

Salt & Light

Winter 2005

The Newsletter of the Social Concerns Ministry Team

You are the salt of the earth...
You are the light of the world...

Educating and informing the church body in light of biblical principles

Mt. 5:13-14

Editorial Note:

Who would have thought that a bioethics issue like stem cell research would be the only topic to receive an entire speech at a national presidential convention, or that a *Newsweek* cover story would herald it as a swing consideration in the election itself? But its prominence is warranted: the potential medical benefit of stem cell treatments is huge. Yet there are two types of stem cells. Obtaining embryonic stem cells requires killing the youngest of human beings, whereas obtaining adult stem cells harms no one.

This issue of *Salt & Light* discusses stem cell research in four parts: 1) a biblically-informed Q/A evaluation of the different types of stem cells; 2) five myths about embryonic stem cell research; 3) a comparison of the medical benefits to date from adult vs. embryonic stem cells; and 4) a critique of the common media failure to distinguish accurately the types of stem cells.

Stem Cell Research and “Therapeutic” Cloning: A Christian Analysis

From: The Center for Bioethics and Human Dignity (CBHD), September 2004

In November of 1998, scientists reported that they had successfully isolated and cultured human embryonic stem cells—a feat which had eluded researchers for almost two decades. This announcement kicked off an intense and unrelenting debate between those who approve of embryonic stem cell research and those who are opposed to it. Some of the most prominent advocates of the research are scientists and patients who believe that embryonic stem cell research will lead to the development of treatments and cures for some of humanity’s most pernicious afflictions (such as Alzheimer’s disease, Parkinson’s disease, heart disease, and diabetes). Among the most vocal opponents of the research are those who share the desire to heal, but who object to the pursuit of healing via unethical means. CBHD’s view is that because human embryonic stem cell research necessitates the destruction of human embryos, such research is unethical—regardless of its alleged benefits. Ethical alternatives for achieving those benefits are available and should be actively pursued.

1. What are human embryonic stem cells and how are they obtained?

Human embryonic stem cells are the cells from which all 200+ kinds of

tissue in the human body originate. They are typically derived from human embryos—often those from fertility clinics who are left over from assisted reproduction attempts (e.g., in vitro fertilization). When stem cells are obtained from living human embryos, the harvesting of such cells necessitates destruction of the embryos.

2. How are adult stem cells different from embryonic stem cells?

Adult stem cells (also referred to as “non-embryonic” stem cells) are present in adults, children, infants, placentas, umbilical cords, and cadavers. Obtaining stem cells from these sources does not result in certain harm to a human being.

3. Is it ethical to obtain stem cells from human fetuses and umbilical cords?

Fetal stem cell research may ethically resemble either adult or embryonic stem cell research and must be evaluated accordingly. If fetal stem cells are obtained from miscarried or stillborn fetuses, or if it is possible to remove them from fetuses still alive in the womb without harming the fetuses, then no harm is done to the donor and such fetal stem cell research is ethical. However, if the abortion of fetuses is

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the means by which fetal stem cells are obtained, then an unethical means (the killing of human beings) is involved. Since umbilical cords are detached from infants at birth, umbilical cord blood is an ethical source of stem cells.

4. Have scientists been successful in using non-embryonic stem cells to treat disease?

Yes. In contrast to research on embryonic stem cells, non-embryonic stem cell research has already resulted in numerous instances of actual clinical benefit to patients. For example, patients suffering from a whole host of afflictions—including (but not limited to) Parkinson’s disease, autoimmune diseases, stroke, anemia, cancer, immunodeficiency, corneal damage, blood and liver diseases, heart attack, and diabetes—have experienced improved function following administration of therapies derived from adult or umbilical cord blood stem cells. The long-held belief that non-embryonic stem cells are less able to differentiate into multiple cell types or be sustained in the laboratory over an extended period of time—rendering them less medically-promising than embryonic stem cells—has been repeatedly challenged by experimental results that have suggested otherwise. (For updates on experimental results, access www.stemcellresearch.org.)

