

## HEALTHY LIVING

## A donation of hope

## Stem cells in umbilical cord blood help treat diseases

BY SONJI JACOBS  
Cox News Service

When Suzanne and Brian Eplett were expecting five years ago, they wanted to donate the baby's umbilical cord blood so that a sick person could use the stem cells for disease treatment.

But the Epletts could not find a way to give the blood to a public bank. Recently, the Lilburn, Ga., couple welcomed their third child, Keith, into the world at DeKalb Medical Center in Decatur, Ga. They donated his cord blood to StemCyte, a company that works with the hospital to collect and store cord blood.

"I'd much rather have the cord blood be used by someone who needs it than have it be thrown away," Suzanne Eplett, 33, said several hours after her C-section.

Likewise, Yolanda Gurley was delighted about the birth on Oct. 5 of her first child, Janiya Alexis. The new Douglasville, Ga., mom also is thrilled that her daughter's delivery could potentially save a life.

"If someone else benefits from it, if it saves another life, perfect," said Gurley, 36.

For several years, families have been able to privately store their baby's umbilical cord blood in case the baby, a sibling or other family member developed a disease that could be treated with stem cells. Now, many doctors and medical experts are encouraging families to consider donating their baby's cord blood to public banks.

The new program at DeKalb Medical gives families in metro Atlanta an option for public donation.

The stem cells taken from Keith's and Janiya's umbilical cord blood someday may treat a patient who has diseases such as sickle cell anemia or leukemia. Stem cells

are immature cells that can develop into specialized cells such as blood, muscle and nerve cells. They can be taken from a variety of sources: embryos, fetal tissue, umbilical cord blood, bone marrow and circulating blood.

The stem cells taken from umbilical cord blood and bone marrow have treated dozens of diseases.

In 1988, doctors performed the first cord blood transplant from a donor who was a sibling of the patient.

Five years later, Dr. Joanne Kurtzberg of Duke University Medical Center performed the first successful cord blood transplants from a donor not related to the patient.

Doctors have performed about 8,000 cord blood transplants worldwide.

Dr. Stuart Pancer, an obstetrician and gynecologist who practices in Tucker, Ga., said he recommends DeKalb Medical's cord blood donation program to his patients. He said that most umbilical cords, including their stem-cell-rich blood, usually are discarded as medical waste after a delivery.

**No controversy**

Sometimes, patients preserve their baby's cord blood with private banks, such as Cryo-Cell International or ViaCord, but both companies charge about \$2,000 to collect and store the cord blood for the first year. Thereafter, storage is \$125 per year.

Pancer said that most of his patients cannot afford private cord blood banking. In addition, the odds are low that the



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Suzanne Eplett welcomes her new son, Keith, into the world. The Epletts elected to have Keith's cord blood donated. Suzanne and her husband, Brian, already have two other children and had sought a company that would take their oldest child's umbilical cord blood five years ago when the baby was born. However, they never found a program that worked for them.

baby or family member ever will need a cord blood transplant for disease treatment. There's also no guarantee a child's cord blood will be a match for a family member.

"You pay a lot of money for something that 99 percent of the time you won't ever need," Pancer said. "Now comes the possibility of donating and helping treat disease, not just for the person donating but for other people. You can't beat that."

Suzanne Eplett said she and her husband were not interested in going the private company route. "We didn't want to pay all that money for something we might not ever need or use."

Unlike research that involves human embryos, the process of collecting stem cells taken from umbilical cord blood and bone marrow is not controversial.

While supporters of human embryonic research say it may lead to breakthroughs in the treatment of ailments such as cancer, Parkinson's and Alzheimer's diseases, opponents argue that it crosses a moral line because it destroys the embryo and they say, a potential human life.

**State comes on board**

Many medical experts — regardless of their position on embryonic stem cell research — support stem cell therapies from cord blood. They also support public cord blood banking to maximize the chances of a sick person finding a genetically suitable sample or a "match." Members of racial and ethnic minority groups, such as African-Americans, often have a hard time finding suitable cord blood samples.

Several states, including Georgia, are exploring ways to establish public cord blood banks. Earlier this year, the Georgia Legislature approved Senate Bill 148, a measure that seeks to create a cord blood bank or network of such banks in the state. The bill, which was signed into law by Gov. Sonny Perdue, established a 15-member state commission that would oversee a system of umbilical cord blood banks and seek grants for non-embryonic stem cell research.

StemCyte, the California-based company that works with DeKalb Medical, collects cord blood units for both private and public use. At DeKalb Medical, the company employs three collection specialists who work under the supervision of hospital staff to safely process and prepare the cord blood for shipment to its storage facilities.

