



Attention Turns to

Researchers are discovering that the use of embryonic cells is no longer necessary for the treatment of many dreaded maladies.

By Jamie Reno

OPPONENTS BATTLE AGAINST THE USE of embryonic stem cells because of the ethical ramifications and belief that when you are dealing with an embryonic stem cell, you are dealing with a human life. But the argument against embryonic stem-cell research eventually could be a moot point.

Among stem-cell experts, the tide is swiftly moving from embryonic to adult stem cells because adult cells are safer than embryonic stem cells, and they simply work better.

Christian Drapeau, a California scientist whose book, *Cracking the Stem Cell Code: Demystifying the Most Dramatic Scientific Breakthrough of Our Time*, explains some of the advances in adult stem-cell research, suggests that the science of non-embryonic stem cells has come a long way in a short period of time.

"We've never seen anything quite like this in the clinical world," he tells Newsmax. "It's the future of medicine. Unfortunately to date, because of government bureaucracy and Food and Drug Administration restrictions, there are clinical trials and a lot of research going on here, but most of the actual treatments are still only available outside the U.S."

It was University of Pittsburgh researchers who first discovered stem cells in fat in 2006. Subsequently,

Vet-Stem, a San Diego biotech firm founded by veterinarian Robert Harman, got an exclusive patent to treat animals with their own fat-derived cells and has since successfully treated more than 6,800 horses and dogs for various degenerative diseases, including bowed tendons, ligament injuries, and osteoarthritis.

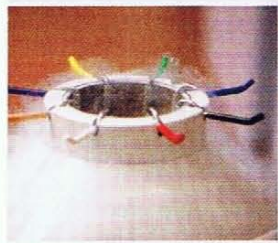
In humans, non-embryonic stem cells can be culled from umbilical cords, the placenta, amniotic fluid, adult tissues, bone marrow, fat from liposuction, regions of the nose, teeth, and even from cadavers up to 20 hours after death.

In just the last few years, a whole new set of non-embryonic, stem-cell-based treatments has emerged worldwide for diseases and maladies such as spinal cord injury, cancer, Alzheimer's, diabetes, blindness, multiple sclerosis, autism, and AIDS.

These are some of the other most recent developments in non-embryonic stem-cell treatments and research around the world:

■ **All-new trachea from a boy's own stem cells:** In London this spring, a 10-year-old boy made history when he received a new trachea from his own stem cells. He is reportedly the first child to be given a new windpipe, which will grow inside his body.

■ **Blinded in Italy can see:** Dozens of people who were blinded or suffered severe eye damage when they were splashed with caustic chemicals had their sight restored with transplants



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Adult Stem Cells

of their own stem cells. The treatment worked completely in 82 of 107 eyes and partially in 14 others. A man whose eyes were damaged more than 60 years ago now has near-normal vision.

■ Autistic child now can read:

In Costa Rica, Kenneth Kelley, a 9-year-old autistic child from Bangor, Maine, received a stem-cell treatment for autism in July and is now reading for the first time, the boy's parents tell WLBZ-TV

in Maine. Kenneth is reportedly one of less than 100 people nationwide to be treated with adult stem cells from umbilical cord blood in an effort to help him recover from autism.



SIGNING OFF Obama reverses the ban on taxpayer-funded embryonic stem-cell research.

■ Artificial stem-cell corneas:

Sankara Nethralaya, an ophthalmic care facility in India, announced a collaboration with

International Stem Cell Corporation in Oceanside, Calif., to develop stem-cell-derived corneal tissue to treat corneal blindness and

vision impairment. This tissue offers the first opportunity for high-quality, transplantation tissue for the 10 million people worldwide suffering from corneal vision impairment.

Closer to home, debate over embryonic stem-cell research is likely heading to the Supreme Court. President Barack Obama reversed the Bush administration's 2001 ban on taxpayer funding of embryo research, and that reversal was met with injunctions followed by appeals in recent months.

And while adult stem cells face stringent regulations and restrictions by the FDA, research and clinical trials are increasing at a rapid pace.

In Ann Arbor, Mich., Aastrom Biosciences announced that it will pursue a Phase 3 clinical program for its adult stem-cell therapy to treat critical limb ischemia, the most severe

Continued on page 86

Should You Go to a Foreign Stem-Cell Clinic?

Due to FDA restrictions, you may have to — but don't believe everything you hear about the quality of care in Costa Rica, Brazil, and even China.

By Jamie Reno

HOW FAR WOULD YOU GO, AND HOW MUCH WOULD YOU spend, to save your life or the life of a loved one with a serious condition for which there are no viable treatments currently available in the United States?

All over the world, adult stem cells are being used to treat a growing variety of diseases and maladies. And while they are being studied here, to date there are very few treatments available because of Food and Drug Administration restrictions.

Consequently, Americans are often leaving the country to be treated. Adult stem-cell clinics are popping up in China, Costa Rica,

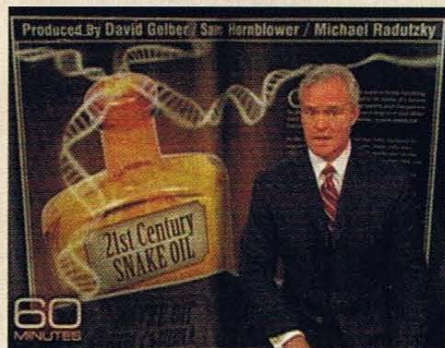
Ecuador, Brazil, Mexico, Germany, Italy, and Panama. Relatively little is known about these clinics in the United States, so it's difficult for potential patients to know which are legitimate, and which could be scams.

