# ADULT STEM-CELL TREATMENTS: A BETTER WAY

*By Stephanie Porowski*

"I HOPE WE WILL ALWAYS BE GUIDED BY BOTH INTELLECT AND HEART, BY BOTH OUR CAPABILITIES AND OUR CONSCIENCE."

—PRESIDENT GEORGE W. BUSH[1]

Few areas of scientific study hold as much potential as adult stem-cell research. This research may lead one day to cures for terminal and debilitating diseases, such as diabetes, Alzheimer's and Parkinson's, and is already generating medical breakthroughs. Indeed, scientists laud stem-cell treatments as the "miracle cure" of the 21st century. However, this issue, like so many areas of biotechnology, sparks a heated debate between scientists and ethicists. While adult stem-cell research has no moral problems, embryonic stem-cell research (ESCR) ignores the sanctity of human life in the name of scientific "advancement."

President George W. Bush spoke on this issue in a 2001 address, remarking that ESCR "lies at a difficult moral intersection, juxtaposing the need to protect life in all its phases with the prospect of saving and improving life in all its stages."[2] Too many scientists and politicians have become focused on making breakthroughs while ignoring their responsibility to protect life. Many ignore the bright prospect of adult stem-cell treatments only to celebrate the still-dim possibility of using embryonic stem cells for miracle cures. Yet, while adult stem-cell treatments often lack media hype and celebrity spokesmen, they consistently prove themselves in study after study. Adult stem cells are poised to improve the lives of millions.

## WONDER CELLS

Stem cells are unspecialized cells that continually renew themselves through cell division.[3] Unlike other cells, stem cells begin as "blanks" without a dedicated task, but with an ability to become specialized. Scientists hope to use this capability to replace cells damaged by a broad spectrum of diseases.[4]

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[1] "Remarks by the President on Stem Cell Research," 9 August 2001 from the White House Web site, as found at http://www.whitehouse.gov/news/releases/2001/08/20010809-2.html.
[2] Ibid.
[3] "Stem Cells: A Primer," from the National Institutes of Health Web site, as found at http://www.nih.gov/news/stmcell/primer.htm.
[4] "Baby Teeth Offer Another Effective Source of Adult Stem Cells," United Press International, from the Christian Life Resources Web site, as found at http://www.christianliferesources.com/cgi-bin/prDisplay.pl?displayContent&releaseID=3788&categoryID=56.

Stem cells come in two types: embryonic and adult. Found in human embryos, embryonic stem cells have not yet received an "assignment."[5] For this reason, they can develop into a number of different human cell types.[6] Researchers obtain embryonic stem cells from embryos created in fertility clinics and donated to medical research, but many scientists hope to use cloning to mass-produce embryos for this research.

Unlike embryonic cells, adult stem cells can be taken from a variety of sources, including the placenta, umbilical-cord blood, brain tissue, skin, bone marrow, hair and body fat, with no destruction of human life at any stage.[7] Adult stem cells normally develop into their tissue of origin, but increasing evidence shows that adult stem cells have the ability to develop into other cell types,[8] making these cells a viable alternative to embryonic stem cells.

## EMBRYONIC STEM CELLS: UNNECESSARY SACRIFICE

The alternative of adult stem cells is greatly needed in a scientific community willing to go to nearly any length for medical advancement. The use of the human embryo as a source of stem cells holds terrible ramifications, because the process of removing stem cells destroys the embryo. While scientists try to justify their research with the notion that embryos are not yet human life, most ethicists dismiss this idea for what it clearly is—a lie, a feeble attempt to rationalize their experiments.

According to C. Ward Kischer, a human embryologist, "Virtually every human embryologist and every major textbook of Human Embryology states that *fertilization marks the beginning of the life of the new individual human being* [Emphasis in the original]."[9] Likewise, Dr. Alfred M. Bongioanni, professor of obstetrics, University of Pennsylvania, writes, "I have learned form my earliest medical education that human life begins at conception."[10] Professor Micheline Matthews-Roth, Harvard University Medical School, states, "It is scientifically correct to say that an individual human life begins at conception."[11] Carry Gordon Earll, Focus on the Family policy expert, writes:

> Biologically, human life begins at conception … when sperm and egg unite. This new embryonic life is 100 percent human, complete with 46 human chromosomes and his or her own genetic code. As the embryo grows, he begins the journey through all of life's stages: embryo, fetus, infant, toddler, adolescent and adult. To classify any one of these stages as not human discriminates based on age, appearance or location.[12]

