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Treatments today or hope for tomorrow? Congressmen say adult stem cells offer both

Senators, celebrities make the wrong choice, ignore today's treatments, risk lives

Washington—The Senate is wasting time on alternatives to adult stem cell research, three House members said today. Congressmen Mike Pence (IN-06), Dave Weldon (FL-15), and Joe Pitts (PA-16) issued the following statement regarding efforts in the Senate to repeal the President's stem cell policy.

"We will hear from celebrities and Senators this week that this debate is between science and ideology – that destroying human embryos for research is necessary to cure a whole host of maladies from spinal cord injuries to Parkinson's Disease. But the facts suggest otherwise. To date, embryonic stem cell research has not produced a single medical treatment, where ethical, adult stem cell research has produced some 58 medical miracles. This isn't about science versus ideology, it is about what has been proven to work and what has not," said Congressman Pence.

"As a physician, I know first-hand the promise actual treatments give patients over empty hopes of a 'possible' treatment. Currently all embryo stem cell research is offering to people afflicted with diseases is an empty promise and it is irresponsible to ignore the treatments that are taking place today when Senators and celebrities talk about stem cell research," Congressman Weldon said.

"We support stem cell research. This isn't pro-science and anti-science, as some speaking today suggest. We just want to know why we should divert resources away from treatments that are saving lives today and spend it on research that might never treat anyone for anything. These celebrities and Senators are off-base. Their claims, both about their science and about those who oppose them, are misleading and offer false hope to hurting families," said Congressman Pitts.

In theory, embryonic stem cells could one day be used to treat diseases. In reality, they have treated none and have made very little progress in research done on animals.

In contrast, stem cells can be found without destroying human embryos. Stem cells are currently being found in human tissue like: umbilical cord blood, fat, teeth, hair follicles,

spleen, nasal cavity, bone marrow, and many others. These stem cells have been used to treat fifty-eight diseases including Parkinson's Disease and diabetes.

Adult stem cells treating diabetes

Using adult stem cells, Denise Faustman at Harvard has reversed diabetes in an animal model. Her work, rejected by the Juvenile Diabetes Research Foundation (JDRF), has been approved by the FDA for human clinical trials.

Recent studies have shown that adult islet cells can be donated from live donors for patients, opening up many more possibilities for transplants. Using this technique, a mother donated cells for her diabetic daughter, alleviating the diabetic symptoms (Matsumota S et al., "Insulin independence after living-donor distal pancreatectomy and islet allotransplantation," *The Lancet*, 365, 1642-1644, 7 May 2005.)

Patient's own stem cells treat Parkinson's

Dennis Turner suffered with Parkinson's Disease for fourteen years. After years of medication and watching his condition worsen, he received a treatment using his own stem cells. In 2004, he told a Senate committee that he has experienced a significant improvement in his condition as a result of the treatment.

Five Parkinson's patients in another study experienced a 61 percent increase in physical coordination and decrease in symptoms as the result of the injection of a protein (Gill SS et al. "Direct brain infusion of glial cell line-derived neurotrophic factor in Parkinson disease." *Nature Medicine* 9. May 2003. 589-595).

Adult stem cells form other types of tissues

Supporters of destroying human embryos for stem cell research claim that this research is better than adult stem cell research. However, recent advancements show that adult stem cells exhibit many of the same characteristics and properties as embryonic stem cells, including the ability to adapt into different types of cells (pluripotent).

Dr. Douglas Losordo at Tufts University showed that a type of bone marrow stem cell can turn into most tissue types, and can regenerate a damaged heart. He said that his team's research has led him to believe that "these newly discovered stem-cells may have the capacity to generate into most tissue types in the human body" (Yoon Y-s et al., "Clonally expanded novel multipotent stem cells from human bone marrow regenerate myocardium after myocardial infarction", *Journal of Clinical Investigation* 115, 326-338, February 2005).

Additionally researchers have found that:

- ✓ Nasal stem cells could develop into heart cells, liver cells, kidney cells, muscle cells, brain cells and nerve cells (Murrell W et al., "Multipotent stem cells from adult olfactory mucosa," *Developmental Dynamics* 233, 49-515 June 2005).
- ✓ Pancreatic stem cells can differentiate into cells like: muscle cells, neurons, insulin producing cells (Kruse C et al., "Pluripotency of adult stem cells derived from human and rat pancreas," *Applied Physics A*, 1617-1624, November 2004).

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