Earlier this year, CBS' *60 Minutes* aired an attack on these clinics, calling their proprietors snake-oil salesmen. In the CBS piece, the International Society of Stem Cell Researchers, a pro-embryonic stem-cell group, said that

there were no legitimate adult stem-cell clinics in the world.

"That's an utterly ridiculous statement," suggests Dr. Roger Nocera, author of *Cells That Heal: A Quantum Leap in Medical Science*. The *60 Minutes* piece, says Nocera, "was incomplete, inaccurate, and put a chill on patients who want to be treated at these clinics, most of which are legit and many of which are actually working closely with American universities."

Continued on page 86



60-MINUTE SLAM Anchor Scott Pelley reports on foreign stem-cell clinics.

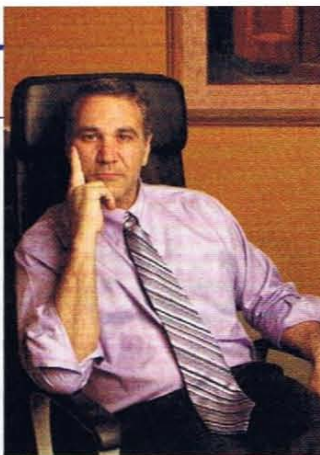
Healthy Living

Continued from page 85
form of peripheral vascular disease, which leads to more than 160,000 major limb amputations per year in America.

Meanwhile, adult stem cells are showing great promise in healing our troops. The military is working on creating artificial limbs and muscles for wounded warriors, and this summer the U.S. Army Medical Research and Materiel Command awarded Biotech company NeoStem a \$700,000 contract to advance adult stem-cell therapies in treating traumatic wounds.

"Wound healing could represent just the beginning of more collaborative projects involving other clinical indications, such as spinal cord injuries and retinal damage, both of which affect American warriors who serve our country," Robin Smith, NeoStem's CEO, said in a statement.

San Francisco-based Institute for Regenerative Medicine, an early champion of embryonic stem-cell



"There are clinical trials and a lot of research going on here, but most of the actual treatments are still only available outside the U.S." — Scientist Christian Drapeau

research, has quietly diverted funds from embryonic to adult stem-cell research, as have other California biotech companies and universities.

At the University of California in Irvine, researchers have announced that they have discovered the method and mechanisms by which adult stem cells can repair and replace damaged tissue in the brain.

Dr. Bernadine Healy, director of the National Institutes of Health under the Bush administration, wrote in a March 2009 *U.S. News & World Report* column that "embryonic stem cells, once thought to hold the cure

for Alzheimer's, Parkinson's, and diabetes, are obsolete."

In her book *The Summer of Superheroes and the Making of Iron Boy*, Mary Webb, whose 4-year-old son Quentin was suffering from leukemia, writes about his remarkable victory using cord and placenta blood stem cells. She tells Newsmax she wrote the book to create awareness. "I'm not that educated or savvy, but I do know that Americans are behind the curve when it comes to stem cells, which are saving lives," she says. "My son is living proof." □

Dale Buss contributed to this report.

FOREIGN CLINIC Continued from page 85

Nocera admits there are some unethical clinics around the world and that prospective patients must be cautious. But, he says, "There are thousands of American patients who've been treated successfully at these stem-cell clinics, and I know many highly trained scientists worldwide who provide this service."

The lack of patentability and other regulatory hurdles are what led one San Diego biotech company to Panama to treat multiple sclerosis and arthritis patients. MediStem has successfully treated more than 2,000 patients at its Panama clinic with fat-derived adult stem cells.

"Stem cells helped me considerably," says Michelle Hawks, an MS patient who was treated at MediStem's clinic. "Why didn't [60 Minutes] show doctors who are genuine and patients like me that have had good results? It is crazy that in the states you cannot get your own stem cells."



DESIGNED TO CELL Institute of Cellular Medicine, Costa Rica, and World Stem Cell Hub, South Korea (inset).

But there are, indeed, many cases of fraud and quackery among some clinics, from Central America to China to Eastern Europe. Ava Newlin went to a clinic in Russia to treat a "degenerative disease" and was completely misled about both the treatment itself and the cost. "I was ripped off," she tells Newsmax. "I went with high hopes, but I just picked the wrong clinic. They didn't help me, but they took all my money, more than \$30,000."

One organization trying to help consumers is The Cell Therapy Foundation, whose Internet-based Adult Stem Cell Research (ASCR) Network, www.ascrnetwork.org, a resource for patients to find legitimate clinics, current clinical trials, and the latest research.

"We need more organizations like [ASCR]," says Nocera, who laments America's "lack of focus" on research in adult stem-cell technology. "This is why a group of scientists, including myself, have gone overseas to Third World countries to perform these procedures, often with remarkable success for MS, autism, Crohn's disease, heart disease, cerebral palsy, dermatomyositis, muscular dystrophy, insulin-dependent Type 2 diabetes, and more." □