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# The Stem Cell Research Report

Current News About  
Adult, Embryonic,  
and Cord Blood Stem  
Cell Research

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## Pluripotent Stem Cells Derived from Mouse Skin Cells

Scientists at an independent institute affiliated with the Massachusetts Institute of Technology announced on June 6 that they had reprogrammed mature mouse skin cells, transforming them into cells that are “indistinguishable from embryonic stem cells.”

The reprogrammed skin cells were pluripotent and exhibited all of the same criteria that define embryonic stem cells, even germline transmission, i.e., the ability to give rise to live mice. According to lead researcher Dr. Rudolf Jaenisch of the Whitehead Institute for Biomedical Research, this ability is the “final definitive proof that these cells can do anything a traditionally derived embryonic stem cell can do.”

The research results, published in the June 2007 issue of *Nature*, confirmed the March 2006 findings of Dr. Shinya Yamanaka of Japan’s Kyoto University. Yamanaka’s approach also was independently confirmed by a team of scientists from the University of California–Los Angeles.

The technique does not require the use of eggs, and no embryos were created or destroyed in the process. However, many technical hurdles and threats of health risks will have to be overcome before this work can be translated to human beings. ■

## Bone Marrow Stem Cells May Improve Spinal Cord Injuries

Significant improvements were seen in 25 patients who participated in a clinical trial to assess the effectiveness of implanting autologous bone marrow stem cells into patients with spinal cord injury.

The findings were presented at the 13th Annual Meeting of the International Society for Cellular Therapy by Dr. Luis Geffner, director of the stem cell program at the Junta de Beneficencia de Guayaquil in Ecuador.

Autologous bone marrow stem cells are cells extracted from the patients’ own bone marrow.

All of the patients in the study demonstrated improvements in sensitivity, motility, and bladder sensation, including the ability to control sphincters, erection, and ejaculation. A number of the patients regained the ability to walk with braces or crutches. No adverse event was observed.

“These preliminary results, while encouraging, must be interpreted cautiously and prudently,” Dr. Geffner said, “and we must continue examining the benefits of surgically implanted autologous bone marrow stem cells to patients with spinal cord injuries.”

Pre-clinical trials for this study were conducted by PrimeCell Therapeutics of Irvine, Calif., a company devoted exclusively to developing pluripotent adult stem cells. ■

## Delaware Assembly Defeats Embryonic Stem Cell Bill

By a landslide 30–7 vote, the Delaware General Assembly defeated Senate Bill 5, which would have authorized the use of human embryos in medical experiments. The vote came just a few hours before the General Assembly adjourned for the year.

Opponents of the bill stated that Americans are overwhelmingly opposed to embryonic stem cell research when they realize that such research requires the killing of a human embryo. Moreover, Delaware attorney Stephen Jenkins added that, in light of the June announcement that skin cells had been reprogrammed to an embryonic state, embryonic stem cell research is no longer necessary. ■

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# American College of Pediatricians Calls for Immediate End to Embryonic Stem Cell Research

“Every dollar spent on the failed and unnecessary process of embryonic stem cell research steals resources away from the established utility and potential of adult stem cell research. This is fiscally irresponsible and medically unconscionable.” So says Dr. Michelle Cretella, a Fellow of the American College of Pediatricians.

In fact, on its website, the American College of Pediatricians calls for an immediate end to embryonic stem cell research and recom-

mends that public officials consider exclusively supporting research involving adult and other non-embryo stem cells.

Over the past ten years, research involving stem cells from placenta and adult blood, fat, various organs, amniotic fluid, and umbilical cord blood has led to the successful treatment of spinal cord injuries, heart failure, Parkinson’s disease, diabetes, certain forms of cancer, and dozens of other conditions in human trials.

Such has not been the case with any embryonic stem cell trial. Instead, catastrophe is often the result, as embryonic stem cells have produced the wrong tissue, formed tumors, and triggered immune rejection.

Dr. Cretella stated in an interview that human embryonic stem cell research takes human lives and “prolongs needless suffering by delaying the development of more promising adult stem cell treatments and cures.” ■

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