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Stem Cell Research: Understanding the Church's Position

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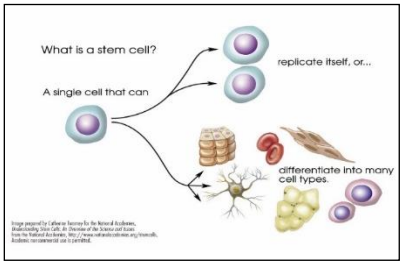
It has been said that if you were to ask what the top misunderstood Church teaching today is, even for practicing Catholics, stem-cell research would make an unusually strong candidate. Many Catholics simply assume The Church is against all stem-cell research even if they're not exactly sure why. It is hoped that this article will clarify some of the confusion about stem cell research and the Church's position on the issue.

What are Stem Cells? Stem cells are the foundation for every organ and tissue in your body. There are many different types of stem cells that come from different places in the body or are formed at different times in our lives. These include embryonic stem cells that exist only at the earliest stages of development and various types of tissue-specific (or adult) stem cells that appear during fetal development and remain in our bodies throughout life. Stem cells have "the remarkable potential to develop into any different cell types in the body during early life and growth. In addition, in many tissues they serve as a sort of internal repair system, dividing essentially without limit to replenish other cells as long as the person or animal is still alive. When a stem cell divides, each new cell has the potential either to remain a stem cell or become another type of cell with a more specialized function, such as a muscle cell, a red blood cell, or a brain cell" (National Institute of Health, Stem Cell Basics, 2015).



This regenerative capacity makes them very attractive to researchers working on treatments and cures for a wide range of diseases and conditions. By their very nature stem cells have the potential to be used to create any cell or tissue the body might need to counter diseases such as diabetes, heart disease, childhood leukemia or spinal cord injury. In addition, the potential exists for customization which would provide a perfect genetic match for any patient, thus eliminating tissue matching and rejection problems and the need for patients to take powerful immune suppressing drugs for the rest of their lives.

Types of Stem Cell Research

The term 'stem cell research' is often used to discuss all scientific research involving stem cells, but the fact of the matter is, there are different types of stem cells being studied. Stems cells can be divided into three main categories:

- Embryonic stem cells: grown in the laboratory from cells found in the early embryo
- Adult or tissue stem cells: found in our bodies all our lives.
- Induced pluripotent stem cells, or 'reprogrammed' stem cells: similar to embryonic stem cells but made from adult specialized cells using a laboratory technique.

Embryonic stem cells (ESCs) are derived from the 5 to 6 day old embryo (blastocyst). These cells are pluripotent, meaning that they can divide into several stem cells and specialize into any type of cell within the body. This property

Blastocyst on the tip of a pin
Wellcome Images/Yorgos

allows embryonic stem cells to repair damaged tissues and organs and to stimulate the regeneration of diseased tissues. Because they have the greatest capacity of any stem cells to regenerate over many generations, they are highly valued by researchers. However, by extracting the stem cells, scientists destroy the embryo.

Adult (*somatic or tissue-specific*) stem cells come from developed organs and tissues in the body. They are called *multipotent* cells because they have a more limited ability to produce cells of a different tissue or organ from which they originated. These stem cells have a misleading name, because they are also found in infants and children. The body uses them to repair and replace damaged tissue in the same area in which they are found. For example, blood forming (*hematopoietic*) stem cells are a type of adult stem cell found in bone marrow. They make new red blood cells, white blood cells, and other types of blood cells. Doctors have been performing stem cell transplants, also known as bone marrow transplants, for decades using these stem cells to treat certain types of cancer. To date, adult stem cells have successfully treated more diseases than any other type of stem cells, and they do not involve the destruction of human life.

