

Mr Chairman and Members of the Human Services Committee,

EXHIBIT ~~11~~ 11
DATE 3-30-05
5-18

I am here today to ask you to please vote against SJ18. This bill would ask President Bush to reverse his ban on federal funding for controversial embryonic stem cell research. The fact that this subject is so controversial should be enough reason to not spend public tax dollars on it. This ban does not limit private funding of embryonic stem cell research in any way, nor does it limit the cell lines that can be experimented with using private donations.

This resolution is outdated and misrepresentative of stem cell research; making it sound as if embryonic stem cells are the future of healing. This is simply not true. So far, success with animal embryonic stem cells is severely limited and has not moved beyond animal studies because of their unpredictability and tumor causing propensity. They tend to keep growing and become cancerous in certain situations. Research is showing ESCs difficult to control bringing worries of serious side effects. ESCs also are usually rejected by the recipients immune system. Scientists don't even know how to instruct ESCs in culture to produce the desired cell type. Quoting the Stanford.edu site, "If undifferentiated embryonic stem cells are taken from the lab and injected into a mouse, a benign tumor can develop. For this reason, scientists do NOT plan to use undifferentiated ESCs for transplants or other therapeutic applications." The ESC research supporters say that this tumor-causing undifferentiation is what makes embryonic SC so much better than other stem cells! Even if these obstacles are overcome, experts estimate 10 - 15 years before ESCs can be used on a large scale.

This resolution states that all available ESC lines are contaminated. This also is false. New lines are continually being developed; Harvard alone will release 17 new lines this month. More are continually being developed and released despite lack of federal funding. In 2 news releases dated March 8, 2005, we see that the risk of contamination by mouse feeder cells is a thing of the past. A.) Geron, a biopharmaceutical corporation, announced publication of studies that human ESCs can be propagated in culture without the need for feeder cells or media conditioned by feeder cells. B.) Advanced Cell Technology in Worcester, Mass., released this statement "completely fresh supplies of human ESCs have been created for the first time without having to grow them on potentially contaminating mouse feeder cells. We are now working on lines which will be completely human," states Bob Lanza, "there is nothing in the animal layer that can't be replaced with a human equivalent."

Because of their unpredictability and tumor causing properties, embryonic SC have NOT been used in ANY clinical trials. The real healing lies in Adult Stem Cell research. The reason that we don't hear much about the incredible benefits resulting from ASC research is that ASC work is not controversial! Controversy is what sells newspapers, magazines, and air time. The media encourages false and incomplete information to make money! The pharmaceutical monopoly is a staunch supporter of ESCR because they know that it is years away from any sort of clinical application. In the mean-time, our seriously ill citizens must rely on patented prescription products to make their lives more comfortable, bringing in billions of dollars for each company.

This resolution states that "the President's policy now means that one of the most amazing discoveries of modern times will be beyond the reach of most of our hospitals and universities, our public health organizations, and some of our most trusted and dedicated scientists..." is misleading. Many of the available lines belong to Medical Departments in Universities, who are making them available for the use of others; however, ESCR is a very specialized field, with the ability and means of research available to few, despite federal funding or not. The very limited amount of surplus embryos created for in-vitro fertilization is not nearly enough to satisfy the need within ESC research, and therefore America will begin to create these tiny humans for the sole purpose of destroying them. The labs, public or private, that control these little lives will be able to ask any price for them, and they will not be readily available to all. There is also the question of how ESC researchers will acquire the Millions of human eggs they will need to establish enough lines for the amount of research that is being called for. Are we going to then begin to create female fetuses, to be killed at a later gestational date, in order to harvest eggs from them?

The new medical breakthroughs do not involve ESCs, but rather Adult Stem Cells. These are stem cells that are harvested any time after birth. Dr. Kelley Hollowell states, "Selfishly motivated and purposefully deceitful attempts by scientists and the liberal media to confuse ESCs with the progress and advances of ASCs, severely harms the public and delays the stream of miracles for those suffering with debilitating diseases." Adult stem cells are readily available to all, not just the few that have the medical technology to create and destroy tiny humans to harvest their ESCs.