Under the program, any woman who donates her baby's cord blood may be able to use it for a family member if necessary without paying a fee to StemCyte. If the donated unit already has been used for another patient, the company will attempt to provide a compatible unit.

Dr. Robert Chow, StemCyte's founder, said he wants to provide cord blood samples to people from all ethnic and racial backgrounds. Chow, who is Asian-American, said he sought to establish a program at DeKalb Medical because of the racially diverse community it serves.

"We're hoping to give life to people," Chow said. "Our mission is to provide cord blood stem cell therapy to every patient in need." ■

## University of Georgia researcher makes stem cell breakthrough

BY ANDREA JONES  
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Steve Stice, the University of Georgia's headline-grabbing stem cell researcher, said he has discovered a new way to use cells — one that could help protect national security.

Stice is working with the U.S. Naval Research Laboratory to use his neural cell research to create a portable chemical weapons detection system that could be used for homeland security and to save soldiers' lives in the field.

It is yet another breakthrough for the scientist, who earlier this year announced he had found a way to quickly manufacture billions of neural cells from just a handful of stem cells.

The neural progenitor cells, far less controversial for research than the embryonic stem cells from which they are derived, can be used in studies of conditions such as Alzheimer's disease, spinal cord injuries and depression.

Stice said recently the neural cell kits can be used to detect the presence of chemical agents.

Current detection systems use nerve cells from mouse embryos. But mouse cells last only about two weeks before dying off and don't respond in the same way as human cells, Stice said. Neural cells from humans last longer than four months.

"If you're in a war zone, you're not going to be able to pull out a bunch of mouse cells every couple of weeks," he said.

The detection device, developed by Navy engineers, is about the size of carpenter's tool box. The cells sit on top of an array of electrodes that record changes in electrical activity, indicating the presence of an outside agent, such as nerve gas.

"We think it's something we can fully develop within a year," Stice said. The devices also could be used at home — in places like subway systems or

after an industrial waste accident.

The project has earned support from Rep. Jack Kingston (R-Ga.), who earmarked \$1 million in part for the research in a 2008 Department of Defense spending bill.

Sen. Johnny Isakson (R-Ga.), who worked closely with Stice to develop a Senate bill on stem cell research, said recently that Stice is an "immensely gifted researcher."

Stice and his lab have three of the 21 existing human embryonic stem cell lines that were grandfathered in by the Bush administration for use in federally funded research. Bush in 2001 placed strict limits on funding for such research, saying destroying human embryos to extract stem cells crosses a moral line.

The stem cells obtained from human embryos left over from fertility clinics are highly valued by researchers for their ability to morph into any human tissue.

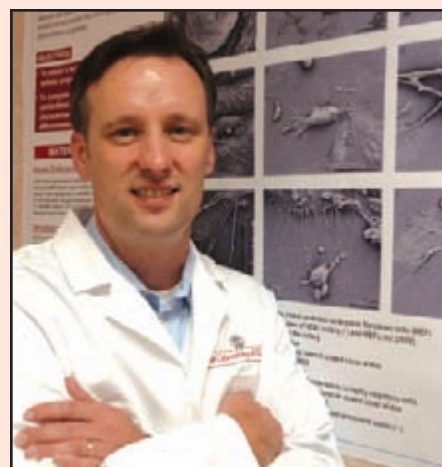
But the science has been a political flashpoint, raising ethical questions among political conservatives, who have likened the process of harvesting cells from embryos to abortion.

Isakson said Stice's research, which uses "naturally dead embryos" — those that are too deficient to produce a fetus if implanted — is something everyone can be comfortable with.

"Ethically when we look at the question, we realize there's a way to do it without crossing the line of embryo destruction," he said. Bush, who vetoed a stem cell bill in 2006, has shown support for Isakson's bill, which has yet to be approved by the House.

Isakson's bill would free more federal money for stem cell research using cells from naturally dead embryos.

But Democrats and some scientists have said the proposal is impractical and unlikely to help create any new treatments or cures.



University of Georgia scientist Steve Stice is trying to use his research to help develop a portable chemical weapons detection system. Billions of neural cells can be manufactured from a handful of stem cells. "We think it's something we can fully develop within a year," Stice said.

Stice co-founded Aruna Biomedical Inc., which holds an exclusive worldwide license to develop and commercialize neural cells. It is one of several incubator companies connected with his groundbreaking research.

Stice said the company has been looking for practical applications for the human neural cell kits, which are sold to labs around the world. The detection device, he said, is just that.

"We'd love to cure Parkinson's with these cells, but we understand that is going to take some time," he said. "This gives us an immediate impact." ■