President Bush agrees. He recalls an ethicist's warning, saying, "Make no mistake, he told me, that cluster of cells is the same way you and I, and all the rest of us,

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[5] Carrie Gordon Earll, "Stem Cell Research: Truth vs. Hype," *Focus on the Family*, as found at http://www/family.org/fofmag/sl/a0024064.cfm.
[6] Dianne N. Irving, "The Stem Cell Decision in the Labs, Beware of Flawed Ethics and False Science," 15 July 2001, as found at http://www.newsday.com/coverage/current/books/Sunday/nd9784.htm.
[7] Op cit.
[8] "Stem Cells: A Primer."
[9] C. Ward Kischer, "When Does Human Life Begin? The Final Answer," lifeissues.net, as found at http://www.lifeissues.net/writers/kisc/kisc_04whenlifebegins1.html.
[10] Randy Alcorn, "When Does Each Human Life Begin? The Answer of Science," Eternal Perspective Ministries, as found at http://www.epm.org/lifesci.htm.
[11] Ibid.
[12] Kischer.

started our lives. One goes with a heavy heart if we use these, he said, because we are dealing with the seeds of the next generation."[13]

Many remain undecided about the status of the embryo. Hilde Lindemann Nelson, Ph.D., associate professor of philosophy at Michigan State University, says, "I don't think there is an easy answer to what we do with these embryos because we don't yet have any common standing on what kind of moral status they have."[14] Former President Ronald Reagan once stated, "If there's doubt about it, and if there's mystery, then shouldn't we be extraordinarily careful?"[15] The smallest possibility of destroying a human life should rule out this research. Science should never advance by sacrificing the very lives it should be trying to save.

Author of *Culture of Death: The Assault on Medical Ethics in America*, Wesley J. Smith, asks, "Once embryos can be exploited for their stem cells to promote human welfare, what is to stop scientists from manipulating embryos to control and direct human evolution—equally for the purpose of improving the human future?" He notes that many of those who signed a recent letter to President Bush urging an end to the ban on federal funding for human embryo research were scientists and bioethicists favoring eugenics,[16] a movement that ignores the sanctity of human life and undermines God's role in His creation.

C.S. Lewis emphasized these dangers when he wrote, "If any age really attains, by eugenics and scientific education, the power to make its descendants what it pleases, all men who live after are the patients of that power," slaves to the "dead hand of the great planners and conditioners."[17]

Frighteningly, the 21st century appears to be that age, and scientists may enter this era through the backing of a society that allows them to devalue human life at its earliest and most vulnerable stage.

Not only does the use of embryonic stem cells imperil the sanctity of human life; this "medical miracle" has little scientific validity. These stem cells have not shown any therapeutic benefits to patients. Even leading proponents of ESCR, such as the American Association for the Advancement of Science, admit, "the human embryonic stem cells … that made headlines in November 1998 because they can, in theory, develop into any cell type have so far produced relatively modest results."[18]

In fact, in some cases, embryonic stem cells have produced horrific results. A May 1996 *Neurology* article reported one such instance where a patient suffering from Parkinson's disease died after embryo cells were transplanted into his brain. His autopsy revealed that his death had been caused by growth of bone, skin and hair in the brain, probably due to the "transformation of undifferentiated stem cells into non-neural tissues."[19] The Geron Corporation, the leading funder of embryonic research in the

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[13] "Remarks by the President on Stem Cell Research."
[14] Vida Foubister, "Extra Embryos: What is Their Future?" from the Web site for *American Medical News*, 13 November 2001, as found at http://www.ama-assn.org/sci-pubs/amnews/pick_00/prsa1113.htm.
[15] Joel Belz, "If There is Mystery," *WORLD*, 18 August 2001, 5.
[16] Wesley J. Smith, "The Politics of Stem Cells: The Good News You Never Hear," from the National Right to Life Web site, 21 March 2001, as found at http://www.nrlc.org/news/2001/NRL04/wes.htm.
[17] "The Sanctity of Life in a Brave New World: A Manifesto on Biotechnology and Human Dignity," from the Council for Biotechnology Policy Web site, as found at http://www.biotechpolicy.org/BiotechPolicy/ChannelRoot/Features/The+Sanctity+of+Life+in+a+Brave+New+World.htm.
[18] Richard M. Doerflinger, "Human Embryo Research: Where We've Been, Where We Should Go," from the National Right to Life Web site, 9 February 2001, as found at http://www.nrlc.org/news/2001/NRLO2/doer/htm/.
[19] Smith.

