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## On the Ethics of Stem Cell Research

*Scientific research in the field of genetics needs to be encouraged and promoted, but, like every other human activity, it can never be exempt from moral imperatives; research using adult stem cells, moreover, offers the promise of considerable success.*

— His Holiness Pope John Paul II, January 2005

There are three myths in the politically charged controversy over stem cell research. One myth is that all stem cell research involves only embryonic stem cell research. A second is that embryonic stem cell research is the only stem cell research that can aid the treatment of certain types of diseases, and that opposing embryonic stem cell research will deny those in need of the unique benefits of this research. The third myth is that the Roman Catholic Church opposes all stem cell research. It is critically important for policy makers to know and understand the facts in this issue.

The truth is that there are two types of stem cell research—embryonic and adult—and that the treatment needs of people afflicted with debilitating diseases may be met with adult stem cell research. The fact that there are two types of stem cell research and that there are significant differences between them is often lost in the rhetoric.

Extracting stem cells from embryos to establish embryonic stem cell lines kills embryos. Embryonic stem cells have proven difficult to work with and have a propensity to form tumors in experiments. Despite continuing embryonic stem cell research, to date there are no clinical treatments with these cells.

These facts are in contrast to the real success of adult stem cell research in which adult stem cells have been used to treat fifty-six different diseases. Adult stem cells are present in the body at any time following the embryonic stage of growth in the womb and through out the remainder of an individual's life. Adult stem cells of newborns are also found in umbilical cord blood and the placenta. Neither the use of adult stem cells nor the establishment of adult stem cell lines involves the destruction of embryos or any disproportionate risk to the individual from whom the cells are taken.

The human embryo is not, as the proponents of embryonic stem cell research assume, "a bundle of cells" or an "undifferentiated mass of cells." Rather, the human embryo is

an actual, self-integrating, unified individual being, endowed with human nature and as such is the proper bearer of fundamental human rights. It is a potential newborn or adult, but is as real a human individual as any other human. To extract its stem cells is to destroy directly an innocent human life and to sacrifice that life for medical research. Support for this activity places a purely instrumental value on these human individuals who are equal in dignity to any other human being.

Another disturbing ethical concern in the debate is the denunciation that any opposition to embryonic stem cell research is "ideology, not science." What this means is that any position other than acceptance of embryonic stem cell research is necessarily biased and agenda-driven. This view (itself ideological) is disturbing not simply because it assumes there is an imperative to use all available technology even at the expense of human life, but also because it sets up a false conflict between science and ethics. It is really saying that science should not be evaluated on independent moral grounds. However, because science (medicine in particular) exists to serve the human person, a balance can and must be achieved between the great promise of stem cell research and respect for human life. This is precisely what adult stem cell research accomplishes.

The prospect of curing many debilitating conditions such as Parkinson's disease, Diabetes, Alzheimer's, and paralysis (or at least significantly lessening the suffering they cause) through stem cell research and therapy has captured the ethical and political attention of the world. The fact that there is so much at stake in stem cell research makes the issue a defining one for America. It is important that we understand the whole story behind stem cell research, and as a result understand that to support adult stem cell research while opposing embryonic stem cell research is not ideological but ethically principled and fully consistent with the goals of science and the teaching of the Catholic Church.<sup>1</sup>

# The Church Addresses Human Life & Stem Cell Research

“Since it must be treated from conception as a person, the embryo must be defended in its integrity, cared for, and healed, as far as possible, like any other human being.”

– Catechism of the Catholic Church, paragraph 2274

“No objective, even though noble in itself, such as a foreseeable advantage to science, to other human beings or to society, can in any way justify experimentation on living human embryos or fetuses, whether viable or not, either inside or outside the mother’s womb. To use human embryos or fetuses as the object or instrument of experimentation constitutes a crime against their dignity as human beings having a right to the same respect that is due to the child already born and to every human person.”