President Bush has federally funded ASC research with hundreds of millions of federal dollars. Because of the moral controversy over the value of life, NO federal funds should be directed to ESCR. ALL public funds for stem cell research need to be funneled into ASC research which has the most potential, fewest drawbacks, and is already producing tangible results in real people; not used to fund the empty promises from ESCR scientists who are trying to keep their pet projects funded.

The Canadian based ALS (Lou Gehrig's Disease) site states that "in the long run, Adult stem cells may still prove the best choice (over ESCs), for cell therapy as they would offer distinct advantages; no problems with immune rejection, they are less likely to promote tumors, and there is a ready supply of SC in adult tissue."

Adult stem cells are found in most areas of the body, and more sources are being discovered all the time. ASCs can currently be harvested from the skin, hair follicles, muscle, bone marrow, body fat, cartilage, brain tissue, the spinal cord, blood, along with the placenta and umbilical cord, among others. They are available in every person at every age, and their numbers can be expanded in the lab.

New research disproves the dogma that SC of each organ are committed to making that particular organ.

- March 23, 2005 - Researchers from Queen-Land's Griffith University, and Professor Alan MacKay-Sims, say that unlike embryonic stem cells, nose stem cells could theoretically be harvested throughout someones life. "We found cells that could turn into lots of cells that you wouldn't normally find in the nose, like liver, or heart, or muscle, so these cells apparently have the ability similar to embryonic stem cells to generate other kinds of cells if they're given the right opportunity. It's great to think that one could have one's own cells for ANY kind of cell transplantation therapy".

These olfactory stem cells did not have the problem of rejection or forming tumors as is common with ESC. "We believe the results of this (4 year) comprehensive project provides important data supporting the use of Adult stem cells in lieu of ESC." - Stephen Chang Ph.D.

- Switzerland's Modex therapeutics sells skin grown from stem cells found in human hair follicles that are in every way, including cost, superior to standard skin grafts used for burn patients and those with non-healing sores.

- Bone marrow has the ability to generate many cell types, thought not to be possible. "We're finding more and more that the body has remarkable plasticity, and bone marrow seems to be very rich in cells that have potential to turn into cells of other organ systems." Hugh Taylor, MD Yale Univ. School of Medicine, July 2004.

- The University of Minnesota's Stem Cell Institute have found stem cells in human bone marrow with the apparent potential to form all 3 layers of Embryonic germ layers. Since then, two other sets of researchers have found 2 separate types of ASC that are also as versatile, supporting U of M's findings. Dr. David Hess, neurologist at the Medical College of Georgia at Augusta stated, "They (ASCs) have basically all the benefits of ESCs and none of the drawbacks." Scientists accomplish their goal to further fund their own labs and protect their jobs by exaggerating the promise of ESC research while they downplay the proven value of ASC research!

One obvious example of un-merited bias in SC research is happening in our country now. Harvard researcher Dr. Denise Faustman was the first to CURE diabetes in mice, by restoring insulin-producing cells in the pancreas with ASC already in the body. The Juvenile Diabetes Research Foundation International refuses to even look at her work, and continues to pour millions of dollars into funding ESC though there is no hope for a cure in the near future using ESC. If a cure were readily available, the JDRFI would have worked themselves out of a job, so they continue to push ignorance. Both Canada and the U.K. have completely cured type 1 diabetes multiple times using cord and cadaver stem cells.

Stanford's educational site, writing on Huntington's Disease, "Based on what scientists currently know, it is unclear whether pluripotent or ASCs will be more useful for the development of therapies. As far as scientists can tell at this point, neither one is probably better than the other."

In 2003, Drs in Michigan gave a 16 year old boy an emergency dose of endogenous (meaning self-sourcing) SCs after he suffered a massive heart attack. Tests 6 mo. later revealed substantial improvement in heart function. When the FDA heard, they denied any more procedures or clinical trials!

The real medical break-through is not in embryonic SCs, but in Cord Blood Stem Cell research. Cord blood stem cells, often called neonatal stem cells, are harvested from the placenta and umbilical cord after a delivery. It is not controversial because it relies on the birth of, not the death of, a child.

