Human embryonic stem cell (HESC) research is a recent development in the field of medicine. Human embryos contain versatile stem cells that can be manipulated to become any type of cell. They are thought to have endless possibilities in the field of medicine. Scientists believe they may be able to help treat or even cure degenerative diseases that are currently incurable, such as diabetes, Parkinson’s disease, congestive heart failure, and cancer. Given these benefits, stem cell research should not only remain legal but also should continue to be funded by the United States federal government.

Human embryonic stem cells are critical in the future of the treatment of degenerative diseases. According to medical definitions presented by the Mayo Clinic, stem cells are the basic cells of the human body which can divide into daughter cells, which turn into “new stem cells (self-renewal) or become specialized cells (differentiation) with a more specific function” (Mayo Clinic Staff). There are several different types of stem cells, but the most commonly researched is the embryonic stem cell. Embryonic stem cells come from a blastocyst, an embryo that is three to five days old and has about 150 cells. They are what the medical community calls pluripotent stem cells, meaning they are versatile and can multiply easily. Embryonic stem cells can be taken from aborted fetuses, but it is much more common to collect them from embryos created in in vitro fertilization clinics. Because so many embryos are made, there are almost always extra embryos left over. The people for whom the embryos were made can decide whether to destroy the extra embryos or to donate them to stem cell research. Other stem cells include adult stem cells which are found in adults’ bodies in small numbers.

Adult stem cells are not versatile, as they usually cannot change into specialized cells. Scientists have recently begun to change adult stem cells into more versatile cells, called induced pluripotent stem cells, but researchers do not know if using these induced cells from adults might have harmful side effects in humans (Mayo Clinic Staff). Stem cell therapy, also known as regenerative medicine, can help to repair damaged cells or organs. While organ transplants are often a better way to help a patient, there is a limited supply of organs available. Stem cells are manipulated to become different types of cells, such as heart cells or nerve cells. When they are implanted into the damaged area, the healthy stem cells can work to repair the hurt tissue around them. Stem cell therapy to regrow bone marrow, used to treat leukemia and other blood-related diseases, is being applied today.

Because of its importance in the future of medicine, HESC research needs funding. The Alliance for Aging Research argues in its article “Embryonic Stem Cell Research to Save the Lives of Millions” that embryonic stem cell research, despite the moral ambiguity of using embryos, needs to be federally funded, not developed exclusively by private companies, in order to support the academic research that is necessary to unleash the full potential of embryonic stem cells. After explaining the vast benefits, the author contends that curtailing government funding for stem cell research could be devastating for its future. While the private sector would still be able to carry it out, public universities would not. The author quotes Dr. James Thomson as saying, “The best minds in this research are still in academia, not industry. . . . To exclude the best minds in the whole field would set back the effort tremendously” (“Embryonic Stem Cell”). The research would also be much less transparent if it were privately funded. If funded by the government,
the people of the United States would be able to
direct the research in the path they thought to be
most important, but the same would not be true with
private funding (“Embryonic Stem Cell”). This
article nearly perfectly embodies my viewpoint on
HESC research. Clearly, HESC research has the
potential to have immense health benefits for
currently incurable diseases. In addition, although
HESC research could progress while limited to the
private sector, the most effective and transparent
way to continue the research would be in public
institutions of higher education and research. Federal
funding would allow the most intelligent people in
medicine to research applications of embryonic stem
cells and then to integrate that into medical
treatment.

The main concession of the Alliance for Aging
Research to critics of HESC research is that it could
be considered abortion because it intentionally
terminates an embryo’s life. However, few embryos
would be affected. The author glosses over the
negative effects of HESC research, but I agree with
what they are saying. Because embryonic stem cells
can divide indefinitely, “a small number of fertilized
eggs could produce all the stem cells researchers will
ever need” (Alliance for Aging Research). The death
of embryos, while unfortunate, has such great life-
saving potential. In addition, stem cells are taken
from embryos created outside the human body in
laboratories. Stem cells extracted from a very limited
supply of these embryos could potentially save or
improve millions of people’s lives.