United States, published further startling developments. It reported that after transplanting human embryonic stem cells into rats' brains, the cells "did not readily differentiate into brain cells," but "stayed in a disorganized cluster, and brain cells near them began to die."[20]

Patients treated with these cells risk serious side effects, such as tumor formation, unstable gene expression (abnormal production of proteins from genes) and inability to stimulate the cells to grow certain types of tissue.[21] John B. Shea, M.D. writes, "Even if a specific tissue is successfully produced from embryonic stem cells … therapeutic use of this tissue may cause abnormalities in the person receiving the tissue graft."[22]

Moreover, increasing evidence proves embryonic stem cells difficult to control and preserve. Dr. Peter Andrews of the University of Sheffield, England, says, "Simply keeping human embryonic stem cells alive can be a challenge." Doug Melton, Harvard University researcher, adds, "In my view [human embryonic stem cells] would degrade with time."[23] Bioethicist Glenn McGee told the *Technology Review* that "the emerging truth in the lab is that pluripotent stem cells [embryonic stem cells able to develop into all cell types] are hard to reign in. The potential that they could explode into a cancerous mass after a stem cell transplant might prove to be the Pandora's box of stem cell research."[24]

## AMAZING ADVANCES

While ESCR consistently turns up dead ends and sometimes-deadly results, adult stem cells continue to amaze researchers with their powers. In fact, the only real medical advances from stem cells have come with adult stem-cell treatments. Hudson Institute Senior Fellow Michael Fumento asserts the advantage of adult stem cells. He says, "Embryonic stem cell research is so far behind it's like a joke. … We're getting everything we need out of nonembryonic stem cells, and what we're getting is incredible. Christopher Reeve will walk again because of adult-stem cell research."[25]

Recent scientific developments prove this statement true. A few include:

- Italian scientists generated muscle tissue using adult rat brain cells. Scientists hope to use this discovery to improve organ transplant therapy.
- University of South Florida researchers injected brain cells, developed from human stem cells found in umbilical-cord blood, into rats "genetically engineered to have strokes." They report that the stem cells "integrated seamlessly into the surrounding brain tissue, maturing into the type of cell appropriate for that area of the brain." This finding shows the versatility of cord-blood stem cells and could improve the treatment of neurological diseases.[26]

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[20] Op cit.
[21] Linda K. Bevington, "Stem-Cell Research and 'Therapeutic' Cloning: A Christian Analysis," from the Web site for the Center of Bioethics and Human Dignity, as found at http://www.cbhd.org/resources/cloning/scr_overview.htm.
[22] John B. Shea, M.D., "The Current Status of Adult and Embryonic Stem Cell Research," prepared for the Campaign Life Coalition, 19 April 2002.
[23] Ibid.
[24] Smith.
[25] Karla Dial, "Bush Makes Pro-Life Choice on Stem Cells," from the *Citizen* Web site, as found at http://www.family.org/cforum/citizenmag/webonly/a0017192.html.
[26] Op cit.

- Researchers at Enzo Biochem Inc. have high hopes of developing a cure for HIV using adult stem cells. They inserted anti-HIV genes into human stem cells, which developed into a type of white blood cell that blocked HIV growth.[27]
- Scientists at Massachusetts General Hospital have found that adult-islet stem cells can mature into pancreatic beta cells, the insulin-secreting cells that are depleted in diabetes.[28]
- The February 2001 *Scientific American* describes studies where nerve cells for transplants were produced from a variety of sources, including recently deceased adults, the scalps of living humans, and the skin of rats.[29]
- The National Institute for Neurological Disorders and Stroke reports that a patient's own bone marrow can now be used to create nerve cells to repair brain damage. [30]
- Johns Hopkins researchers have found that a mouse bone marrow stem cell can develop into the specialized cells lining intestines, lung and skin.[31]

More importantly, many of these studies have moved into human clinical trials and have yielded tremendous results in fighting many diseases, including:

Severe Combined Immunodeficiency (SCID)

- *ScienceDaily* reports that, when performed within the first 28 days of birth, stem cell transplants have a 95 percent success rate in treating newborns with severe combined immunodeficiency (SCID). Before the development of this procedure, all of these babies would have died.[32]

