

# **Guide to Cord Blood Banking**

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Smashwords Edition

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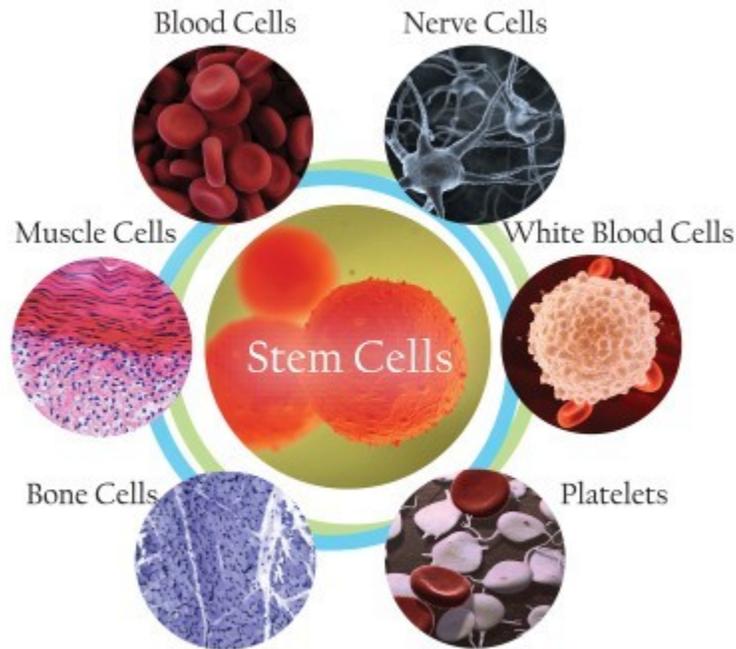
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## What are stem cells?



Stem Cells are immature, undifferentiated cells that act as the building blocks of your body. These cells can differentiate into all body cell types including blood cells, nerve cells, bone cells, cartilage cells, skin cells, liver cells etc. Stem Cells can be harvested and stored from both Umbilical Cord Blood and tissue surrounding and protecting the cord blood vessels. They can be used to replace damaged or diseased cells in the body, making them an invaluable treatment option for you and your family.

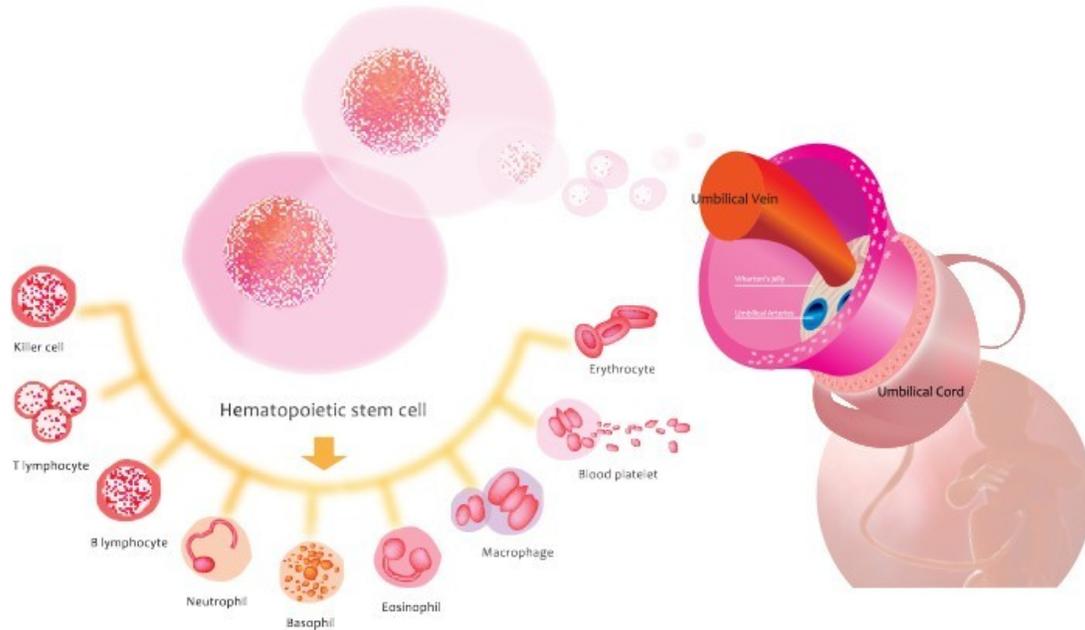
Stem cells are distinguished from other cell types by two important characteristics. Firstly, they are unspecialized cells capable of renewing themselves through cell division. Secondly, under certain physiologic or experimental conditions, they can be induced to become tissue or organ-specific cells with special functions.

Unique characteristic features of Stem Cells are:

- Homing: Travel to the site of damage where regeneration is required

- Engraftment: Settle down & grow & multiply
- Plasticity: Potential to change into other cells

## What are Cord Blood stem cells?



Umbilical Cord Blood is the blood left over in your umbilical cord after your baby is born. This blood is a rich source of the stem cells you want to store for future treatments if ever needed.