I believe it is moral to carry out HESC research
because of its potential benefits in medicine. John
Harris argues in “Stem Cells, Sex, and Procreation”
that stem cell research is ethical. After explaining
the benefits of stem cell research, he states his
“principle of waste avoidance”: if good can be done
with existing resources, it should be done if the
resources would be wasted otherwise. In this case,
he is referring to frozen embryos from infertility
clinics and aborted fetuses. Often, doctors and/or
donors have to decide whether to let unused frozen
embryos, which were intended for in vitro
fertilization, die or whether to use them for research.
He believes it is unethical to waste the embryos
when they have such a great life-saving potential. He
also believes that once a fetus is aborted, it is
immoral to let the stem cells present go to waste for
the same reason. I agree that embryos left over from
in vitro fertilization should be used. The frozen
embryos will die eventually, so what harm is done if
they expire sooner rather than later? If their stem
cells are extracted, the embryos can be put to good
use, but the stem cells will simply be wasted if the
embryo is never implanted in a woman’s uterus. In
order to appease those against using embryos,
however, the parents of the embryos should be able
to choose whether to donate the extra embryos to
HESC research or let them die a natural death. I
believe that it should not be legal to use aborted
fetuses for HESC research, however. If that were
allowed, there would be a potential that people
would abuse the system by conceiving a baby for the
sole purpose of aborting it and extracting its stem
cells. Using aborted fetuses for HESC research
would compromise the importance of human life.

James Delaney wrote “Embryo Loss in Natural
Procreation and Stem Cell Research: How the Two
Are Different” in direct response to Harris’ “Stem
Cells, Sex, and Procreation,” focusing on the
Catholic perspective. He explains that in vitro
fertilization is unacceptable under the Catholic belief
because it intentionally sacrifices or destroys some
embryos so that another may live. Because it is
immoral to destroy an embryo, such as through
abortion, it is therefore immoral to destroy embryos
by extracting their stem cells. For Delaney, it
follows that HESC research, despite its potential
benefits to medicine, is unethical solely because it
sacrifices an embryo. While I understand that it is
not ideal to sacrifice an embryo, I believe that the
benefits of HESC research greatly outweigh the
negatives. Very few embryos are needed in order to
sustain HESC research, so one single embryo could
eventually save or improve millions of lives. Is it
fair to say that the life of one three-day old embryo
created in a laboratory, not in a human uterus, is
more important than the lives of millions? If even
two people could be helped with one embryo, it
would be worth the unfortunate cost that extracting
stem cells causes.

Although there are great potential benefits that
could arise from HESC research, some believe it is
unethical. Dr. J.C. Wilke argues in “I’m Pro-Life
and Oppose Embryonic Stem-Cell Research” that
HESC research is immoral. He begins by explaining
his opinion on the difference between experimenting
on human tissue and human beings themselves. He
says that it is ethical to carry out research on human
tissue, but it is unethical to do the same on human
beings. Wilke reasons that an embryo is a human
being: human life begins when a sperm and an egg
unite, which he says forms a fertilized egg. They
become a blastocyst within a week, when they consist of several hundred cells. He elaborates on his opinion that an embryo is human: “At the first cell stage, you were everything you are today. You were already male or female. You were alive, not dead. You were certainly human as you had 46 human chromosomes.” An embryo, Wilke claims, is a human no matter what form it takes. For Wilke, when a frozen embryo is used for stem-cell research instead of being allowed to develop and die a natural death, it is “cut open” by a researcher, “thereby killing” the embryo in order to extract stem cells. I understand that Wilke is concerned with respecting the human body, but I do not believe his viewpoint properly achieves that goal. Although a blastocyst is a human genetically, the blastocysts involved in the HESC research debate have no potential to be a human being unless they are successfully implanted into a woman’s body where they could develop into the specialized cells that make up the human body. If the embryos are not used for HESC research, they will die a natural death in a laboratory. It follows that the blastocyst would never live out life as a human being or anything close to it, as it has not grown any semblance of organs.

Is the quality of life of a blastocyst just as important, or, as Wilke contends, more important than the quality of life of an ailing patient? A person with diabetes, Parkinson’s disease, or congestive heart failure presently has no hope of being cured. The stem cells from just a handful of blastocysts could eventually cure every person who has nearly any degenerative disease such as those. Because of that, I believe it would actually be immoral to let the opportunity HESC research offers to cure degenerative diseases go to waste.

The United States government should continue funding human embryonic stem cell research because of its life-saving potential. HESC research has nearly unlimited potential in curing degenerative diseases including cancer, diabetes, Parkinson’s disease, and congestive heart failure. Although it requires the sacrifice of a limited number of human embryos, it could save the lives of millions of people in the future. Without federal funding, HESC research would not be able to continue efficiently or transparently. Could the United States really feel proud if we let those with degenerative diseases die needlessly? Human embryonic stem-cell research could be the next great breakthrough in the field of medicine, so we need to support it however possible.

Works Cited


