

Ethical stem cell update

Stem cells, unlike ordinary human cells, have the ability to renew themselves and to form or change into different cell types needed by the human body: skin, muscle, liver, brain cells, heart tissue etc.

Stem cells could be used to replace tissue destroyed by conditions such as Alzheimer's disease, heart disease, diabetes, spinal cord injury and Parkinson's disease.

Many well known scientists have stated that stem cells taken from embryos have greater potential than adult or other ethically derived stem cells for transforming into the cells needed to repair damage in people with disabling conditions. They base this claim on the fact that early embryonic stem cells give rise to all the tissues in the body, and are thus "totipotent" or capable of generating all cell types.¹

However, in addition to the unethical nature of embryonic stem cell research, there are also practical reasons for preferring stem cells from these ethical sources. Even in very small numbers it has been found the embryonic stem cells, including those derived from cloned embryos for "therapeutic" cloning, generate tumours called teratomas or teratocarcinomas which develop quickly and are potentially lethal. Indeed it is a requirement for these cells that they generate these tumours, in order to demonstrate that they are genuine embryonic stem cells, however they are derived.²

Even some scientists who are in favour of embryonic stem cell research and treatments have admitted that "*large hurdles still need to be overcome to ensure safety and efficacy of embryonic stem cells.*" They go on to say that "*a single embryonic stem cell line could be used for many hundreds, if not thousands of patients, exponentially amplifying the potential risk of disease transmission...*"³

The truth, however, is that reports of the great potential of ethical adult derived stem cells have been appearing regularly in both the medical and mainstream press for many years.

It is crucial that pro-life people know the truth about ethical stem cell research. Once we know that ethical stem cell research is **already** providing treatments and potential cures, we can more easily explain to others that embryonic stem cell research is both unethical and unnecessary.

¹ "The Basics about stem cells" by Maureen L. Condit. First Things. January 2002

² Hwang, W.S. et al., (2004). *Sci.* **303**:1669-1674. "Evidence of a Pluripotent Human Embryonic Stem Cell Line Derived from a Cloned Blastocyst."

³ Braude, P., Minger, S., Warwick, Ruth M. "Stem cell therapy: hope or hype?" *BMJ* 21 May 2005

Three amazing cases using ethical stem cells!

Parkinson's Disease

Have you heard of the successful treatment of this disease using the patient's own stem cells.⁴ **Mr. Dennis Turner, of San Clemente, California USA** had Parkinson's disease for five years, and was affected by increasing rigidity and tremor. In an operation neural stem cells were removed from his brain while he was still awake. The doctors grew the cells in the laboratory and after several months they had about six million cells, which were then injected back into Mr. Turner's brain in March 1999.

Almost immediately there was a reduction in his symptoms, and after a year, total clinical scores for his physical ability improved by 83%. His scores improved by 88% when he stopped taking medication, with significant improvement in muscle rigidity and control of tremor. Three years after the treatment he had become "essentially free of almost all symptoms of Parkinson's disease."⁵

Heart disease

The case of Ian Rosenberg shows what can be achieved using an ethical source of stem cells in treating heart disease. He had a massive heart attack 25 years ago, and by the age of 67, the cocktail of tablets he had been taking started to lose their effectiveness. He says "*I only had months to live. I couldn't even walk up two steps – not two flights, two steps.*"

He had his own stem cells taken from his bone marrow and injected into a vessel feeding his heart in 2004 at the Johann Wolfgang Goethe University Hospital in Frankfurt, and over the next couple of months he began to recover. He returned to playing golf, and took a trip to Venice, the first time for many years that he had not needed to use a wheelchair at the airport.⁶

Spinal Cord injury

In December 2004 it was reported that Kim Gould, a British woman who was paralysed in a riding accident, had regained some movement after taking part in a pioneering trial in which stem cells were transplanted from her nose into her spine. Following the treatment, undertaken by Dr. Carlos Lima of the Egaz Moniz Hospital in Lisbon, Portugal. Dr. Lima says "All of our patients have some kind of recovery. We have no doubts about sensory recovery and some voluntary motor recovery. They move and feel below the lesions [area of injury] as never before. And there is even some bladder and bowel control recovery." Mrs. Gould can now crawl and lift each leg to move it forwards. She has regained some sensation in her legs, and can stand and make some progress with calipers and a walking frame.⁷

⁴ Levesque M.F, Neuman T. "Autologous Transplantation of Adult Human Neural Stem Cells and Differentiated Dopaminergic Neurons for Parkinson Disease: 1 Year Postoperative Clinical and Functional Metabolic Result" Abstract of paper given at the 70th Annual Meeting of the American Association of Neurological Surgeons. 8 April 2002

⁵ Interview with Dr. Michel F. Levesque on "Autologous Adult Stem Cell Transplantation" *Grassroots Connection* 4 December 2002

⁶ "Don't go breaking my heart" by Lisa Melton. *New Scientist* 25 September 2004

⁷ "Stem cells help paralysed woman to move" by Roger Highfield. *The Daily Telegraph*. 6 December 2004