

COLUMBIA POLITICAL UNION presents:

THE DEBATE OVER STEM CELL RESEARCH

In the November election, California voters decided to bypass the strict federal restrictions on stem cell research and approved Proposition 71, the *California Stem Cell Research and Cures Initiative*, a plan that allocates three billion dollars to stem cell research in the next decade. The sudden flood of funding will, by most accounts, make California the world center for stem cell research. The vote in California was just one of many recent developments in the stem cell dispute. The presidential campaign and the recent death of stem cell research advocate actor Christopher Reeve have brought the issue to the forefront of political debate.

WHAT IS STEM CELL RESEARCH?

The term “stem cell” applies to two forms of research. One type, somatic or “adult” stem cell research, involves harvesting undifferentiated cells from various post-natal tissues present in both grown adults and infants. The other type, embryonic stem cell research, uses blastocysts, which are cells drawn from a multicellular three to five day old embryo. While research on adult cells has generated much less controversy, most scientists believe it offers fewer medical possibilities.

According to specialists Mehmet Oz and Abeel Mangi, “from a purely scientific standpoint, embryonic stem cells offer us greater opportunities than adult stem cells do. These include the chance to study development of organisms and the processes that lie behind appropriate growth, maturation, and senescence.”^{ib} The premise upon which all stem cell research rests is the idea that certain cells have the capability to develop into other types of cells. Embryonic stem cells are predicted to have the potential of growing into multiple specialized cell types, while adult stem cells can only become up to several other types of cells, depending on the organ they came from. Thus, there is much to be gained by pursuing embryonic cell research, as it would allow scientists to rebuild damaged organs that do not repair naturally. Stem cell research may also further the understanding of cell differentiation, human genes, and genetic diseases. However, scientists do not yet know its full implications. The National Institutes of Health reports that there are no clinical trials in progress involving human embryonic stem cells, while scientists have undergone several hundred clinical trials with adult stem cells since the early 1970s.

THE ISSUE DEBATE

The core of the controversy over embryonic stem cell research is that the process of extracting stem cells destroys an embryo that would have the potential for human life. Those who oppose stem cell research believe that it is ethically wrong to destroy anything that has become human. Proponents argue that the benefits of stem cell research actually support human life by helping cure illness. Stem cells have become one of the most politicized issues in the U.S. today—discussed in all three presidential debates. Much of the public controversy surrounds whether or not the federal government should pay for stem cell research.

One major argument holds that most embryonic stem cell research should not be publicly funded. Proponents of this view argue that embryonic stem cell research is unethical. They contend that the extraction of stem cells, which destroys the embryo, takes lives and maintain that taxpayers should not have to spend their money on science they find immoral. President Bush has expressed support for this argument. He said on August 11, 2004, that in his first term, he has worked toward “balancing the ethics and the science [of stem cell research],” by allowing federal support for roughly 70 embryonic stem cell linesⁱⁱⁱ (22 of which are active today) that were produced before he was in office and banning further funds.^{iv} His administration has agreed to allocate money for adult stem cell research because it lacks the moral implications present in the use of embryonic cells.

Supporters of stem cell research contend that President Bush's plan is not a balanced solution. They say that the 22 active embryonic stem cell lines are poorly suited for extensive future research, largely because the ban was not foreseen when the lines were created and several of them have already become depleted or non-viable. Some proponents have adopted the traditionally conservative phrase, "pro-life," arguing that supporting stem cell research is supporting the lives that will be saved from such technology. Advocates also state that the origins of most embryonic cell lines come from excess embryos created as a result of in-vitro fertilization that are intended to be discarded anyway, thereby mitigating the ethical dilemma.

STEM CELL RESEARCH OUTSIDE THE UNITED STATES

Controversy over stem cell research extends worldwide. Internationally, over 128 embryonic stem cell research lines have been created since August 9, 2004, some of better and some of worse quality than the 22 available in the US, but scientists fully or partially funded by the U.S. government are not permitted to use them. Countries have shown different views on stem cell research. The latest legal international development came from France, which has reversed its ban on stem cell research. In August, the French government allowed medical research on embryonic stem cells and in October, it allowed importation of embryonic stem cells from abroad to speed up development and increase research opportunities. Also, several Australian companies have united to launch a newly developed embryonic stem cell line, Mel-1, which will be available to international scientists. However, many other countries, such as Austria and Germany, have banned using stem cells in research altogether.

The international debate has moved into the UN, as the organization is currently working on a document on human cloning that will include provisions on stem cells.^v It is expected that in February 2005, the UN will release a non-binding declaration asking member nations to ban reproductive cloning but will not explicitly prohibit therapeutic cloning, such as that used for stem cell research. As expressed by Anders Lidén, a representative to the UN from Sweden (where stem cell use is allowed), for those considering stem cell research, especially that which uses embryonic cells, the issue poses "questions involving ethics, values and human dignity."^{vi} The debate remains in determining how to balance the potential for medical and scientific progress with methods that make many question whether their tax payments will provide for a process that violates their principles.

ⁱ Differentiation is used to define "specialization" of cells, i.e. unlike stem cells, there are heart tissue, lung tissue cells, etc. Stem cells are undifferentiated.

ⁱⁱ Mehmet C. Oz and Abeel A Mangi. Demystifying Stem Cells. *The Saturday Evening Post* Indianapolis:Nov/Dec 2004. Vol. 276, Iss. 6: (58-61,83)

ⁱⁱⁱ "lines" – defines cell cultures that can be grown indefinitely in a laboratory. Cells from the lines can be purchased for scientific research.

^{iv} <http://www.whitehouse.gov/news/releases/2004/08/20040811-6.html>

^v Cloning is a major related issue. The controversial relationship comes from the possibility to acquire stem cells by cloning embryos. South Korean scientists were the first to successfully clone an embryo, and derived its stem cell line in this way.

^{vi} <http://www.un.org/News/Press/docs/2004/ga3258.doc.htm>

The above was written by CPU staff members Jason Bello and Mariya Konovalova

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