Cord Blood stem cells are being used in over 300 clinical trials (0 for ESC), and have over 3,500 transplants already, since their 1st clinical use in 1988 to treat a terminal 5 year old who is still alive. In several other countries, cord blood is routinely collected and banked.

- Cord blood has approx. 10 times the repopulation potential of bone marrow.
- Cord blood is already being used extensively to treat leukemia.
- Cord blood can expand over 100Xs in culture (Journal of Clinical Investigation, 2002)
- Cord blood is being used to treat over 75 diseases, with applications increasing.
- Cord blood not harvested is discarded, it is easily collected, and poses no risk to the donor. Each birth provides 3 to 6 fluid ounces, and research is showing it's ability to be stored indefinitely.
- Cord blood collection is a non-invasive procedure.
- Cord blood is available, at no cost, in vast abundance, as thousands of babies are born each day.
- Cord blood can easily be mixed to get adequate dosage for adult application by simply matching major histo-compatibility markers.

March 28, 2005 - Researchers at Children's Hospital Boston and the Dana-Faber Cancer Institute have found the placenta harbors great numbers of blood forming stem cells. Only the fetal liver contains more - then we are dealing with 2nd and 3rd trimester abortions, which are even more controversial. These blood forming stem cells in the placenta are valuable in treating blood cancers like leukemia. "There must be something unique about the placenta that nurtures blood stem cells and discourages them from differentiating. If we figure out what is special about the placental environment, we may learn how to grow blood stem cells in large quantities for clinical application." - Dr. Stuart Orkin, Senior Investigator.

March 23, 2005 - Researchers at Duke's Comprehensive Cancer Center have validated that stem cells in umbilical cord blood can infiltrate damaged heart tissue, and further transform themselves into the kind of heart cells needed to halt further damage. Duke physicians have been using cord blood to correct heart, brain, and liver birth defects in children.

While America wages a war within itself over ESC research, and whether it is morally right to cannibalize our own kind, the rest of the world is moving on - with ASCR; some of the greatest medical advances coming from research involving Cord Blood. Korea alone holds 12% of the world's banked cord blood. Later this year they will open the world's first hospital devoted entirely to stem cell research.

To funnel money into controversial ESC research means to take it from other research - in this case, ASC research. Given the facts that ESC have no accomplishments under their belt despite millions in private funding, and previous federal funding, and that ASCs are already treating a myriad of diseases, this resolution is not about healing our citizens, it is an attempt to validate the killing of the helpless.

Human life should not be scavenged even at it's most immature stages; please vote NO on SJ18!

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Bioethics/Sanctity of Human Life

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Adult Stem Cells: It's Not Pie-in-the-Sky

February 3, 2005

by Carrie Gordon Earll

Embryonic stem cells have not cured or successfully treated a single patient. Contrast that with the more than 70 conditions that are treatable using non-embryonic stem cell therapies.

One of the hottest debates in bioethics today surrounds research using stem cells taken from either *in vitro* fertilization or cloned human embryos. From state legislatures and the halls of Congress to the United Nation, the controversy over whether to ban (or fund) such research rages.

Human cloning for embryonic stem cell research creates human embryos virtually identical to a patient's genetic composition. The embryo's stem cells are then harvested — a process that always destroys the embryo. The same fatal process to collect human embryonic stem cells is also used to destroy embryos formed by *in vitro* fertilization.

Speculation regarding the scientific promise of human embryonic stem cells leads some to dismiss the ethical questions raised by the embryo's destruction. However, embryonic stem cells (human or animal) have not "cured" or treated a single human patient.

Fortunately, there are alternative sources of stem cells for research that do not require the destruction of human life.

Non-embryonic (or adult) stem cells are readily available in sources such as bone marrow, umbilical cord blood, the pancreas and brain, and no lives are lost in the collection process. Currently, more than 70 identified diseases and disabilities that are treatable using non-embryonic stem cells, including breast cancer, leukemia and sickle cell anemia.¹ Researchers also have successfully treated patients with Parkinson's disease, multiple sclerosis, heart damage and spinal cord injuries using non-embryonic stem cell sources.

