Cord Blood Stem Cells
The Gift of Life

GeneCell
INTERNATIONAL
Processing • Storage • Research
STEM CELL LABORATORY
www.genecell.com
Umbilical cord blood is a rich source of stem cells, which may potentially help your baby and your family from numerous diseases.

There are many benefits of the stem cells from umbilical cord blood; they have treated thousands of people and researchers are currently exploring new potential uses for certain conditions such as diabetes, heart disease and stroke.
A potential life saving decision for the future

Your pregnancy gives you a unique opportunity to do something extraordinary for your whole family.

When you decide to preserve your newborn baby's umbilical cord blood with GeneCell International™ you will secure the potential opportunity for your baby and your family to have access to a cell therapy-product treating approximately 80 conditions, including several types of cancer, metabolic disorders, blood disorders and immune system deficiencies.

Currently, collection of the umbilical cord blood is one of the most rapidly increasing obstetrical procedures. Every year thousands of new parents, who do not have certain illnesses in their family's clinical history, decide to preserve the umbilical cord blood stem cells from their babies. They understand that as long as the research efforts persist, new discoveries will be made for the use of these cells, and their value will greatly increase.

Scientists are beginning to appreciate the full potential of the stem cells from umbilical cord blood. Therefore, the future may hold endless possibilities for the applications of these potential lifesaving cells.

In the past, the umbilical cord and related material has been view as medical waste and discarded.

It's an irony that such should be the fate of this life-saving resource.

If you do not preserve your baby's cord blood stem cells at the moment of delivery, you may never be able to take advantage of its future potential.
The stem cells from the umbilical cord blood can be used for the baby and potentially siblings and other family members.
Stem cells are generically defined as precursor or progenitor cells that have the potential to differentiate into a wide variety of tissue. Although often dichotomously categorized as either embryonic or adult, they actually represent a continuum of cell types that eventually transform into our “end-product” tissue. Umbilical cord blood is rich in adult stem cells (minimizing any political or ethical issues as seen with embryonic stem cells) and can be used clinically to treat approximately 80 different disorders. In addition, more research is being performed investigating the possibility to use these cells as a therapy for many other diseases including diabetes and Parkinson’s disease. If these cells are discarded after the birth of your child, this valuable cellular therapy will be lost.

What are stem cells?

Stem cells are currently used to treat blood and metabolic disorders that can be produced in children and adults, like leukemia.

Finding a genetic match from a public stem cell bank can be quite challenging or next to impossible for certain mixed ethnicities, such as Hispanics, African Americans, Asians and Native Americans.

• Match for Donor/Child = 100%
• Match for Parent = 50%
• Match for Sibling = 25%
1 in 400 for a Donor/Child (Blood, October 2004).

Benefits of cord blood stem cells

We can currently use stem cells from the umbilical cord to treat blood and metabolic disorders that can be produced in children and adults, like leukemia.

Finding a genetic match from a public stem cell bank can be quite challenging or next to impossible for certain mixed ethnicities, such as Hispanics, African Americans, Asians and Native Americans.

• Match for Donor/Child = 100%
• Match for Parent = 50%
• Match for Sibling = 25%
1 in 400 for a Donor/Child (Blood, October 2004).

IMPORTANT CORD BLOOD STATISTICS

1 in 7 North Americans prior to age 70 will require treatment for cardiac repair (i.e., Myocardial Infarction or Congestive Heart Failure) (Nietfeld & Verter, 2004).

Over 6,000 cord blood Stem Cell transplants have been reported worldwide.

More than 400-500 new patients receive treatment annually.

In the near future, stem cells may be used in new therapies such as neurological disorders, such as Alzheimer, and Parkinson’s Disease, treatment of cardiovascular diseases, and diabetes.

The stem cells from the umbilical cord blood are considered to be one of the most promising therapies in the future. Those who preserve the cord blood stem cells do it in order to feel at ease, knowing that those cells can have current and future uses extremely valuable for their family.
Umbilical cord blood: An excellent source of stem cells

Your baby's stem cells from the umbilical cord blood are a potential and valuable medical resource for your family too.

Stem cells from the umbilical cord blood, like those from the bone marrow, are non-controversial and do not stimulate political or ethical debates related to other kinds of stem cells, such as the embryonic stem cells.

- The stem cells from umbilical cord blood are currently used to treat approximately 80 diseases, including several kinds of cancer.
- Stem cells from umbilical cord blood can be used for the baby and potentially, siblings and other family members.
- Currently scientists are researching additional potential uses of stem cells for several diseases among which are diabetes and heart disease.

The remaining blood in the cord and the placenta, once separated from the baby, is normally discarded as medical waste. We know today that this blood is a rich source of such an important lifesaving miracle this is why its collection and preservation is so important.

What is the umbilical cord?

It is the vascular link formed by two arteries and a vein connecting the placenta with the baby. It is normally cut and discarded when the baby is delivered.

What is the Placenta?

It is the organ through which the mother's blood stream and the fetal one interact without mixing to achieve the nutrients and oxygen supply to the fetus from the mother's blood. The waste generated by the fetus is also eliminated in this process.

Why should I preserve these cells?

Since 1988, the year in which the first successful transplant was carried out, the use of stem cells from the umbilical cord blood has increased year by year, and now thousands of those transplants are being carried out throughout the world. The transplant field has been continuously enhanced with new scientific discoveries, but unfortunately one of the greatest problems is the lack of donors who match genetically with the needy recipients.

Preservation of these stem cells allows us to ensure your baby a source of cells for a potential cell therapy.