## **Why bank cord blood stem cells?**

Cord Blood Stem Cells Hold the Power to Cure, Today!

Cord blood provides a rich source of stem cells for use in many situations where bone marrow is considered today. Cord blood stem cells are used in disease treatment to fight over 80 diseases including many forms of malignancies such as leukemia, autoimmune diseases, lupus, and inheritable diseases such as sickle cell anemia.

Doctors have increasingly turned to cord blood stem cells as a life-saving alternative to bone marrow transplants. There is a lower probability of graft vs. host disease (GVHD) and a greater likelihood of finding an appropriate tissue type match because the match does not need to be as exact as for bone marrow.

Stem cell research is exploring new applications for treatment every day. This research may prove effective in the future treatment of many common diseases and injuries that plague today's society, including spinal cord injury, stroke, Parkinson's disease, Alzheimer's disease, heart disease, diabetes, and HIV.

Cord Blood Stem Cells are a Potential Match for Other Family Members

Your baby's cord blood cells are a perfect match for your baby, should he or she ever need a stem cell transplant. In technical terms, it is a perfect 6 out of 6 HLA tissue type match, ideal for transplantation. There is a 30% chance that the cord blood unit will be a high-quality match for a full sibling<sup>1</sup>. Cord blood stem cells are also a "half" (or 3 out of 6) match for a parent. These "half matches" are currently being used in transplant research.

Bank on the Future of Emerging Research

With successful transplants and breakthroughs in stem cell research occurring every day, more and more expectant parents have chosen to bank their newborn's cord blood and tissue.

Researchers are already studying the effects that cord blood stem cells have on spinal cord injury, brain injury, type 1 diabetes, stroke, heart disease, Alzheimer's, Parkinson's, and even HIV. As stem cell science advances, the importance of saving these cells increases exponentially.

Private cord blood banking enables you to store your baby's stem cells for a guaranteed perfect genetic match with your child. Since cord blood can be stored indefinitely at this point, private cord blood banking is both a safeguard against diseases treatable today and a real hope for more treatment possibilities tomorrow.

Cord Blood Stem Cells are genetically unique

If your family has a history of disease that can be treated with cord blood, the odds that your baby or their sibling may need a cord blood transplant increases. The number of diseases treated continues to grow with the research efforts of companies like StemCyte. We strongly encourage families to bank cord blood and tissue from all of their pregnancies in the event a sibling transplant may be a better or only treatment rather than an autologous transplant.

Additionally, families with an ethnic or mixed-race background may have difficulty finding a match should they ever need a stem cell transplant.

Most public banks have a larger Caucasian volume of cord blood units than any other type, although StemCyte has one of the largest, most ethnically diverse public cord blood inventories in the world. More families are still choosing to save their newborn's cord blood for peace of mind.

### **Over 80 diseases currently treated with cord blood stem cells**

The following diseases have been treated with transplants using StemCyte cord blood

- Acute Lymphoblastic Leukemia
- Acute Myelogenous Leukemia
- Acute Promyelocytic Leukemia

- Adrenoleukodystrophy
- Alpha Mannosidosis
- Alpha-Thalassemia HbH constant spring
- Amegakaryocy
- Anaplastic Lymphoma
- Aplastic Anemia
- Biphenotypic Leukemia
- Burkitt's Lymphoma
- Chediak-Higashi Syndrome
- Chronic Granulomatous Disease
- Chronic Lymphocytic Leukemia
- Chronic Myelogenous Leukemia
- Congenital Neutropenia
- Di-use Large B-Cell Lymphoma
- Dyskeratosis Congenita
- Familial Lymphohistiocytosis
- Fanconi Anemia
- Hemophagocytic Lymphohistiocytosis
- Histiocytosis
- Hodgkin's Disease
- Hunter's Syndrome
- Hurler's Syndrome