Adult stem cells provide tangible results to patients today. Consider these examples:

Tangible Therapies for Today

Acute Myeloid Leukemia - Sixteen-year-old Nathan Salley is alive today, thanks to stem cells from umbilical cord blood. Nathan told a congressional subcommittee, "I am living proof that there are promising and useful alternatives to embryonic stem cell research. . . . Embryonic stem cell research did not save me - cord blood research did."²

Diabetes - Eleven out of 15 Type 1 diabetes patients are "completely off insulin" after receiving adult pancreatic cell transplants.³

Diabetes - Researchers at Harvard Medical School used animal adult stem cells to grow new islet cells to combat diabetes. Researcher Denise Faustman recalled, "It was astonishing! We had reversed the disease without the need for transplants." Plans for human trials are underway.⁴

Heart Disease - German heart specialist Bodo Eckehard Strauer successfully treated a heart patient using stem cells from the man's bone marrow: "Even patients with the most seriously damaged hearts can be treated with their own stem cells instead of waiting and hoping on a transplant." Dr. Strauer explained.⁵

Heart Disease - "Four out of five seriously sick Brazilian heart-failure patients no longer needed a heart transplant after being treated with their own stem cells."⁶

Heart Disease - "Patients with heart failure experienced a marked improvement after being given injections of their

own stem cells," thanks to research at the University of Pittsburgh.⁷

Heart Disease - Dr. Eduardo Marban, chief of cardiology at the Johns Hopkins School of Medicine, called the use of adult stem cells to treat failing hearts, "[t]he single most exciting development in cardiology in the last decade."⁸

Multiple Sclerosis (MS) - Thirty-six-year old Susan Stross is one of more than 20 MS patients whose conditions have remained steady or improved after receiving an adult stem cell transplant. The same results are reported with several hundred patients worldwide.⁹

Multiple Sclerosis (MS) - Research conducted by Dr. Mark Freedman at the University of Ottawa suggests that most of the 32 MS patients in the trial "experienced clinical stabilization or improvement of symptoms."¹⁰

Non-Hodgkin's Lymphoma - Forty-year-old Mark Fulford was not a match for a conventional bone marrow transplant, so doctors turned to stem cells found in umbilical cord blood. "There are people alive now who wouldn't have been without this, and I'm living proof."¹¹

Paralysis/Spinal Cord Injury - After sustaining paralyzing spinal cord injuries, Susan Fajt, Laura Dominguez and Erica Nader of the U.S. are each regaining muscle control and walking with the aid of braces due to stem-cell transplants from their own nasal cavities conducted in Portugal. Six paralyzed Russian patients are also walking thanks to a similar therapy.¹²

Paralysis/Spinal Cord Injury - Maria da Graca Pomeceno of Brazil regained her ability to walk and talk after a bone marrow stem-cell transplant from her pelvis.¹³

Paralysis/Spinal Cord Injury - Treatment using stem cells derived from umbilical cord blood allow Hwang Mi-Soon of South Korean to walk again with the aid of a walker. "This is already a miracle for me," says Mi-Soon.¹⁴

Parkinson's Disease - A California man with Parkinson's disease experienced more than an 80 percent reduction in his symptoms after he received an injection of his own neuronal (brain) stem cells. Dennis Turner says before the treatment, "I couldn't put my contact lenses in without a big problem. Now it's not problem."¹⁵

Sickle Cell Anemia - In his struggle against sickle cell anemia, seventeen-year old Keone Penn experienced suicidal thoughts before an umbilical cord blood transplant cured him of the disease. Today, Penn says, "Sickle cell is now part of my past...Cord blood saved my life."¹⁶

Stroke - Catholic University of Korea researchers report "great improvement in the paralysis symptoms and speech disorders" in three of five stroke patients who received transplants with their own bone marrow stem cells.¹⁷

Stroke - Brazilian doctors will test a similar treatment on 15 patients after encouraging results with one stroke patient.¹⁸

Promise for Tomorrow

Reports of "Master Stem Cell" discoveries -

"A stem cell has been found in adults that can turn into every single tissue in the body. It might turn out to be the most important cell ever discovered."¹⁹