– Donum Vitae, Congregation for the Doctrine of the Faith, 1987

“The deliberate decision to deprive an innocent human being of his life is always morally evil and can never be licit either as an end in itself or as a means to a good end. It is in fact a grave act of disobedience to the moral law, and indeed to God himself, the author and guarantor of that law; it contradicts the fundamental virtues of justice and charity.”

– Evangelium Vitae, On the Value and Inviolability of Human Life, 1995

“There are no lives that are not worth living; there is no suffering, no matter how grave, that can justify killing a life; there are no reasons, no matter how noble, that make plausible the creation of human beings, destined to be used and destroyed.”

– His Holiness Pope John Paul II, November 9, 2004

“Indeed, society must be very careful when it puts its hand on the switch of life. By design or default, we could easily begin a dangerous journey down the ‘slippery slope.’ Embryonic stem cell research points down that path. And, by appropriating taxpayers’ money for such experiments with human life, our elected officials would make all of us unwitting partners along the way.”

– His Eminence Adam Cardinal Maida, Archbishop of Detroit, July 19, 2001

## Important Questions & Answers Regarding Stem Cell Research<sup>ii</sup>

**Q:** What is a stem cell?

**A:** A stem cell is a relatively unspecialized cell that, when it divides, can do two things: make another cell like itself, or make any of a number of cells with more specialized functions. For example, just one kind of stem cell in our blood can make new red blood cells, or white blood cells, or other kinds – depending on what the body needs. These cells are like the stem of a plant that spreads out in different directions as it grows.

**Q:** Is the Catholic Church opposed to all stem cell research?

**A:** Not at all. Most stem cell research uses cells obtained from adult tissue, umbilical cord blood, and other sources that pose no moral problem. Useful stem cells have been found in bone marrow, blood, muscle, fat, nerves, and even in the pulp of baby teeth. Some of these cells are already being used to treat people with a variety of diseases.

**Q:** Why is the Church opposed to stem cell research using the embryo?

**A:** Because harvesting these cells kills the living human embryo. The Church opposes the direct destruction of innocent human life for any purpose, including research.

**Q:** If some human embryos will remain in frozen storage and ultimately be discarded anyway, why is it wrong to try to get some good out of them?

**A:** In the end we will all die anyway, but that gives no one a right to kill us. In any case, these embryos will not die because they are inherently unable to survive, but because others are choosing to hand them over for destructive research instead of letting them implant in their mother's womb. One wrong choice does not justify an additional wrong choice to kill them for research, much less a choice to make taxpayers support such destruction. The idea of experimenting on human beings because they may die anyway also poses a grave threat to convicted prisoners, terminally ill patients, and others.

**Q:** Haven't doctors, scientists and commentators said that embryonic stem cell research will lead to the cure of many diseases?

**A:** Some have made this claim, but in fact this is largely speculation. Embryonic stem cells have never treated a human patient, and animal trials suggest that they are too genetically unstable and too likely to form lethal tumors to be used for treatment any time soon. Years ago it was said that stem cells from embryos would be the most useful because they are so fast growing and versatile, able to make virtually any kind of cell. But those advantages become disadvantageous when these cells make tumors, creating a condition worse than the disease.

**Q:** Is the Church telling us to choose the lives of embryos over the lives of suffering patients?

**A:** No. It is calling us to respect both, without discrimination. We must help those who are suffering, but we may not use a good end to justify an evil means. Moreover, treatments that do not require destroying any human life are at least as promising – they are already healing some conditions, and are far closer to healing other conditions than any approach using embryonic stem cells. The choice is not between science and ethics, but between science that is ethically responsible and science that is not.

**Q:** What is human cloning and how is it related to stem cell research?

**A:** In human cloning, the DNA from the nucleus of a person's body cell is inserted into an egg whose own genetic material has been removed, and the egg is then stimulated to begin embryonic development. The resulting cloned embryo would genetically be an almost identical twin to the person supplying the body cell. This research overlaps with the stem cell issue. That is, human cloning might be done to create an embryo who will be destroyed to provide stem cells genetically matched to a patient, so the cells will not be rejected as foreign tissue. But some cloning research is done for other purposes – for example, to create embryos with devastating illnesses from the body cells of sick patients, to study the early progress of that disease. Most embryonic stem cell research involves embryos created by in vitro fertilization, not cloning.

