

NE♀CBB

NEW ENGLAND CORD BLOOD BANK, INC.

Your Trusted Stem Cell Center



HOPE FOR REGENERATIVE MEDICINE AND DISEASE TREATMENT

Did you know that there are more reasons than ever to keep saving your child's cord blood and cord tissue?

[Message from the Laboratory Director Grace M. Centola, Ph.D., HCLD/ALD/CC \(ABB\)](#)

Happy Fall everyone!! The staff of NECBB hopes everyone had a happy and safe Summer. I for one, have been spending a lot of time with my two wonderful grandsons, one who is almost 5 and one who will be 4. What a joy!!

This reminds me of how pleased we are to have stored our youngest grandson's umbilical cord blood stem cells at NECBB. The first was a preemie, delivered by emergency C-section, and the collection kit was left in the car amidst all of the commotion getting into the hospital. Of course, I was out of town, and it was too late for me to have the cord blood collected hours after he was born when I received the call. We are certainly pleased that we have at least one of the boys' stem cells saved, just in case. Unfortunately, some 4 years ago, banking of umbilical cord tissue was not available, so we have no cord tissue, and thus, no mesenchymal stem cells.

For an explanation of the different type of stem cells, including the mesenchymal stem cells, see the 'Stem Cells 101' section below. Also included in this issue of our NECBB newsletter is a listing of some newsworthy websites and information on successful use of stem cells for disease treatments. Stem cells are always in the news, and if you have missed any of this, be sure to check out the websites we have provided. These provide proof that umbilical cord blood and cord tissue become more and more valuable with time. You have given a potential gift of life-saving cells to your child and family members.

[- Stem Cells 101 -](#)

People hear a lot about stem cells today. But are all stem cells the same? No, they can be quite different, but they really are not all that difficult to understand! Here is brief description on two of the major types of stem cells we work with, and store for you, at the NECBB: Hematopoietic Stem Cells and Mesenchymal Stem cells.

Hematopoietic Stem Cells (HSC): These stem cells make up your blood, and cord blood is rich in them! Both red and white blood cells come from HSC. The red cells carry oxygen to your body. The white cells make up your immune system, helping you stay well. While the adult produces HSC's from the bone marrow, the cord blood is rich in these young HSC's. That is why if the blood or bone marrow gets a disease, a cord blood transplant can repopulate the body with healthy blood and immune cells! Having cord blood on hand can be a lifesaver.

Mesenchymal Stem Cells (MSC): These are another 'adult stem cell', which are forms of stem cells found naturally in the human body and some fetal support tissues. Some sources are cord tissue, dental pulp, bone marrow, and adipose tissue. These adult stem cells help to repair and maintain the body. Traditionally MSC's can be directed to make many tissues such as cartilage, fat, and bone. Current research has them becoming a wider variety of tissues, such as nervous tissue, muscle, and even insulin producing cells. They are being used to help expand cord blood stem cells, repair and regrow damaged bone, and even treat certain autoimmune diseases. While there is only one MSC approved treatment on the market, research and clinical trials are moving forward rapidly. Having MSC's available from cord tissue will ensure your children can take full advantage of all the regenerative medicine making its way to us right now.

[New Reasons to Keep Saving Your Cord Blood!](#)

We at NECBB believe it is our mission to better serve you, our valued clients, and thus it is imperative to keep up to date on the cutting edge research and clinical trials on cord blood and cord tissue.

I recently attended the 2013 annual meeting of the International Society for Stem Cell Research. I was struck at how far the field has come in the last 10 years. More and more diseases are being treated with cord blood, even some that most of us thought would be impossible to treat, are now showing remarkable promise and are well on their way to

clinical use.

One of my favorite topics was on customized medicine that will radically shift the paradigm in the blood banking industry. A number of diseases occur from genetic defects in the hematopoietic system. Traditionally this would mean the cord blood would not be stored as it was considered 'defective'. But with new groundbreaking research, scientists are taking this diseased cord blood and correcting the defects there by curing the cord blood of the disease. Scientists are then transfusing the autologous (same person's) cord blood and effectively curing them of their disease!! Clinical trials are going on right now at the National Institute of Health (NIH) and Boston Children's Hospital. While it is in its early stages, this new technique promises to be a powerful tool in improving the quality of life for many, and outright saving the lives of many more!

Another interesting avenue of research was personalized medicine. By having samples of cord blood available, researchers are beginning to look at the how, the why, and the when certain diseases affect individual people. Simply put, the thinking is that a sample could be tested and may be able to predict when a person might get a particular disease. Even better, the sample could allow testing to be done to treat the disease in more effective ways that would not be possible without a stored sample of cord blood. The bottom line is that having this 'baseline' sample of the cord blood may yield personalized treatments more effectively than only having adult blood already showing the diseased state.

*Matthew Wilgo, Cell Biology Scientist
New England Cord Blood Bank*

In the News...

Mayo Clinic First in U.S. to Test Umbilical Cord Blood Stem Cells for Cardiac Regeneration in Pediatric Congenital Heart Patients

<http://www.mayoclinic.org/news2013-rst/7521.html?elq=094b2d9a79c84848a45b7c22aa82bfc2>

- Two videos about the process

<http://newsnetwork.mayoclinic.org/discussion/mayo-clinic-first-in-u-s-to-test-stem-cell-use-in-trial-for-pediatric-congenital-heart-disease>

These Cells Can Stem Blood Cancer

<http://www.dailyrx.com/leukemia-patients-have-improved-outcomes-blood-stem-cell-transplants>

Newborn's cord blood saves brother from cancer

<http://focustaiwan.tw/news/aall/201306260032.aspx>

Boy's Stem Cells Successfully Treat Cerebral Palsy, Awaken Him From Vegetative State

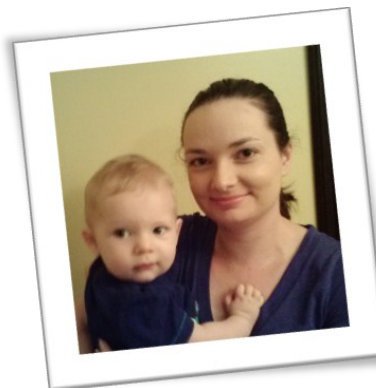
<http://www.medicaldaily.com/articles/15870/20130524/boys-stem-cells-successfully-treat-cerebral-palsy.htm>

Getting to Know the New England Cord Blood Bank: Jen and Ian Evans

Jen Evans is the NECBB's Laboratory Supervisor. She oversees our dedicated staff of technicians who process some of the most precious biological material: your cord blood. Daily activities focus around ensuring all laboratory operations run smoothly, from checking that all items used in the procedure are sterile, to ensuring all the paperwork is 100% accurate. Jen's work guarantees the highest quality of cord blood processing is done for each and every cord blood (and tissue) that crosses our path.

But she doesn't just work here, she's also a client! Baby Ian's cord blood is stored on site as well.

Jen's decision to store her baby's cord blood was simple, "As an employee, I see the care taken with every cord blood we process. I knew I wanted that level of dedication taken with Ian's cord blood." We stand behind our record as one of the oldest and most trusted cord blood banks in America.



*Jennifer and Ian Evans
Lab Supervisor and
baby supervisor!*

As always, we are thankful to you for choosing NECBB to store your child's cord blood and cord tissue stem cells. Should you ever have any ques-

tions, please do not hesitate to contact us by phone, or email me directly, at DrGrace@necryogenic.com.

Best wishes for a great Fall,
Dr. Grace



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