Researchers at New York University School of Medicine announced, "There is a cell in the bone marrow that can serve as the stem cell for most, if not all, of the organs in the body. . . . This study provides the strongest evidence yet that the adult body harbors stem cells that are as flexible as embryonic stem cells."²⁰

McGill University researchers discover "stem cells deep in the skin of rats and humans that can become fat, muscle or even brain cells. . . . Scientists are driven by the hope of bringing science closer to treatments for spinal cord injuries, juvenile diabetes, heart disease and brain disorders - treatments made from patients' own cells."²¹

These are stem cells from adult bone marrow that do not trigger rejection, "even after the cells differentiate into specialized tissues such as bone or fat." The "cells seem to go only to damaged areas . . . (turning) into heart muscle, blood vessels, and fibrous tissue."²²

Carrie Gordon Earle is the Senior Policy Analyst for Bioethics at Focus on the Family and a fellow with the Center for Bioethics and Human Dignity.

(This page was originally posted on September 12, 2003.)

For more information, see expert testimony given at the following U.S. Senate hearings:

June 12, 2003: **Hearing on Advances in Adult and Non-Embryonic Stem Cell Research**

July 14, 2004: **Adult Stem Cell Research**

September 29, 2004: **Embryonic Stem Cell Research: Exploring the Controversy**

¹National Marrow Donor Program, "Diseases Treatable by Stem Cell Transplant," **National Marrow Donor Program**

²"Teenager testifies he's 'living proof' of stem-cell option," *Denver Post*, July 22, 2001.

³"Cell grafts lend freedom to diabetics," *Medical Post*, June 19, 2001.

⁴"Adult stem cells effect a cure," *Harvard University Gazette*, July 19, 2001.

⁵"Stem cell therapy repairs a heart," *Daily Telegraph* (London), Aug. 25, 2001.

⁶"Stem cells used to repair heart tissue," MSNBC News, accessed on September 8, 2003 at <http://www.msnbc.com/news/959999.asp>

⁷"Stem cell therapy improves heart failure," *Reuters*, January 25, 2005.

⁸"Scientists try to heal heart with stem cells," *Baltimoresun.com*, December 13, 2004.

⁹"High on the future: Already saving lives, stem cell research may soon be in full swing," *Seattle Times*, Aug. 20, 2001.

¹⁰"Mixed news on bone marrow transplant," *Paraplegia News*, June 1, 2003.

¹¹"Different kind of stem cell already saving lives," (Denver) *Rocky Mountain News*, August 18, 2001.

¹²"Texas stem cell recipients revive debate," *Austin American-Statesman*, July 15, 2004; "Paraplegic improving after stem-cell implant," *Indianapolis Star*, January 16, 2005; "Doctors in Russia prove stem cells can be used in treating spine injuries," *RIA Novosti*, December 6, 2004.

¹³"Stem cell treatment allows paralyzed Brazilian to walk, talk again," *Agence France Presse*, November 19, 2004.

¹⁴"Umbilical cord cells allow paralyzed woman to walk," *Daily Telegraph* (London), November 30, 2004.

¹⁵"Stem cell transplant works in California case," *Washington Post*, April 9, 2002.

¹⁶"A voice of hope rings out in Senate," *Atlanta Journal-Constitution*, June 13, 2003.

¹⁷"Stem cell implant effective in treating cerebral infarction," *The Korea Times*, December 9, 2004.

¹⁸"Cells used in stroke work," *Ottawa Sun*, November 20, 2004.

¹⁹"Ultimate stem cell discovered," *NewScientist.com*, Jan. 23, 2002.

²⁰"Researchers discover the ultimate adult stem cell," *Science Daily Magazine*, May 4, 2001.

²¹"Stem cell research matures in Montreal studies," *Los Angeles Times*, Aug. 19, 2001.

²²"No matter who you are, your body won't reject this universal healer," *New Scientist*, Dec. 15, 2001.

The complete text of this article is available at:

<http://family.org/cforum/fosi/bioethics/facts/a0035420.cfm>

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