

## Recent Advances in Adult Stem Cell Research (March 2009)

### Bulletin Inserts

“Converting ADULT Stem Cells Shows Promise for Parkinson’s,” *The New York Times*, March 6, 2009. In the March 6<sup>th</sup> issue of the New York Times, it was reported that researchers at the Whitehead Institute in Cambridge, Mass., have converted skin cells from people with Parkinson’s disease into the general type of neuron that the disease destroys. The new approach, though it requires further work, would in principle allow the brain cells that are lost in Parkinson’s to be replaced with cells that carried no risk of immune rejection, since they would be the patients’ own. Scientists said that the method worked in five patients whose skin cells were transformed in the test tube into neurons that produce dopamine, a chemical that transmits messages between neurons in certain regions of the brain. It is the loss of dopamine-producing nerve cells that leads to Parkinson’s symptoms, which can include muscle rigidity, tremors and slowed movement. Dr. Anders Bjorklund, a pioneer in using cell therapy to treat Parkinson’s, called the Whitehead team’s work “an important new step” in the development of the cell reprogramming technology, although more work is needed. The Catholic Church supports ADULT Stem Cell Research.

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“Chinese Stem Cell Therapy from Umbilical Cord Blood Helps Girl See,” *CBS News*, March 10, 2009. On March 10<sup>th</sup> CBS News reported that a blind Colorado girl who went to China for experimental stem cell treatments which have radically improved her vision -- she's now taking driving lessons. Macie Morse was born with optic nerve hypoplasia, meaning her optic nerve didn't develop all the way. The only way to repair it was to grow more of the nerve using umbilical cord stem cells. She and her mother traveled all the way to China for an experimental treatment. For 6 weeks Morse received injections of cord stem cells and acupuncture to stimulate the cells. Gradually, they took hold and began growing the optic nerve Morse was missing. "I saw snow fall for the first time," she told CBS4's Boyd. The Catholic Church fully supports ADULT stem cell research.

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“Multiple Route Bone Marrow ADULT Stem Cell Injections Show Promise To Treat Spinal Cord Injury,” *ScienceDaily*, March 28, 2009. On March 28<sup>th</sup>, 2009 Science Daily reported about a study conducted by DaVinci Biosciences, in collaboration with Luis Vernaza Hospital in Ecuador. The study demonstrates that administering ADULT autologous bone marrow derived stem cells via multiple routes is feasible, safe, and most importantly, improves the quality of life for both acute and chronic spinal cord injury (SCI) patients. The study documents eight spinal cord injury patients (four acute and four chronic) who experienced varying degrees of improvement in their quality of life, such as increased bladder control, regained mobility and sensation. Most importantly, the study demonstrated no adverse effects such as tumor formation, increased pain, and/or deterioration of function following administration of autologous bone marrow derived stem cells. The study published in *Cell Transplantation*, which used stem cells derived from the patient’s own bone marrow, documents the restoration of significant movement, sensation, and bladder function in patients suffering from a spinal cord injury. The Catholic Church supports ADULT Stem Cell Research.

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“ADULT Stem cells help foot bones heal,” Reuters (India), March 6, 2009 Reuters Health recently reported that researchers used the bone-matrix/stem-cell product in 23 patients who had operations involving foot and ankle bones and that failed to knit. Medical conditions often associated with "non-union" of bones, such as diabetes and kidney disease, were common among the study group. Bone union and healing was achieved in 21 of the 23 patients, to the extent that they were able to walk in regular shoes with little or no pain 6 months or more after cast removal. An implant consisting of bone 'scaffolding' containing ADULT stem cells can promote bone healing in patients who have undergone foot and ankle operations, a new report shows. While the findings are encouraging, they need to be confirmed with a formal clinical trial. The Catholic Church supports ADULT Stem Cell Research.

Adult Stem Cell Research Shows Further Insulin Independence for Type 1 Diabetes Patients Washington, DC (LifeNews.com) -- New research using ADULT stem cells is showing further insulin independence for Type 1 diabetes patients. The study, led by Richard Burt of Northwestern University's Feinberg School of Medicine in Chicago, is the second in the last two years to show significant progress in diabetes using the noncontroversial ADULT stem cells. It showed patients receiving injections with ADULT stem cells were able to go as long as four years without having to rely on insulin shots. In a new paper published in the Journal of the American Medical Association, Burt and his colleagues show how the majority of patients with type 1, or juvenile, diabetes who underwent a certain type of ADULT stem cell transplantation became insulin free. Several became insulin free for more than three years, with good glycemic control, and also increased C-peptide levels, an indirect measure of beta-cell function, according to the report they published in the April 15 issue of JAMA. A previous study found that the use of ADULT stem cells in 15 patients with newly diagnosed type 1 diabetes resulted in the majority of patients becoming insulin free during the follow-up, which averaged about 19 months. The scientists used HSCT, hematopoietic stem cell transplant, which relies on a patient's own blood stem cells, and involves the removal and treatment of the stem cells and their return to the patient by intravenous injection. Patients remained continuously insulin free for an average time of 31 months -- with a range of 14-52 months. Full News Story at LifeNews.com <<http://www.lifeneews.com/bio2824.html>> The catholic Church supports ADULT Stem Cell Research.

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