



What Is Umbilical Cord Blood?

After a baby is delivered, the blood remaining in the umbilical cord and placenta is called cord blood. This blood is typically discarded with the placenta as biological waste. However, scientists have recently discovered that it is very rich in a special type of cells called stem cells.

What Are Stem Cells?

Stem cells are immature cells that can divide and renew with an unlimited capacity. Hematopoietic (blood) Stem Cells (HSCs), a major type of stem cell normally found in bone marrow, are also present in high concentrations in umbilical cord blood. HSCs replicate continuously and some of them differentiate and mature into all the components of the blood and immune systems. Every day, HSCs produce billions of red blood cells, white blood cells and platelets that are essential for our health.

Why Use Stem Cells?

Sometimes the HSCs in the bone marrow may become diseased, or may be destroyed by chemotherapy and/or radiotherapy for cancer. When this occurs, they must be replaced by normal, healthy HSCs (stem cell therapy). Traditionally the source of HSCs has been the bone marrow; however, umbilical cord blood is another very important source of these precious lifesaving stem cells. In fact, researchers have discovered that cord blood-derived stem cells have many advantages over those derived from bone marrow and are preferred for transplants.

How is Cord Blood Collected and Stored?

You will be provided with our special collection kit that makes the procedure safe and simple. Following the delivery of your baby, your doctor or midwife can easily collect the umbilical cord blood without risk or pain to yourself or the infant. After collection, the cord blood will be couriered to our state-of-the-art laboratory for processing. At Progenics, we double process the sample to maximize the extraction of stem cells, which are then cryopreserved (frozen) in liquid nitrogen at approximately -190°C . With our modern cryopreservation technology, the stem cells can be stored indefinitely.

Why should I have my baby's cord blood saved for my family?

- **It is rich in hematopoietic (blood) stem cells**
Finding a suitable bone marrow donor when a patient requires a transplant can be extremely difficult. Cord blood has the same types of stem cells as those found in bone marrow. The cells in cord blood can therefore be used as an alternative to bone marrow stem cells to save the lives of patients.
- **It is a proven treatment**
Cord blood stem cells have been used to treat over 70 malignant and non-malignant life-threatening diseases, and have saved the lives of thousands of patients.
- **It holds promise for new therapies**
With advances in research on cord blood it will be used to treat more diseases in the future, especially in regenerative medicine to repair damaged tissues and organs for treatment of diabetes, heart disease, liver disease, spinal cord injury and more.
- **It is a once-in-a-lifetime opportunity**
Cord blood can only be collected at birth. Saving cord blood and never needing to use it is better than not saving it at birth and then needing it in the future. More importantly, cord blood stem cells from a family member are better for transplant to a patient than stem cells from an unrelated donor.

What is the chance of using cord blood in a lifetime?

The chance of a child using his or her own cord blood in a lifetime is estimated at 1 in 400 (Nietfeld J.J. and Verter F., 2008). However, the opportunities for using it are expected to increase with advances in research and improvements in transplantation.

His cord blood saved his life

Adrian was diagnosed with stage 4 neuroblastoma when he was only 10 months old. As part of his treatment, he received a transplant of his own cord blood stem cells, and is now a healthy boy.

*"We are so happy that we had made the choice of storing his cord blood at birth with **Progenics** though we never thought we would use it."*

- Adrian's parents



Progenics' Advantages

- **Save more cells**

The superior processing technique developed by our Laboratory & Scientific Director (Yang. H. et al)¹ guarantees that you have a higher chance (up to 80 times) of saving more cells for your family, thereby increasing the chance that the cord blood will be suitable for a transplant and that the transplant will be successful.

- **Quality guaranteed**

The quality of banking is guaranteed with a Certificate of Cryopreservation, which contains information on the most important factors that can affect the number of cells during processing and cryopreservation.

- **Successful transplant**

One of our clients was diagnosed with stage 4 neuroblastoma (cancer of nerve cells) when he was 10 months old. He received a transplant of his own cord blood. The transplanted stem cells successfully engrafted (the indicator of a transplant's success) shortly after the transplant due to the quantity and superior quality of the banked cells. One year after the transplant the boy is healthy and is enjoying a normal childhood.

- **State-of-the-art laboratory**

Progenics has the most advanced banking system available combined with cutting-edge information technology to make our processing system unique and to guarantee the quality of banked cells.