5. Have scientists been successful in using embryonic stem cells to treat disease?

Though embryonic stem cells have been purported as holding great medical promise, reports of actual clinical success have been few. Instead, scientists conducting research on embryonic stem cells have encountered significant obstacles—including tumor formation, unstable gene expression,

and an inability to stimulate the cells to form the desired type of tissue. It may indeed be telling that some biotechnology companies have chosen not to invest financially in embryonic stem cell research and some scientists have elected to focus their research exclusively on non-embryonic stem cell research.

6. What is the relationship between embryonic stem cell research and “therapeutic” cloning?

Another potential obstacle encountered by researchers engaging in embryonic stem cell research is the possibility that embryonic stem cells would not be immunologically compatible with patients and would therefore be “rejected,” much like a non-compatible kidney would be rejected. A proposed solution to this problem is to create an embryonic clone of a patient and subsequently destroy the clone in order to harvest his or her stem cells. Cloning for this purpose has been termed “therapeutic” cloning—despite the fact that the subject of the research—the clone—is not healed but killed.

7. Why should we value the human embryo?

Underlying the passages of Scripture that refer to the unborn (Job 31:15; Ps. 139:13-16; Luke 1:35-45) is the assumption that they are human beings who are created, known, and uniquely valued by God. Genesis 9:6 warns us against killing our fellow human beings, who are created in the very image of God (Gen. 1:26-27). Human embryonic life—as well as all of creation—exists primarily for God’s own pleasure and purpose, not ours (Col. 1:16).

8. Shouldn’t it be ethical to allow the destruction of a few embryos in

order to help the millions of people who suffer from diseases such as Parkinson’s and heart disease?

Many proponents of human embryonic stem cell research argue that it is actually wrong to protect the lives of a few unborn human beings if doing so will delay treatment for a much larger number of people who suffer from fatal or debilitating diseases. However, we are not free to pursue gain (financial, health-related, or otherwise) through immoral or unethical means such as the taking of innocent life (Deut. 27:25). The medical experiments in Nazi Germany should serve as just one reminder of the consequences of doing evil in the name of science. We must not sacrifice one class of human beings (the embryonic) to benefit another (those suffering from serious illness). Scripture resoundingly rejects the temptation to “do evil that good may result” (Rom. 3:8).

9. What does the law say and can I have a voice?

No forms of stem cell research or cloning are prohibited by federal law, though some states have passed partial bans. Private funds can support any practice that is legal, whereas federal funds cannot be used for research on embryonic stem cell lines unless they existed before August 9, 2001. You can express your objection to the destruction of human embryos and your enthusiastic support for adult stem cell research by writing, telephoning, or e-mailing your U.S. Senators and Representatives. Contact information for Congress is available at www.senate.gov or www.house.gov, and through the Capitol switchboard at (202) 224-3121. Also contact your state legislators. You can stay informed via the web sites sponsored by The Center for Bioethics and Human Dignity: www.cbhd.org and www.stemcellresearch.org. †

Five Problems With Human Embryonic Stem Cell Experimentation

From: Michael Schwartz, www.cwfa.org November 23, 2004

- ◆ First, there are currently no restrictions on experiments that entail the destruction of human embryos. The issue is not “restrictions” on embryonic stem cell research, but simply that the federal government has not subsidized it.
- ◆ Second, the federal government has been pouring hundreds of millions of dollars into stem cell research that does not entail the destruction of human beings and with astounding results. The numerous sources for stem cells include umbilical cord blood, bone marrow, skin and even fat tissue. The extraction of these stem cells presents no ethical dilemma at all. Therapies based on these “adult” stem cells have produced results that are nothing short of miraculous. The blind have regained sight, the lame able to walk, damaged hearts have been made whole. These are breathtaking achievements, with more to come. The development of regenerative medicine based on stem cell therapies is probably the greatest medical advance of all time.
- ◆ Third, not one person on earth has been cured of any disease or has had his condition improved even a little bit as a result of treatments with embryonic stem cells. On the contrary, a disturbingly large proportion of the ... mice treated with embryonic stem cells have developed cancer.
- ◆ Fourth, embryonic stem cells replicate far more rapidly and have considerably greater plasticity than adult stem cells. In the laboratory, that is a real advantage, because an experiment can be conducted much more rapidly (and cheaply) if you can produce a cell line in three days instead of 30 days. But excessively rapid cell replication in a patient is the very definition of cancer.
- ◆ Fifth, the realization that embryonic stem cell research is a therapeutic dead-end is sinking in among investors. The biotech companies that were flush a few years ago are looking ahead to hard times unless they can get a new infusion of cash. And what better source than the public, who will not be represented at stockholder meetings to demand accountability for the expenditure of their hard-earned dollars? †