Induced pluripotent stem cells (iPSCs) are somewhere in between the adult and embryonic stem cells. These are highly versatile, similarly to ESCs, but are made from adult specialized cells that are genetically reprogrammed, allowing any cell of the body to be turned into stems cells. iPSCs have two main advantages: the first is that they do not create any ethical debate, as they don't come from embryos, and the second is that the risk of rejection is lower than in adult stem cells, thanks to the fact that iPSCs are reprogrammed to act as ESCs. While iPS cells share many of the same characteristics of embryonic stem cells, including the ability to give rise to all the cell types in the body, further research is required to fully understand the differences.

Umbilical cord blood stem cells are harvested from the umbilical cord after childbirth. They can be frozen in cell banks for use in the future. These have been successfully used to treat children with blood cancers, such as leukemia, and certain genetic blood disorders. Stem cells have also been found in amniotic fluid.

The Church's Position

Contrary what many may think, the Catholic Church does ***not*** oppose all stem cell research. In fact, it has publicly supported and significantly contributed (including financially) to stem cell research which poses no moral problem. Most stem cell research, is fully supported by the Catholic Church. The Vatican's Pontifical Council for Culture, has been involved in a multi-year and multi-million-dollar, partnership with *NeoStem Inc*. (a stem cell research company) to promote research involving adult stem cells and their potential use in medical treatments.

The only research the Church finds morally objectionable is embryonic stem cell research (ESCR) which requires the destruction of the human embryo to harvest the stem cells. Catholic teaching respects the dignity and the equal moral worth of every human person, thus any research that destroys the life of some in order enhance the life of others must be rejected.

ESCR is morally problematic because it forces us to choose between two moral principles, a) the duty to prevent or alleviate suffering b) the duty to respect the value of human life. In the case of ESCR, it is impossible to respect both moral principles. To obtain embryonic stem cells, the early embryo must be destroyed. This means destroying a human life.

In contrast, the Church has championed adult stem cell research, which does not involve human embryonic stem cells. Additionally, the breakthrough to reprogram somatic cells into embryonic-like induced pluripotent stem (iPS) cells has further diminished the need to utilize human embryonic stem cells for research and medical therapies. As the U.S. Conference of Catholic Bishops declared: "Clearly, the Church favors ethically acceptable stem cell research. It opposes destroying some human lives now, on the pretext that this may possibly help other lives in the future. We must respect life at all times, especially when our goal is to save lives."

The Catholic Church has always been concerned with the protection of all innocent human life. Scientific research is important, but it can never come at the expense of the weakest among us. (*Humanae*

Vitae 1968). In *Donum Vitae* no. 4 the Church's objection to some forms of stem cell research is clear: " If the embryos are living, whether viable or not, they must be respected just like any other human person; experimentation on embryos which is not directly therapeutic is illicit.(29) 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" (*Congregation for the Doctrine of Faith, 1987*).

Rev. Tadeusz Pacholczyk, Director of Education at The National Catholic Bioethics Centre in Philadelphia, sums it up nicely: "even if it were possible to cure all diseases known to mankind by harvesting (and therefore killing) a single human embryo, it would never become ethical to do so. We cannot choose evil that good might come, nor can we ever afford to pay the steep ethical price of ignoring the sacrosanct humanity of the embryo, that tiny creature that each of us once was ourselves. Treating a fellow human being, albeit a very small one, as a means rather than an end, violates his or her most basic human rights." (December 2009)

While some may argue that the Catholic Church and scientific community are at odds, nothing could be further from the truth, but the Church's endorsement of science is not necessarily an endorsement of every manifestation of supposed scientific progress. Indeed, the Church rejects any technologies that destroy both natural and human ecology. "The issue of stem-cell research does not force us to choose between science and ethics, much less between science and religion. It presents a choice as to how our society will pursue scientific and medical progress. Will we ignore ethical norms and use some of the most vulnerable human beings as objects, undermining the respect for human life that is at the foundation of the healing arts? Such a course, even if it led to rapid technical progress, would be a regress in our efforts to build a society that is fully human. Instead we must pursue progress in ethically responsible ways that respect the dignity of each human being. Only this will produce cures and treatments that everyone can live with." (US Conference of Bishops - *On Embryonic Stem Cell Research, 2008*