Diabetes

- After undergoing adult pancreatic-cell transplants, 11 out of 15 Type 1 (juvenile) diabetes patients are no longer taking insulin. [33]

Heart Disease

- Heart specialist Bodo Eckehard Strauer successfully treated a patient with stem cells from the man's bone marrow.[34]
- Doctors at Beaumont Hospital in Royal Oak, Michigan, report that Dimitri Bonnville shows improvement after undergoing an experimental stem-cell transplant to help regain heart tissue lost in a massive heart attack.[35]

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[27] Ibid.
[28] "Hormone Prompts Adult Stem Cells to Differentiate Into Islet Cells," *Science Daily*, original source: Massachusetts General Hospital, as found at http://www.sciencedaily.com/releases/2002/07/020777717075426.htm.
[29] Doerflinger.
[30] Ibid.
[31] "Bone Marrow Stem Cells Can Become Almost Anything," posted by the Culture of Life Foundation, from the *Daily University Science News*, 4 May 2001, as found at http://www.christianity.com/partner/Article_Display_Page/0,PTID4211/CHID403309, 00.html.
[32] "Stem Cell Transplants For Babies With Severe Combined Immunodeficiency (SCID)," *ScienceDaily*, original source: Duke University medical Center, 29 January 2002, as found at http://www.sciencedaily.com/releases/2002/01/020129074637.htm.
[33] Carrie Gordon Earll, "Adult Stem Cells: It's Not Pie-in-the-Sky," from the *Citizen* Web site, as found at http://www.family.org/cforum/research/papers/a002088.html.
[34] Ibid.
[35] "Teen's Heart Better After Adult Stem Cell Treatment," The Pro-Life Infonet, original source: *Reuter's Health*, 12 June 2003.

- In Australia, Hunter Medical Research Institute used adult stem cells to grow new blood vessels in a patient's heart. They hope to use this research to help up to 30 percent of people with end-stage heart disease.[36]

Sickle Cell Anemia

- Doctors at the University of Pittsburgh cured 15-year-old Keone Penn of sickle cell anemia through intensive chemotherapy and injection of stem cells from umbilical cord blood.[37]

Acute Myeloid Leukemia

- Doctors also saved the life of Nathan Salley, using stem cells from umbilical cord blood to treat his acute myeloid leukemia.[38]

Multiple Sclerosis (MS)

- The *Los Angeles Times* reports that, out of 26 rapidly deteriorating MS patients, doctors stabilized the condition of 20 and improved the condition of six with adult stem-cell regenerative medicine.[39]
- In Canada, four young MS patients show no signs of the disease on MRI scans after receiving adult stem-cell grafts.[40]
- Several hundred patients worldwide have reported improved conditions after receiving adult stem cell transplants in attempts to cure MS.[41]

Parkinson's Disease

- According to *The Washington Post*, researchers have improved the condition of a Parkinson's patient using his own stem cells. Just three months after the surgery, his motor skills improved by 37 percent. And, a year after the procedure, the patient's Unified Parkinson's Disease Rating Scale improved by 83 percent.[42]

Crohn's Disease

- After adult stem-cell treatment, two patients with Crohn's disease at Chicago's Northwestern Hospital have shown remarkable progress.[43]

These are just some of the documented examples showing the promise of adult stem cells. Adult stem-cell treatments have successfully fought brain tumors, retinoblastoma, multiple myeloma, neuroblastoma, non-Hodgkin's lymphoma and renal cell carcinoma. These treatments have also cured other forms of cancer, including ovarian cancer, testicular cancer and breast cancer.

Amazing discoveries continue to show that adult stem cells carry all the proposed benefits of embryonic stem cells without the risks. Present in everyone, these cells are non-controversial and easier to obtain. Furthermore, researchers have found adult stem cells, known as "multipotent adult progenitor cells" (MAPC's), which, like embryonic stem cells, have the capability to convert into any cell type. They have also found

[36] Miranda Wood, "After seven years in the lab, this cancer-killing doc deserves a drink," smh.com.au, 13 July 2003, as found at http://www.smh.com.au/articles/2003/07/12/1057979656608.html.
[37] Earll, "Adult Stem Cells: It's Not Pie in the Sky."
[38] Ibid.
[39] Wesley J. Smith, "Spinning Stem Cells," National Review Online, 23 April 2002, as found at http://www.nationalreview.com/comment/comment-smith042302.asp.
[40] Ibid.
[41] Earll, "Adult Stem Cells: It's Not Pie in the Sky."
[42] Op cit.
[43] Shea.

