

# Potential for human embryonic stem cells essay example

[Technology](#), [Development](#)



In the early stages of development, a human embryo has Pluripotential stem cells. Stem cells have the potential to divide and differentiate into specialized cells forming different body tissues and performing different functions. This coupled with their ability to self-renew gives stem cells wide applications in research and transplantation therapy. In his paper on "New potential for Human Embryonic Stem Cells", Gearhart notes that stem cells grown in culture can be derived from either the inner masses of blastocysts (ES) or from primordial germ cells (EG). Human ES cells have been isolated and are currently the major focus of research work.

Studies in embryogenesis, gene function, and development using stem cells in mouse have enabled modeling human genetic diseases and abnormalities in mouse. Gearhart points out various potential uses of ES cells such as; as renewable cells source for transplants, in vitro studies of human embryogenesis including abnormal development, human gene discovery, and in drug and teratogen testing. Tissue transplantation therapy has wide applications in neurodegenerative disorders, diabetes, spinal cord injury, and hematopoietic repopulation. ES cells are especially attractive for transplants as they can prevent immunological tissue rejection.

However, before the full potential of Human Embryonic Stem Cells can be realized, several challenges need to be addressed. This includes definition of conditions for deriving human ES cells efficiently and also public perception on human embryo research. Currently, stem cell research is sponsored by private and corporate entities as federal laws ban the use of federal funds in the derivation of ES cells. Gearhart calls for the reassessment of federal laws

to allow funding ES cell research with appropriate peer review and oversight due to the biomedical potential of ES cells.

## **Works Cited**

Gearhart, John. “ New Potential for Human Embryonic Stem Cells”. Science 6 Nov. 1988. Web.

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