

ISSUES IN PERSPECTIVE

Dr. James P. Eckman, President Emeritus
Grace University, Omaha, Nebraska
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The Ethical Dilemmas Associated with Frozen Embryos

Largely because of the procedure known as in-vitro fertilization (IVF), thousands of couples across the US are facing an ethical dilemma never faced before in history: What to do with their frozen embryos? The Department of Health and Human Services estimates that more than 600,000 frozen embryos are stored nationwide, in addition to countless more cryo-preserved eggs and sperm. [It is difficult to estimate how many frozen embryos there are worldwide.] IVF produces embryos in a petri dish, where the wife's eggs are fertilized by the husband's sperm. [Sometimes donor eggs and/or donor sperm are used as well.] Generally, there are multiple fertilizations and several are placed into the woman's body in hopes one or more will attach to the uterine wall as a successful pregnancy. The rest of the robust embryos are frozen.

[Parenthetically, a new IVF technique called Augment utilizes the stem cells of an older woman, which are combined with her eggs, essentially recharging them and thereby energizing the fertilization process. The healthiest of the resulting embryos are implanted in the mother's uterus. Augment seems to enhance the IVF success rate, which currently stands at 38% for women in their 30s and 18% for women in their 40s.]

What is done with the frozen embryos generated by IVF? A 2005 study funded by the National Institutes of Health found that of 58 couples with leftover embryos, 72% had not yet decided what to do with their embryos. Clinics throughout the US store the embryos but are becoming more aggressive in forcing couples to decide. In a recent *Washington Post* article on IVF and frozen embryos, couples are given these choices: Implant the frozen embryos, offer them for donation to other couples, pay the hefty annual storage fee or have them destroyed. In addition, there are even more complex legal issues when a couple that has frozen embryos divorces or someone dies and the various family members are at odds over the fate of the frozen embryos. As a civilization, we are crossing a legal threshold never crossed before.

There is one more option for the frozen embryos: Since President Obama repealed the ban on stem cell research in 2009, there has been a resurgence of interest in donated embryos from the scientific community. These frozen embryos could be used in a variety of research opportunities, including using the embryos as a source for stem cells. The problem with using human embryos as a source for stem cells is that scientists in effect kill the embryo when they remove the stem cells. This is obviously ethically and morally unacceptable. Further, to use the human embryo for any kind of research normally necessitates killing the embryo.

As Christians, how should we think biblically about the issue of frozen embryos? Consider these conclusions:

1. **Stem Cells.** Human embryonic stem cells are the master cells of the body. They have the capacity to produce over 200 different specialized cells that make up the adult human body. An embryo begins as a single cell zygote that starts to divide within hours after fertilization. After five days of development, the embryo is called a blastocyst. The cells of the early embryo (up to about the 8-cell stage) are totipotent, meaning that they can develop as a new and complete embryo. As these totipotent cells continue to divide, they differentiate and become more specialized cells called pluripotent stem cells, which can only produce the various specialized cells and organs of the body. To obtain the approximately 100 pluripotent stem cells of the body at the blastocyst stage, researchers must in effect destroy the human embryo. This is ethically unacceptable because it is the destruction of a human life. For that reason, many researchers are calling for the use of adult stem cells (or umbilical cord or placental stem cells, which have the same qualities as adult stem cells). Human adult stem cells are a reasonable and ethically sound alternative. Human adult stem cells are multipotent, meaning that they can differentiate into many different cell types, and some are showing pluripotent properties, meaning that they theoretically differentiate into any of the 200 cell types of the body. Current clinical uses and human trials of human stem cells include treatment for corneal scarring, stroke, heart attack, spinal cord injuries, breast cancer, diabetes, Parkinson's disease, arthritis, lymphoma, leukemia, melanoma, skin replacement, ovarian cancer, and many other forms of cancer and other diseases. As an important alternative to embryonic stem cells, adult stem cell research is ethical and should be supported because it does not violate the life, dignity and rights of human beings.
2. **Frozen embryos.** Typically, when in vitro fertilization (IVF) is used, excess embryos result and those not implanted into the mother's womb are then frozen and stored in a growing number of clinics throughout the United States. As mentioned above, there are over 600,000 frozen embryos in the United States alone. But the existence of these frozen embryos raises profound ethical and legal challenges. The Bible presents the case that the human embryo is a person with infinite value and worth (e.g., Psalm 139:16). Therefore, the existence of frozen human embryos requires reflection and serious biblical thinking. Two conclusions seem warranted:
 - Since one of our goals as Christians must be the protection of embryonic life, if "spare embryos" are produced through IVF and they are not used for implantation, it is ethically acceptable for these embryos to be frozen, provided that they are used, via future implantations, to produce a baby, not for experimentation. (This, however, should not be understood to condone IVF, which I believe is ethically wrong. Once human embryos are produced through IVF, their existence is not an ethically neutral issue. Since God is concerned about the human embryo (again see Psalm 139:16), as good stewards, we must be too).

- Once the embryos are frozen, the major ethical guideline must be to protect them from harm. It is ethically unacceptable to permit these frozen embryos to be used for experimentation of any kind. Rather, the only ethically sound option for frozen embryos is quick implantation in a mother's womb. Ethicists John and Paul Feinberg write that ". . . while we believe an IVF-conceived embryo has been produced by immoral means, once it exists, there is still an obligation to treat it morally. Killing it or allowing it to die is immoral. Freezing it and later implanting it . . . at the current state of our technology . . . seem the most likely ways to protect the child, and that must be the overriding concern." [*Ethics For A Brave New World*, p. 240. Also see Robert P. George and Christopher Tollefsen, *Embryo: A Defense of Human Life*, pp. 19-26]

The ethical issues raised by frozen embryos require sound biblical thinking. Embryonic life is important and valuable to God. How we as a civilization treat this life is a stewardship responsibility we have before God—it matters to Him.

See James P. Eckman, *Christian Ethics*, pp. 43-53; Ellen McCarthy, "Fertility Medicine Brings Babies—and Tough Decisions," *Washington Post* (18 May 2015); Alice Park, "The Incredible, Surprising, Controversial New Way to make a Baby," *Time* (18 May 2015), pp. 42-46.