another cell type, the "mesenchymal stem cell" (MSC), capable of making only bone, cartilage, fat and muscle tissues, but with the remarkable ability to cause little or no immune reaction when transplanted.[44] Importantly, this cell seems to go only to damaged areas.[45]

These two findings have incredible implications alone, but, even more astounding, some scientists suggest that the two cell types may be one and the same. According to Ross Tubo of the biotech company Genzyme, "Put the properties of the two kinds of cell together and all of a sudden you have a noncontroversial, highly versatile source of adult stem cells that can, in theory, be transplanted to anyone."[46] Everyday, new and ethical discoveries transform today's science into the cures of tomorrow.

## Politics, Power and Profits

Many scientists and politicians know the facts about adult stem cells. They have seen the research about the mounting failures of embryonic stem cells. So why, one asks, do so many continue to ignore adult stem-cell treatments while aggressively promoting ESCR? The deeply troubling answer involves the power of the media, the advancement of the abortion and eugenics agenda, and financial profit.

Scientists and politicians, like much of society, are slaves to the media, and a few key celebrities have used the media to promote federal funding of ESCR. Michael J. Fox, who suffers from Parkinson's, Mary Tyler Moore, stricken with diabetes, and paralyzed actor Christopher Reeve, have joined the debate, appealing to human emotion in their quest to find a cure for their various diseases.

These emotional celebrity appeals advance an abortion agenda. In response to the pro-life outcry about the destruction of human life involved in ESCR, abortion supporters have jumped aboard the embryo-research bandwagon. As Wesley J. Smith writes:

> The embryo cell debate offers abortion advocates a "two-fer": It furthers their primary political goal of isolating and marginalizing pro-lifers, and it enables them to seize the PR high ground by "compassionately" pressing for research that offers hope against debilitating diseases.[47]

Thus they refuse to acknowledge the tremendous potential of adult stem cell research, fearing the political consequences to this pro-life alternative.

Supporters of eugenics, though only a few radicals, have always tied themselves closely with the abortion movement. On the issue of ESCR, they take an identical stance, with dangerous consequences. The exploitation of embryos to promote advances in science for the "greater good" could conceivably take the final step into the world of eugenics. Once again scientists would promote the "greater good," but this time scientific advancement would take the form of genetic screening and cloning to weed out the "inferior" in hopes of improving society eugenically.[48]

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[44] Sylvia Pagan Westphal, "Greater Potential of Adult Stem Cells Revealed," New Scientist Online News, 17 May 2003, as found at http://www/newscientist.com/news/news.jsp?id=ns99993723.
[45] Rev. Douglas B. Hunt, "'Miracle' Stem Cell Find," Religious Center on Biotechnology, Ananova Ltd., 2001.
[46] Op cit.
[47] Smith.
[48] Ibid.

Despite all their efforts on behalf of society, these scientists seem to care little about the individuals who comprise society. Charles Krauthammer describes their real purpose in *The Weekly Standard*. He writes of embryo research: "It is a clear deception perpetrated by cynical scientists and ignorant politicians. Its purpose is clear: to exploit the desperation of the sick to garner political support for ethically problematic biotechnology."[49]

Another very real factor in the propagation of the embryo lie is financial profit. Scientists engaged in the stem-cell debate are often university and research leaders. However, they also often serve as board members or shareholders in biotechnology companies that would thrive with government funding of ESCR. Several prominent scientists serve as faculty at prestigious universities and research institutes but also maintain close ties with biotech companies involved in ESCR. They include:

- Douglas Melton, Harvard professor and board member of Curis Inc.;
- Irving Weissman, Stanford scientist and founder of two biotech companies;
- Ronald McKay, National Institute of Health (NIH) scientist and a founder and shareholder of NeuralSTEM Biopharmaceuticals.

These men all have a financial interest in the outcome of the stem-cell debate. The media have quoted these "experts" hundreds of times regarding their support of ESCR, but almost never mention their financial stake in the debate.[50]

Some politicians do not have the courage or character to consider the truth. Worse, they feed the lies. Typical of this deception, Rep. Anna Eshoo (D-California) speaks of "stand[ing] on the brink" of incredible medical advancement using ESCR.[51] "The brink?" Scientists have not come close to finding safe, effective cures with this research.