February 8, 2018 (Life Site News)

Cutting-edge treatment with adult stem cells helped a paralyzed woman regain feeling in her body and start to walk again. The Charlotte Lozier Institute (CLI) released a new video of Laura Dominguez-Tauer, whose story they first told in 2011, showing the progress in her life since receiving ethical adult stem cell treatment. Dominguez-Tauer was in a car accident when she was 16. It paralyzed her from the neck down. She underwent an experimental procedure using her own adult stem cells and is now able to walk with the help of a walker. Watch her story here:

https://www.youtube.com/watch?v=opAZW4CLyRk

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A Really Difficult Case

Op/Ed by Leo Walsh, CSB, STD

In her article "The Error of Intentionalism" *(The National Catholic Bioethics Quarterly 17(2017)399-408)*, Irene Alexander (Assistant Professor of Theology, University of Dallas) takes issue with the notion of what she terms "intentionalism". What she means by this is the defining of the morality of an action by the intention of the agent, independent of the nature of the act itself. She begins her article with a consideration of the history of caesarian section. For centuries, the operation to save the life of an unborn child necessarily killed the dying woman. This action, despite the good intentions of the agents, was direct killing of the mother. Nowadays, this operation is fairly common for different reasons and does not present a serious threat to the mother's life. Medical science has changed moral estimation of the act.

Alexander gives other examples in the field of bioethics where some Catholic bioethicists define as "indirect killing" all actions where the intention of the agent is not to have the patient (the one directly affected by the act) die but to achieve some other end, even when the act will inevitably kill the person. (Alexander thinks there are many Catholic ethicists in universities and seminaries who hold this view.) Joseph Boyle (of Grisez, Boyle and Finnis fame) used to present a humorous case to make this point. A group of cavers are underground when the cave begins to fill with water, threatening all of them. There is one narrow exit, but the first to reach this is a very stout man, who gets stuck. No amount of pulling or shoving can move him. One of the cavers has a stick of dynamite, and they use this to "remove" their friend, not to kill him, but simply to have a saving exit. The act, then, according to Boyle, is not direct killing.

At first glance (and maybe from second glance) one has to agree with Alexander, that we are dealing with direct killing. But we seem to run into two difficulties. First, when a person deliberately discontinues the use of extraordinary means of life-support as overly burdensome or futile, the teaching of the Church and of moralists generally, is that such an action is not immoral. However, it is a killing action. The patient will inevitably die, when such life-support is known to be the only thing keeping the person alive. It is precisely intention which differentiates this morally legitimate action from euthanasia or physician assisted suicide.

Second, although Alexander seems correct in refusing to call "indirect" killing an action which of itself is aimed directly at a person and will inevitably kill him/her, we run up against situations that seem to demand such actions. Pope Pius X1 said, in the mother-child dilemma, "Better two deaths than one murder." Of course, that's right as a general statement. The question is, are we dealing with murder when the mother and non-viable baby will both die unless the baby is aborted? Is the condition of the baby materially changed?

And this brings us to the biggest difficulty of all! We can side with Alexander and call these actions direct killing and therefore intrinsically evil. Or we can side with Alexander in naming these actions as direct killing but claim that there are exceptions to direct killing as evil. I think that the solution of Boyle and company was to deny that the actions were direct killings in order to deal with the problems that confront us in real life.

If I opt for the "exceptions to what was (is) considered intrinsically evil" solution, I know that I face abhorrence from all sides, and this is understandable. Where would we be if this were adopted? Yet, somehow it seems wrong to allow two persons to die, in the mother/child dilemma when we can save the mother but have no way of saving the baby. I once asked Joseph Fuchs, S.J., (the late great German moral theologian) about this and his answer was, "Yes, that's a really difficult case." Really, Joe?

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