**Q:** Why does the Church oppose human cloning?

**A:** Cloning is a depersonalized way to reproduce, in which human beings are manufactured in the laboratory to preset specifications. It is not a worthy way to bring a new human being into the world. When done for stem cell research, it involves the moral wrong of all embryonic stem cell research (destroying an innocent human life for possible benefit to others) plus an additional wrong: It creates human beings solely in order to kill them for their cells. This is the ultimate reduction of a fellow human being to a mere means, to an instrument of other people's wishes.

**Q:** Has research using adult stem cells ever accomplished anything?

**A:** Thousands of lives have been saved by adult stem cells – most often in the form of “bone marrow transplants” for leukemia and other conditions (where the active ingredient in the bone marrow is stem cells.) Today, adult stem cells have been used to help people with Parkinson's disease, spinal cord injury, sickle-cell anemia, heart damage, corneal damage, and dozens of other conditions. The danger is that this progress toward cures will be halted or slowed by campaigns that divert attention and resources toward embryonic stem cell research.

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# Advocacy for Ethical Adult Stem Cell Research

Opposition to embryonic stem cell research is not strictly a Catholic concern, nor is it particularly a Christian concern. Such opposition must be characterized within the global concern for human and civil rights, a concern that transcends all nations and genders, religions and races. The successful use of ethical adult stem cell research in treatment of diseases stands in stark contrast to the lack of success of embryonic stem cell research. The following are 56 diseases in which ethical adult stem cell research has been successfully used in humans<sup>iii</sup>:

Acute Lymphoblastic Leukemia	Spinal Cord Injury	Sjogren's Syndrome
Acute Myelogenous Leukemia	Heart Damage	Retinoblastoma
Chronic Myelogenous Leukemia	Parkinson's Disease	Merkel Cell Cancer
Testicular Cancer	Limb Gangrene	Scleromyxedema
Breast Cancer	Corneal Regeneration	Behcet's Disease
Non-Hodgkin's Lymphoma	Multiple Myeloma	Myasthenia
Hodgkin's Lymphoma	Neuroblasoma	Thalassemia
Renal Cell Carcinoma	Soft Tissue Sarcoma	Various Solid Tumors
Multiple Sclerosis	Systemic Vasculitis	Diamond Blackfan Anemia
Crohn's Disease	Aplastic Anemia	Autoimmune Cytopenia
Rheumatoid Arthritis	Myelodysplasia	Sideroblastic Anemia
Juvenile Arthritis	Surface Wound Healing	Ovarian Cancer
Systemic Lupus	Sandhoff Disease	Brain Cancer
Polychondritis	Fanconi's Anemia	Chronic Epstein – Barr Infection
Red Cell Aplasia	Primary Amyloidosis	Juvenile Myelomonocytic Leukemia
Sickle Cell Anemia	Osteogenesis Imperfecta	Waldenstrom's Macroglobulinemia
Lymphoma	Stroke	Severe Combined Immunodeficiency Syndrome X-I
Angioimmunoblastic Lymphadenopathy with Dysproteinemia	X-Linked Lymphoproliferative Syndrome	X-Linked Hyperimmunoglobuline-M Syndrome
Hemophagocytic Lymphohistiocytosis		
Amegakaryocytic Thrombocytopenia		

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<sup>i</sup>Cataldo, Dr. Peter: *The Ethics of Stem Cell Research*, October 2004. National Catholic Bioethics Center.  
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<sup>ii</sup>United States Catholic Conference of Bishops, "Stem Cell Research and Human Cloning, Questions and Answers," [www.usccb.org](http://www.usccb.org). December 2004.

<sup>iii</sup><http://stemcellresearch.org/facts/treatments.htm>. Accessed January 2005.