Rep. Jerrold Nadler (D-New York) states with similar intent, "We must not say to millions of sick or injured human beings, '[G]o ahead and die, stay paralyzed, because we believe the blastoclyst, the clump of cells, is more important than you are.' … It is a sentence of death to millions of Americans."[52] America cannot justify the cost of ESCR to our humanity. Moreover, the advances with adult stem cells prove America does not face an impossible ethical dilemma.

## A Moral Crossroad

And so the lie continues, influencing the debate on embryonic research policy. Although the United States government banned federal funding for research involving the harming or destruction of embryos in 1996, the Clinton administration quickly proposed a way to bypass the law. Under guidelines endorsed by the NIH, the government would ignore the research as long as the embryos were killed by a non-government funded source in a "government-approved manner."

Notably, several politicians have taken a stand against ESCR. Sen. Sam Brownback (R-Kansas), for example, firmly opposes ESCR and advocates adult stem-cell

[49] Charles Krauthammer, "The Great Stem Cell Hoax," *The Weekly Standard*, 27 August 2001, 12.
[50] Neil Munro, "Mixing Business With Stem Cells," *National Journal*, 21 July 2001, 2348-2349.
[51] Op cit.
[52] Ibid.

research.[53] Rep. Chris Smith (R-New Jersey) also condemns ESCR and pushes for ethical alternatives, including bolstering the nation's supply of cord-blood stem cells.[54]

Likewise, the current administration under President Bush refuses to accept the embryo lie. Even as a candidate, he stated, "Taxpayer funds should not underwrite research that involves the destruction of live human embryos."[55] In reviewing the issue, the administration concluded that the type of funding proposed by the Clinton administration violated the law.

In August of 2001, President Bush announced his decision on this defining moral issue. He stated that the government would not support the destruction of embryos with federal funds,[56] but that he will permit funding of research on already existing stem-cell lines.[57] Adult stem-cell research will also continue, with $250 million going to this research in 2001 alone.[58] Furthermore, Bush established the President's Council on Bioethics, chaired by Dr. Leon Kass, a University of Chicago bioethicist. *TIME* magazine quotes the doctor, who wrote, "By pouring our resources into adult-stem cell research … we can avoid the morally and legally vexing issues in embryo research."[59]

However, by allowing funding for research on existing stem-cell lines, the President may be providing justification for the destruction of human life. Beverly LaHaye, founder and chairman of Concerned Women for America (CWA), said, "I was disappointed by President Bush's announcement that he would support limited federal funding of experiments on stem cells taken from human embryos."[60] CWA stated, "The President has embraced the hair-splitting logic of the previous administration, in pretending that it is wrong to conduct experiments on someone you have killed yourself, but right to do so on someone who has been killed by another. The critical moral question is not who killed the victim, but rather shall we profit from that killing?"[61]

During World War II the Germans conducted inhumane experiments on concentration camp victims. Their findings could have been used for medical advancement. But ethical scientists around the world refused to use the information because of how it was obtained.[62] They refused to legitimize murder.

Like these scientists, Americans should not condone research that denies the sanctity of human life, especially when an ethical, more scientifically viable alternative exists. Adult stem-cell research must go on, with full support from the American people. President Bush took a step in the right direction by endorsing adult stem-cell research. America must follow. The embryonic stem-cell lie must be confronted with the hope of adult stem-cell treatments—the demonstrated "miracle cure."

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[53] From the Sen. Sam Brownback Web site, as found at http://brownback.senate.gov/LIStemCellText.htm.
[54] From the Rep. Chris Smith Web site, as found at http://www.house.gov/apps/lisst/press/nj04_smith/prcordblood.htm.
[55] Doerflinger.
[56] Bill Sammon, "Bush Pledges Not to Expand Stem-Cell Funds," *The Washington Times*, 13 August 2001.
[57] William Kristol, "Stemming the Tide," *The Weekly Standard*, 27 August 2001, 11.
[58] "Stem-Cell Line in the Sand" *WORLD*, 18 August 2001, 7.
[59] Michael Orecklin, "Leon Kass: The Ethics Cop" *TIME*, 20 August 2001, 23.
[60] "Voice of Truth: A handful of congressmen spoke out on the stem cell decision," from the CWA Web site, as found at http://www.cwfa.org/articledisplay.asp?id=1482&department=CWA&categoryid=life.
[61] "Profit From Killing Human Beings," from the CWA Web site, as found at http://www.cwfa.org/articledisplay.asp?id=1480&department=CWA&categoryid=life.
[62] Ibid.