



## Stem-cell advance welcomed in state

New finding may bypass the deadlock over using embryos

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All sides in the ethical and political debate over stem-cell medical science hailed as promising newly reported research on the potential of stem cells derived from amniotic fluid rather than embryos.

But the sides remain far apart on what implications the finding might have for policy decisions in Washington and Lansing.

Those opposed to embryonic stem-cell research said the report in the journal *Nature Biotechnology* about the amniotic fluid research offers a way around the ethical dilemma posed by research that results in the destruction of human embryos -- generally those unused by fertility clinics.

Current Michigan law, which is criticized by advocates for expanding stem-cell research, prohibits destruction of embryos for research. Ed Rivet of Right to Life of Michigan said he believes the new research "definitely could change the nature of the debate."

Stem cells derived from amniotic fluid appear to give hope "for the possibility of real cures," he said.

But proponents of embryonic stem-cell research said that hope shouldn't be used to foreclose the possibility of progress in other areas.

Dr. Sean Morrison, director of the University of Michigan's Center for Stem Cell Biology, said it is too soon to draw conclusions.

"Much more work will be needed, from this lab and others, before we understand the nature of cells and what can be done with them," he said. "Anyone who says this is an alternative to embryonic cells is drawing a conclusion that is not supported by data."

### **Another alternative**

Scientists said stem cells from amniotic fluid may open a third avenue of research that is less controversial than embryonic cells and more versatile than adult stem cells for those seeking to regenerate human tissue to replace diseased organs or treat disease.

The amniotic cells also are easier to work on in the laboratory than adult stem cells, the researchers said.

The new finding may lead to the use of amniotic cells by companies seeking to develop therapies for disease such as Parkinson's, Alzheimer's and diabetes. The amniotic cells are as capable as embryonic cells in forming fat, liver, nerves, blood vessels and other tissue, the researchers said.

"This is a third class of stem cell that is derived from the fetus and routinely available with amniocentesis," said Kenneth Chien, director of the cardiovascular disease program at the

Harvard Stem Cell Institute in Boston and a Massachusetts General Hospital cardiologist. "These cells are falling somewhere in between."

Amniocentesis, in which a needle is used to remove fluid from the womb for testing, is routinely used during pregnancy.

Embryonic stem cells are the first cells created after conception. Because they can turn into any other cell, scientists say they hope the cells one day may be used to help replace damaged or missing material in the brain, heart and immune system.

In contrast, adult stem cells are hidden in tiny numbers inside developed organs. The cells grow into other cell types only when the body needs them to replace or help repair the body part they're linked to. As a result, some stem-cell experts say, adult cells are unlikely to provide treatments for complex disorders such as Parkinson's.

Amniotic cells may be "one more alternative among the cells that can be used for this kind of research," lead researcher Anthony Atala said in a telephone interview last week. "Everything we have tried to date, we have been able to do."

Atala is director of the Wake Forest Institute for Regenerative Medicine in Winston-Salem, N.C.

### **More study urged**

Two Michigan proponents of stem-cell research said the developments are encouraging but that it's far too early to say what benefits could be derived from amniotic stem cells.

Dr. Steve Hinderer, specialist in chief at the Rehabilitation Institute of Michigan in Detroit, which is working with a Portuguese team to bring stem-cell surgery to Detroit for spinal cord repair, said the benefit of amniotic fluid is that "it avoids many of the ethical concerns" about embryonic stem cells.

"But it remains to be seen how much potential they have."

Bob Smith of Harrison Township, who in 2003 was the first American to go to China for stem-cell surgery, also hailed the development. But he said he feared it would give some people ammunition to convince the public there is no need to obtain stem cells from discarded embryos.

"We need them all," said Smith, a onetime Chevrolet salesman injured in 1999 while diving from his boat into Lake St. Clair. "We need to invest more in the whole field."

Smith, who was paralyzed from the chest down, has made significant progress, short of walking, since the procedure.

Liz Boyd, a spokeswoman for Gov. Jennifer Granholm, who has been at odds with the Legislature over Michigan's restrictions on research, also said the new finding is promising. But embryonic stem-cell research "still needs to go forward," she said.

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