

## CLARIFICATION OF STEM CELLS

**The media generally reports on stem cell research without distinguishing the two types, embryonic stem cells and adult stem cells.**

**EMBRYONIC STEM CELLS** are obtained from an in-vitro fertilized egg (zygote). Sometime between the 3<sup>rd</sup> and 6<sup>th</sup> day of life, the zygote is destroyed and the cells taken for research. I remind the reader that we were once a fertilized egg, a zygote, and were allowed to live.

**These embryonic stem cells are desirable to the researchers because they are young and not yet developed. They do not have a specific function and therefore can be reprogrammed into any type of cell in the body.**

**The ability of these embryonic stem cells to be reprogrammed into other types of cells gives them the name “pluripotent”.**

**In addition to the unethical manner in which these cells are obtained, by the destruction of a human embryo, there is a the serious problem of these cells having the potential of producing cancerous tumors called teratomas.**

**It is of great importance to note that all the research done so far utilizing embryonic stem cells has been performed only in animals, no human studies.**

**The reason for this restriction is the potential of embryonic stem cells to form the above mentioned teratomas and the additional possibility of rejection by the immune system.**

**Since there have been no human studies using embryonic stem cells in 30 years of research, embryonic stem cell research has produced no cures for human diseases!**

**ADULT STEM CELLS** are found in many tissues and organs of the body, such as brain, liver, fat, breast milk, teeth, hair, etc, and very importantly from bone marrow, cord blood, placenta, and amniotic fluid. Bone marrow cells especially have been successful in transplants for leukemias and other blood dyscrasias over many years.

**Adult Stem Cells are not pluripotent which means that they cannot be reprogrammed into other types of cells. e.g. a liver cell can only become a liver cell.**

**As people of life and as proven scientific fact, it is most crucial for us to know that adult stem cells have been used to cure 75-80 diseases without the need to sacrifice a human embryo.**

**In November of 2007, a Japanese researcher Dr. Shinya Yamanaka of Kyoto University and James Thomson of the University of Wisconsin simultaneously reported a method to reprogram skin cells into other types of cells of the body. These cells are called “induced pluripotent cells”. This discovery makes it possible to take the skin from an individual and reprogram it into another type of cell. These reprogrammed cells behave very much like human embryonic stem cells, having the ability to change into different types of cells.**

**This method of reprogramming skin cells has the following advantages:**

- 1. Makes available a pluripotent cell similar to an embryonic stem cell which negates the destruction of a human embryo.**
- 2. Eliminates the possibility of rejection because a person’s own skin is used.**
- 3. Removes the potential of the production of a cancerous tumor, a teratoma.**

**So, now there are THREE classes of stem cells!**

- 1. EMBRYONIC STEM CELLS THAT ARE PLURIPOTENT.**
- 2. ADULT STEM CELLS.**
- 3. REPROGRAMMED CELLS- INDUCED PLURIPOTENT ADULT STEM CELLS.**

**I believe it is worth repeating that in 30 years of research, there have been NO cures using embryonic stem cells. On the other hand, there have been 75-80 successful cures using adult stem cells.**

**An article in the highly respected New England Journal of Medicine in February 2008, validated that adult stem cells were working in 70 diseases.**

**Now with the advent of being able to reprogram skin cells there is great promise on the horizon for Adult Stem Cell research.**

**As Catholics, we hold all life to be sacred from conception to natural death. Therefore we vehemently oppose the destruction of the zygote to obtain Embryonic Stem Cells.**

**The end does not justify the means.**

**Add to this, the fact that there is NO sound scientific evidence to justify continuing to destroy innocent life!**

**Two years ago, the United States Catholic Conference of Bishops began sending to the Pro-Life Directors, titles of articles of successful studies using ADULT STEM CELLS both in animals and humans. The purpose was to document and furnish us with evidence to prove that there are alternatives to EMBRYONIC STEM CELL research. WE NEED NOT CONTINUE TO DESTROY EMBRYOS IN THE FACE OF THE POSITIVE SCIENTIFIC DATA!**

**These studies both in humans and animals are very impressive and have proved successful in varied diseases.**

**Allow me to name a few diseases that have been successfully treated in humans using ADULT STEM CELLS: Heart disease, diabetes, stroke, cerebral palsy, blindness due to optic nerve dysplasia, leukemia, tennis elbow, spinal cord injury, sickle cell disease, crohn's disease, lymphoma, muscular sclerosis, Parkinson's.**

**Although the media has always championed the need for embryonic stem cell research, the truth is only adult stem cells are curing diseases. It is estimated that more than 50,000 adult stem cell transplants occur annually world wide.**

**For a more extensive list of successful cures using ADULT STEM CELLS, log on to New Jersey Right to Life or St. Jude's Children's Hospital.**

**Another informative web site is [www.stemcellresearch](http://www.stemcellresearch).**

**With all the positive data available in the literature concerning the successes of adult stem cells, it is difficult for me to understand why President Obama has allocated more money for embryonic stem cell research and very little for adult stem cell research.**

**Lest we think that our respect for life makes us the only ones interested in ADULT STEM CELLS, let me introduce two well known people who have publicly expressed confidence in adult stem cell research.**

**Former Vice President Albert Gore. In April of this year invested 20 million dollars of his own money in a California research laboratory that is doing work with ADULT STEM CELLS only.**

**In April of this year, Dr. Mehmet Oz appeared on the Oprah Winfrey show with Michael J. Fox who has Parkinson's disease. At a certain point in the show, Dr. Oz made the statement that the debate over embryonic stem cells "is dead." Dr. Oz then turned to Michael and explained that one day cells from a piece of Michael's own skin would be reprogrammed to produce dopamine which in turn would cure his Parkinson's disease**

**The success of adult stem cells can be described as one of the greatest stories never told to the general public.**

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