- **Secure storage system**

Progenics stores cord blood in a secure, fireproof facility. The storage freezers are connected to a liquid nitrogen pipe-in system to ensure a consistent supply of liquid nitrogen to maintain the cells at a low temperature (approximately -190°C). The storage system is equipped with a back-up power generator and is monitored 24 hours a day.

- **Reliable transportation**

The collected cord blood is transported exclusively by a private medical courier to ensure that it is shipped to Progenics for processing safely and in a timely manner (it is critical that the cord blood is shipped within an acceptable time frame so that it will meet the criteria for processing).

- **Flexible payment options with competitive prices**

To make cord blood banking services affordable for our clients we offer installment payment options without charging extra fees or interest.

- **Medical Director**

Dr. Paul Shuen, MBBS, FRCSC Obstetrics/Gynecology/Gynae-oncology

- **Most experienced Laboratory & Scientific Director**

Progenics is directed by Dr. H. Yang, a renowned stem cell cryopreservation scientist with:

- 20 years of experience (since 1986) in research on the cryopreservation of human bone marrow and cord blood hematopoietic stem cells.
- 20 years of experience (since 1986) in banking bone marrow and peripheral stem cells for transplant.
- 10 years of experience (since 1995) in cord blood banking with successful transplants.

Dr. Yang has established himself as an internationally respected authority in cord blood banking and stem cell cryopreservation with his research on separating cord blood stem cells efficiently¹, protecting cord blood stem cells from freezing damage^{2,3}, assessment of viability of post-thaw stem cells^{3,4}, and correlation of post-thaw viability and transplant outcomes⁵.

References (peer-reviewed scientific journals):

- 1) Yang H, Acker JP, Abley D et al. High-efficiency volume reduction of cord blood using pentastarch. *Bone Marrow Transplantation* (2001) 27:457-461.
- 2) Yang H, Acker JP, Hannon J et al. Damage and protection of umbilical cord blood cells during cryopreservation. *Cytotherapy* (2001) 3:377-386.
- 3) Yang H, Zhao H, Acker JP et al. Effect of dimethyl sulfoxide on post-thaw viability assessment of CD45⁺ and CD34⁺ cells of umbilical cord blood and mobilized peripheral blood. *Cryobiology* (2005) 51: 165-175.
- 4) Yang H, Acker JP, Cabuhat M et al. Effects of incubation temperature and time after thawing on viability assessment of peripheral hematopoietic progenitor cells cryopreserved for transplantation. *Bone Marrow Transplantation* (2003) 32: 1021-1026.
- 5) Yang H, Acker JP, Cabuhat M et al. Association of post-thaw viable CD34⁺ cells and CFU-GM with time to hematopoietic engraftment. *Bone Marrow Transplantation* (2005) 35:881-887.

- **Medical Advisory Board**

Our Medical Advisory Board consists of renowned medical doctors in cord blood banking related fields. They provide Progenics with the most advanced knowledge in the field to ensure that our cord blood banking procedures are up-to-date and monitored for quality.



Dr. Stephen Comay,	MBChB, FRCPC	Pediatric hematology/Neonatology
Dr. Mona Loutfy,	MD, FRCPC	Infectious disease
Dr. Nicholas Shilletto,	MBBCh, FRCSC	Maternal fetal medicine/Perinatology
Dr. Jeffrey Silverman,	MD, FRCPC	Hematology/Obstetrical medicine
Dr. Philip Wyatt,	MD, PhD	Clinical genetics/Laboratory genetics

AABB Accreditation

Progenics became fully accredited by the AABB (American Association of Blood Banks) within one year of entering the cord blood banking industry. AABB accreditation is a basic requirement that should be met for a facility to bank cord blood for future transplantation.

Online Registration

By a simple log-in procedure, you can log-in as many times as you wish (within one month) to complete your online registration.

Don't Miss This 
Once in a Lifetime Opportunity
of Giving Your Child
 a Gift of Life

For More Information

- **Talk to our experts**
1-866-921-1666/416-221-1666
email: experts@progenicscryobank.com
- **Visit our multilingual website**
www.ProgenicsCryobank.com (ENGLISH / FRANÇAIS / 中文)
- **Attend a free seminar**
Progenics provides free information seminars for expectant parents on Saturdays at our main conference room.
- **Book a personal consultation**
You may book a free personal consultation with one of our counsellors.

*** Please register early in your pregnancy so you can have your collection kit with you when you go into labour. ***

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