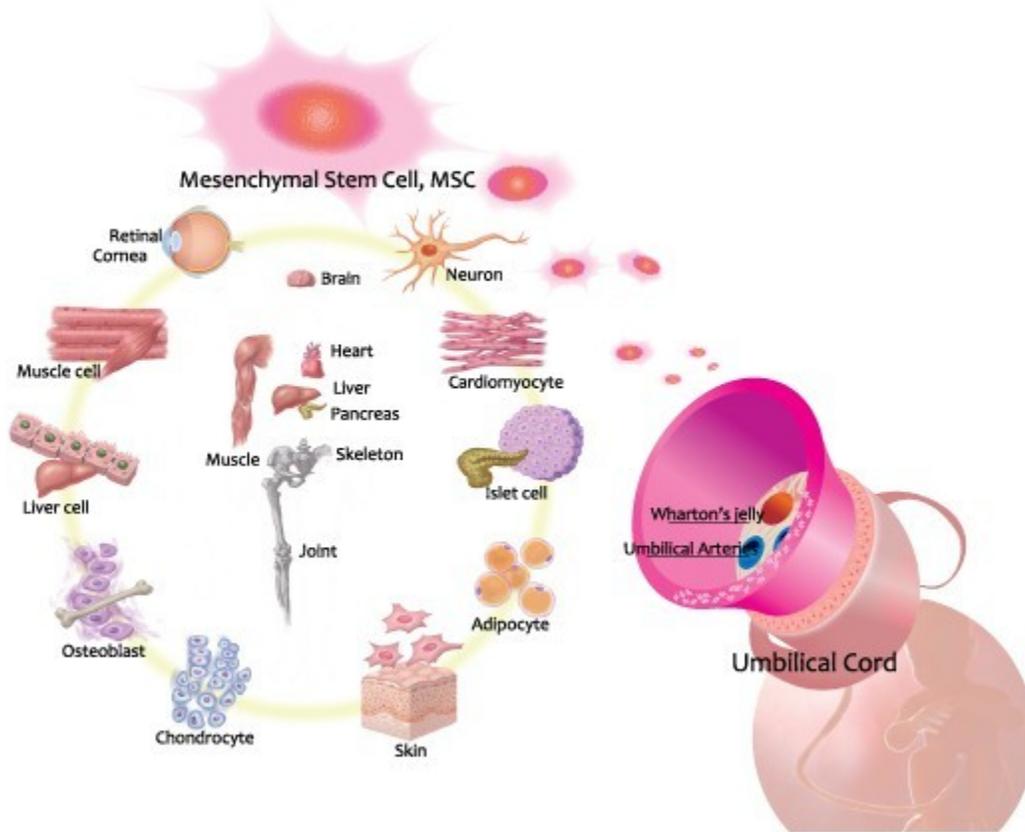
- Hyper IgM Syndrome
- I Cell Disease (Leroy Disease)
- Juvenile Myeloid Leukemia
- Juvenile Myelomonocytic Leukemia
- Kostmann Syndrome
- Krabbe Disease
- Langerhans Cell Histiocytosis
- Leukodystrophy
- Mantle Cell Lymphoma
- Mycosis Fungoides
- Myelodysplastic Disorder
- Myelofibrosis
- Neuroblastoma
- Niemann-Pick Disease
- Non-Hodgkins Lymphoma
- Osteopetrosis
- Plasmocyte Leukemia
- Polycythemia Vera
- Refractory Anemia
- Sandhoff Disease
- Scleroderma
- SCID

- Sickle Cell Disease
- T-Cell Immunodeficiency
- Thalassemia
- Wiskott Aldrich Syndrome

Diseases potentially treated with cord blood stem cells in the future (clinical trials in progress)

- Alzheimer's disease
- Cerebral palsy
- Heart disease
- Parkinson's disease
- Spinal cord injury
- Autism
- Diabetes
- Muscular dystrophy
- Peripheral vascular disease
- Stroke

## What are cord tissue stem cells?



Cord tissue contains high numbers of mesenchymal stem cells (MSCs), which is easily expanded, meaning that it is relatively easy to grow in culture to increase the total number of cells. It can differentiate into bone cartilage, muscle, heart, fat, and nerve cells.

[Clinicaltrials.gov](https://clinicaltrials.gov) currently lists 595 (As of March 2016 posted on [ClinicalTrials.gov](https://clinicaltrials.gov)) on studies with mesenchymal stem cells

| Type of Study | # of Studies |
|---------------|--------------|
|---------------|--------------|

| <b>Type of Study</b>             | <b># of Studies</b> |
|----------------------------------|---------------------|
| Heart Disease                    | 68                  |
| Autoimmune Disease               | 57                  |
| Liver Disease                    | 51                  |
| Graft-Versus-Host Disease (GVHD) | 44                  |
| Lung Disease                     | 44                  |
| Diabetes                         | 37                  |
| Kidney Disease                   | 34                  |
| Skin                             | 32                  |
| Others                           | 228                 |

## Preservation Process



1.

Call toll free number 866.389.4659 for more information or fill out the inquiry form



2.

Choose a plan suitable to you and complete all paperwork



3.

Receive temperature-controlled collection kit



4.

The collection process is completely noninvasive and does not cause any harm to mother and baby



5.

Call 866.389.4659 to arrange collection kit pick up



6.

Testing on cord blood / tissue, including total cell count and sterility of the unit, to name just a few, as well as infectious disease testing on the maternal sample.



7.

The umbilical cord blood will be stored at very low temperatures of (-) 196 degrees Celsius in liquid nitrogen vapor phase dewars.



8.

You shall receive a Certificate of Storage with all important data required for the transplant.



9.

Always be there for you.....

**fact** Foundation  
for the  
Accreditation  
of Cellular Therapy

**FDA**  
REGISTERED

**aa** Accredited

