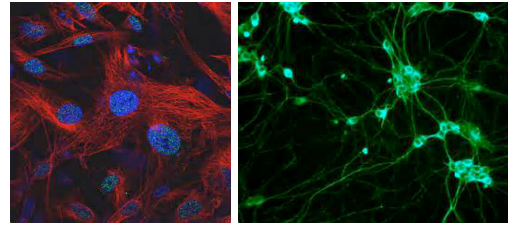


# The Ethics of Stem Cell Research

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**Abstract—** This paper is about the study of stem cells. A stem cell is an undifferentiated cell that has the potential to develop into cells that serve many different parts of the body. Many people in society believe that the altering of stem cells is very unethical in the embryonic stage. Some pros of stem cells include the ability to restore vision after a stroke along with

morally responsible and scientifically worthy.

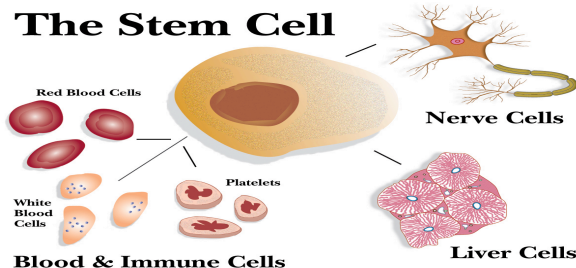


## I. INTRODUCTION

Stem Cells are blank cells that have the ability to develop into many different functions. All humans start out as one cell also known as a zygote. Some potential uses of stem cells can be to replace damaged organs or tissue. Also it can be used for research genetic defects in cells as well as testing new drugs in human cells. There are two type of stem cells which include embryonic and nonembryonic stem cells. Embryonic stem cells can give rise to any other type of cell. An adult stem cell come from developed organs and tissues in the human body. Adult stem cells do not present any ethical problems, however the embryonic stem cells are harvested through in-vitro fertilization, meaning that the egg is artificially fertilized in a lab. This causes ethical issues in the fact of artificially made cells.

## II. METHODS

Stem cells can be used as a potential source of cells for cell based therapeutics because of their ability to self-renew. The vision of the stem cell bioengineering lab is to develop a mechanism based platform for stem cell bioprocess development. Bioengineering processes are looking to develop cells that are capable of dividing and renewing themselves, also develop cells that are unspecialized and they must be able to choose different types of cells present in the body based on signals from their environments. This harvesting of the cells involves the destruction of the human embryo.



## III. RESULTS

In 2009 Federal regulations were put into affect. Stem cells are derived from an embryo that was created for purposes that were no longer needed. Along with this informed consent must be needed for the donation of the embryo. Financial funded research was only given for human stem cells that are

## IV. DISCUSSION

Stem cells can be used for treatment of bone, skin, and corneal diseases. Along with this stem cells have proven to be effective on cancer, multiple sclerosis, Parkinson's disease and duchenne muscular dystrophy. The cost of treatment for some of these can rise up to \$30,000. The length of treatment depending on the diseases can be around 8 weeks to a year for the full transplant of stem cells.

In conclusion, the ethics of stem cell research can be viewed from a variety of standpoints. With some believing that the destruction of the embryo is unethical and destroying human life. However, with the FDA approvals and the regulations put into affect there must be consent and there is no ethical issues regarding stem cells research and therapy.

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