

Cambridge University Opens Stem Cell Research Center

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LONDON -- Cambridge University said Monday it will open a center for human embryonic stem cell research to develop treatments for currently incurable diseases such as diabetes and spinal cord injuries.

Researchers at the \$30 million Stem Cell Institute, described as the world's largest center for this research, said they hope to proceed to human testing within five years.

Roger Pedersen, professor of regenerative medicine at the university, said the institute would use the newest robotics to speed research.

"The mission is to deliver clinical benefits at the earliest possible date," Pedersen said.

Stem cells are master cells capable of becoming every kind of human tissue, and scientists believe they can be used to replace diseased cells in people suffering from spinal cord injury, diabetes, Parkinson's disease and other ailments.

Pedersen was formerly at the University of California, San Francisco, but left in 2001 after President Bush banned federally funded laboratories from doing research that involved the creation of any type of human embryo.

In contrast, Britain was the first nation to authorize the cloning of human embryos to produce stem cells for research. Last month, it opened the world's first national stem cell bank, which stores human embryonic stem cells among others.

Human embryonic stem cells, while controversial, are considered important by scientists because they can form all the cells in the body. Other types of stem cells are limited in their capacity -- blood stem cells can only form blood, for example.

"The coordinated effort on the part of the U.K. stem cell enterprise sets the U.K. aside as the place to do this research," said Pedersen. "It really makes the U.K. the leading country."

Pedersen said that research on stem cells is likely to lead to innovative cell transplantation therapies and a greater understanding of the regenerative capacity of the body.

"Stem cell research has a profound potential for treating currently debilitating diseases, such late-onset conditions as Parkinson's, Alzheimer's, diabetes, cancers, heart and blood diseases, and thus has the capacity to markedly improve the quality of life," he said.

Pedersen said the Cambridge institution will first undertake a deeper study of stem cells to increase understanding of their ability to become other body organs before tackling clinical trials.

The center will initially target juvenile diabetes and Parkinson's disease. Researchers selected those two diseases because both can be treated by injections of purified stem cells of just one type.

For diabetes, insulin-producing cells could be injected anywhere in the body and perhaps work for years. For Parkinson's disease, cells that produce dopamine -- the missing substance -- would have to be injected precisely into the brain but could help people walk and talk normally again.

The institute is backed by the Juvenile Diabetes Foundation and other charities as well as government funds.

The National Institute for Biological Standards and Control created last month stores and grows cells for distribution to researchers worldwide. The database is intended to enable fast research and ensure that all stem cells come from ethical sources.

It currently has two human embryonic stem cell lines -- collections of identical cells -
- and will also accept stem cells from fetal and adult sources.

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