

The Ten Great Myths in the Debate Over Stem Cell Research

by Rev. Tadeusz Pacholczyk, Ph.D.

Myth 1. Stem cells 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.

Myth 2. The Church is against stem cell research. There are various categories or sources of stem cells, including stem cells from embryos, stem cells from miscarriages, umbilical cord stem cells, adult stem cells and stem cells from cellular reprogramming (see Myth 7 below). The Church really opposes only one of these categories, namely, embryonic stem cell research, because the cells are taken from embryos that are about 5 days old, invariably destroying that early human life. The fact is that the Catholic Church strongly supports the majority of the categories of research involving stem cells, and supports every ethical form of stem cell research.

Myth 3. Embryonic stem cell research shows the most 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 of patients. Various cancers, auto immune diseases, cardiovascular disorders, ocular disorders, immunological problems, neural degenerative diseases, anemias and other blood conditions, metabolic disorders, liver diseases, and bladder diseases have been treated; in fact about 70 conditions and disorders have been treated with adult stem cells (see: <http://www.stemcellresearchfacts.org/treatment-list/>).

Myth 4. Embryonic stem cell research is against the law. There is currently no federal law against destroying human embryos for research purposes. Anyone using private funds is free to pursue it. President George W. Bush first made federal funds available for limited research on human embryonic stem cells. President Barack Obama increased funding levels and allowed for greatly expanded research in this area.

Myth 5. 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 between the two types of cloning 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? Both forms of cloning raise grave moral objections. Therapeutic cloning is sometimes referred to as "clone and kill," and the first human embryos were produced and destroyed this way in 2013 at Oregon Health and Science University.

Myth 6. "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.

Myth 7. By doing somatic cell nuclear transfer, we can directly produce tissues or organs without having to clone an embryo. In fact, somatic cell nuclear transfer (cloning) always produces an embryo first, from which stem cells may be destructively harvested. Thanks to recent advances, however, it is now possible to use genes and/or chemicals to “reprogram” a regular body cell (like a skin cell) into a stem cell [called an “induced pluripotent stem cell”], without ever creating an embryo. This latter approach does not raise significant moral objections as a means for obtaining stem cells.

Myth 8. 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 when we do cloning. Does that mean that every time we wash our hands and are shedding thousands of cells, we are killing life?” This argument overlooks the important biological difference between a regular body cell, and one whose nuclear material has been fused with an unfertilized egg (thereby creating an embryo by cloning). A normal skin cell will only give rise to more skin cells, 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.

Myth 9. 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 deep freeze. If we imagine a hypothetical case of a coal mine with miners who are permanently trapped deep inside the earth through no fault of their own, with the certainty that they are all going to die anyway, that would not make it okay to send a remote control robotic device to forcibly harvest organs from those miners and cause their death for the benefit of other suffering individuals who might benefit from transplants.

Myth 10. Because large numbers of embryos generated during marital acts may be lost from a woman’s body and die naturally (a.k.a. “embryo wastage”), that makes it OK for us to create and destroy embryos in research. The difference between the natural loss of an embryo during pregnancy and the intentional destruction of embryos is precisely the difference between the case of Sudden Infant Death Syndrome vs. the case of smothering an infant with a pillow. What Mother Nature does and what I freely choose to do as an acting person are two separate realities, not to be confused. To put it more dramatically, the fact that Mother Nature sends tsunamis that claim the lives of thousands of victims doesn’t make it OK for me to shoot a machine gun into a crowded stadium and claim thousands of victims of my own.

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.