

# The Ten Great Myths in the Debate Over Stem Cell Research

Rev. Tadeusz Pacholczyk, Ph.D.

1. **Stem cells can only come from embryos.** In fact stem cells can be taken from umbilical cords, the placenta, amniotic fluid, adult tissues and organs such as bone marrow, fat from liposuction, regions of the nose, and even from cadavers up to 20 hours after death.
2. **The Catholic Church is against stem cell research.** There are four categories of stem cells: embryonic stem cells, embryonic germ cells, umbilical cord stem cells, and adult stem cells. Given that germ cells can come from miscarriages that involve no deliberate interruption of pregnancy, the church really opposes the use of only one of these four categories, i.e., embryonic stem cells. In other words, the Catholic Church approves three of the four possible types of stem cell research.
3. **Embryonic stem cell research has the greatest promise.** Up to now, no human being has ever been cured of a disease using embryonic stem cells. Adult stem cells, on the other hand, have already cured thousands. There is the example of the use of bone marrow cells from the hipbone to repair scar tissue on the heart after heart attacks. Research using adult cells is 20-30 years ahead of embryonic stem cells and holds greater promise. This is in part because stem cells are part of the natural repair mechanisms of an adult body, while embryonic stem cells do not belong in an adult body (where they are likely to form tumors, and to be rejected as foreign tissue by the recipient). Rather, embryonic stem cells really belong only within in the specialized microenvironment of a rapidly growing embryo, which is a radically different setting from an adult body.
4. **Embryonic stem cell research is against the law.** In reality, there is no law or regulation against destroying human embryos for research purposes. While President Bush has banned the use of federal funding to support research on embryonic stem cell lines created after August 2001, it is not illegal. Anyone using private funds is free to pursue it.
5. **President Bush created new restrictions to federal funding of embryonic stem cell research.** The 1996 Dickey Amendment prohibited the use of federal funds for research that would involve the destruction of human embryos. Bush's decision to permit research on embryonic stem cell lines created before a certain date thus relaxes this restriction from the Clinton era.
6. **Therapeutic cloning and reproductive cloning are fundamentally different from one another.** The creation of cloned embryos either to make a baby or to harvest cells occurs by the same series of technical steps. The only difference is what will be done with the cloned human embryo that is produced: will it be given the protection of a woman's womb in order to be born, or will it be destroyed for its stem cells?
7. **Somatic cell nuclear transfer is different from cloning.** In fact, "somatic cell nuclear transfer" is simply cloning by a different name. The end result is still a cloned embryo.

8. **By doing somatic cell nuclear transfer, we can directly produce tissues or organs without having to clone an embryo.** At the present stage of research, scientists are unable to bypass the creation of an embryo in the production of tissues or organs. In the future it may be possible to inject elements from the cytoplasm of a woman's ovum into a somatic cell to "reprogram" it into a stem cell. This is called "de-differentiation." If so, there would be no moral objection to this approach to getting stem cells.
9. **Every body cell, or somatic cell, is somehow an embryo and thus a human life.** People sometimes argue: "Every cell in the body has the potential to become an embryo. Does that mean that every time we wash our hands and are shedding thousands of cells, we are killing life?" The problem is that this overlooks the basic biological difference between a regular body cell, and one whose nuclear material has been fused with an unfertilized egg cell, resulting in an embryo. A normal skin cell will only give rise to more skin cells when it divides, while an embryo will give rise to the entire adult organism. Skin cells are not potential adults. Skin cells are potentially only more skin cells. Only embryos are potential adults.
10. **Because frozen embryos may one day end up being discarded by somebody, that makes it morally allowable, even laudable, to violate and destroy those embryos.** The moral analysis of what we may permissibly do with an embryo doesn't depend on its otherwise "going to waste," nor on the incidental fact that those embryos are "trapped" in liquid nitrogen. If we think about a schoolhouse in which there is a group of children who are trapped through no fault of their own, that would not make it okay to send in a remote control robotic device which would harvest organs from those children and cause their demise.

*Rev. Tadeusz Pacholczyk did his Ph.D. in Neuroscience at Yale University and post-doctoral research at Massachusetts General Hospital/Harvard Medical School, prior to doing advanced studies in Rome in Theology and in Bioethics. He currently serves as the Director of Education for the National Catholic Bioethics Center in Philadelphia. He is a priest of the diocese of Fall River, Massachusetts.*