversing genetic diseases such as sickle cell disease and β thalassemia.

PROFESSOR CHEV KIDSON (1932-2014)
Professor Chev Kidson was the fourth Director of the Queensland Institute of Medical Research (now QIMR Berghofer Medical Research Institute) from 1978 to 1990. Professor Kidson’s vision was for the Institute’s research to contribute to issues of global disease, taking a particular interest in conditions afflicting the developing world. Professor Kidson came to the Institute following his role as Foundation Professor of Medical Biochemistry at The University of Queensland.