Current Stem Cell Treatments

From: www.stemcellresearch.org

Adult Stem Cells

1. Brain Cancer
2. Retinoblastoma
3. Ovarian Cancer
4. Merkel Cell Cancer
5. Testicular Cancer
6. Lymphoma
7. Acute Lymphoblastic Leukemia
8. Acute Myelogenous Leukemia
9. Chronic Myelogenous Leukemia
10. Juvenile Myelomonocytic Leukemia
11. Angioimmunoblastic Lymphadenopathy with Dysproteinemia
12. Multiple Myeloma
13. Myelodysplasia
14. Breast Cancer
15. Neuroblastoma
16. Non-Hodgkin's Lymphoma
17. Hodgkin's Lymphoma
18. Renal Cell Carcinoma
19. Various Solid Tumors
20. Soft Tissue Sarcoma
21. Scleromyxedema
22. Multiple Sclerosis
23. Crohn's Disease
24. Rheumatoid Arthritis
25. Juvenile Arthritis
26. Systemic Lupus
27. Polychondritis
28. Systemic Vasculitis
29. Sjogren's Syndrome
30. Behcet's Disease
31. Myasthenia Gravis
32. Red Cell Aplasia
33. Autoimmune Cytopenia
34. X-Linked Lymphoproliferative Syndrome
35. X-Linked Hyperimmunoglobulinemia-M Syndrome
36. Severe Combined Immunodeficiency Syndrome-X1
37. Sickle Cell Anemia
38. Sideroblastic Anemia
39. Waldenstrom's Macroglobulinemia
40. Aplastic Anemia
41. Amegakaryocytic Thrombocytopenia
42. Chronic Epstein-Barr Infection
43. Fanconi's Anemia
44. Diamond Blackfan Anemia
45. Thalassemia Major
46. Stroke
47. Osteogenesis Imperfecta
48. Sandhoff Disease
49. Corneal Degeneration
50. Hemophagocytic Lymphohistiocytosis
51. Primary Amyloidosis
52. Limb Gangrene
53. Surface Wound Healing
54. Heart Damage
55. Parkinson's Disease
56. Spinal Cord Injury

Embryonic Stem Cells

None

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Letter to Newsweek

From: John Kilner, www.cbhd.org

Thank you for devoting a cover story to the crucial topic of stem cell research in your October 25 issue. Since the debate is over whether to put all our efforts into adult stem cell research or to divert some of these resources to embryonic stem cell research, it is surprising that the article hardly even mentions adult stem cells!

Adult stem cell research has a broad, solid base of success. Patients suffering from a whole host of afflictions—including (but not limited to) Parkinson's disease, autoimmune diseases, stroke, anemia, cancer, immunodeficiency, corneal damage, blood and liver diseases, heart attack, and diabetes—are already reaping health improvements following treatments with adult stem cells. Human embryonic stem cell research to date has yielded no such benefits.

Recent experimental results have repeatedly demonstrated that adult stem cells are able to differentiate into multiple cell types—the very ability that supporters of embryonic stem cell research mistakenly claim is unique to embryonic stem cells. Moreover, research on embryonic stem cells has revealed significant and sometimes startling obstacles to their use—including tumor formation, unstable gene expression, and an inability to

stimulate the cells to form the desired type of tissue.

There are ethical alternatives for achieving the benefits that are purported for embryonic stem cell research, and they should be actively pursued instead. If we care about people suffering right now, Christopher Reeve's death is a wake-up call to pour all possible resources into adult stem cell research, which is producing cures *now*. ✚

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