Research is also being conducted with the purpose of the regeneration of specific tissues such as heart muscle damaged by a heart attack, or diseases that damage the nervous system to treat Alzheimer and Parkinson disease.
Potential Uses

"Research related to Stem Cells could eventually lead to therapy that could be used in treating diseases that affects nearly 128 millions of Americans"

Extract from a press release from the White House dated 9/8/01
Various diseases that can be treated with umbilical cord blood stem cells

Here we provide a list of diseases that have been treated with stem cells from umbilical cord blood. However, this list continues to grow as long as research advances. If you wish to ask any questions about a disease that does not appear on this list do not hesitate to contact GeneCell International™.

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Metabolic congenital errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Acute lymphoblastic Leukemia (ALL)</td>
<td>• Adrenoleukodystrophy</td>
</tr>
<tr>
<td>• Acute Myelogenous Leukemia (AML)</td>
<td>• Batten disease (Neuronal Hereditary Lypofuscinosis with ceroidosis)</td>
</tr>
<tr>
<td>• Burkitt lymphoma</td>
<td>• Gunther disease</td>
</tr>
<tr>
<td>• Chronic Myelogenous Leukemia (CML)</td>
<td>• Hunter syndrome</td>
</tr>
<tr>
<td>• Juvenile chronic myelocytic leukemia (JCML)</td>
<td>• Hurler syndrome</td>
</tr>
<tr>
<td>• Juvenile myelomonocytic leukemia (JMML)</td>
<td>• Krabbe disease (globoid cell dystrophy)</td>
</tr>
<tr>
<td>• Lipo sarcoma</td>
<td>• Maroteaux-Lamy Syndrome</td>
</tr>
<tr>
<td>• Myelodysplastic Syndrome</td>
<td></td>
</tr>
<tr>
<td>• Chronic myelomonocytic Leucemia (CMML)</td>
<td></td>
</tr>
<tr>
<td>• Neroblastome</td>
<td></td>
</tr>
<tr>
<td>• Non Hodgkin Lymphoma</td>
<td></td>
</tr>
<tr>
<td>• Hodgkin Lymphoma</td>
<td></td>
</tr>
<tr>
<td><strong>Bone marrow failure syndromes</strong></td>
<td><strong>Immunodeficiencies</strong></td>
</tr>
<tr>
<td>• Severe aplastic Anemia</td>
<td>• Omen Syndrome</td>
</tr>
<tr>
<td>• Diamond-Blackfan anemia</td>
<td>• Combined severe immunodeficiency syndrome (SCID Y SCID-ADA)</td>
</tr>
<tr>
<td>• Congenital dyskeratosis</td>
<td>• Reticular Dysplasia</td>
</tr>
<tr>
<td>• Fanconi Anemia</td>
<td>• Thymic Dysplasia</td>
</tr>
<tr>
<td>• Amegacariocytic thrombocytopenic</td>
<td>• Wiskott-Aldrich Síndrome</td>
</tr>
<tr>
<td>• Kostmann Síndrome</td>
<td>• Lipoproliferative syndrome linked to the X chromosome</td>
</tr>
<tr>
<td></td>
<td>• Leukocitary adherence deficit.</td>
</tr>
<tr>
<td><strong>Blood disorders/Hemoglobinopathies</strong></td>
<td></td>
</tr>
<tr>
<td>• Sickle cell anemia</td>
<td><strong>Other diseases</strong></td>
</tr>
<tr>
<td>• β-Thalasemia (Cooley anemia)</td>
<td>• Langerhans cells hystocitosys</td>
</tr>
<tr>
<td></td>
<td>• Evan Syndrome</td>
</tr>
<tr>
<td></td>
<td>• Family hemofagocytic.Lymphohistocitosys</td>
</tr>
<tr>
<td></td>
<td>• Hemofagocytic.Lymphohistocitosys linked to the Epstein Barr virus</td>
</tr>
<tr>
<td></td>
<td>• Osteopetrosis</td>
</tr>
</tbody>
</table>

Even though the applications of umbilical cord blood stem cells are increasing, it is unlikely that a relative who does not suffer from these diseases would need the umbilical cord blood. There are not any warranties that this blood may be compatible or that it may produce any cure.

The stem cells from the umbilical cord blood do not guarantee an adequate treatment for all genetic hereditary diseases. As in any other transplant therapy, the efficacy of the therapy depends not only on the stem cells themselves but in many other factors such as the relation and the compatibility between the recipient and the donor.
Cord Blood Banking – How does it work?

1. The first step is to enroll online or by phone. Once the contract is received, a collection kit will be shipped out to you.

2. When you receive the collection kit, store it in a safe place (at room temperature) with your birthing materials. On the big day, when you’re admitted to the hospital, provide the kit to the delivering physician.

3. Immediately after birth, your physician will commence the cord blood collection. The objective is to collect as much blood as possible to ensure a maximum amount of stem cells.

4. Thereafter, the physician is to fill out the required documents and labels included in the collection kit. Place the documents inside the kit and keep it at room temperature.

5. Please contact GeneCell at 1-888-994-3632 or 305-382-6737 to notify that your baby’s cord blood has been collected. We will assist you in transporting the unit to our laboratory.

6. Once our laboratory has received your baby’s cord blood unit, you will receive confirmation of its arrival. The laboratory will process and cryopreserve the cord blood unit. Various tests will be conducted to determine stem cells concentration, viability, sterility and infectious diseases.

7. While your baby’s cord blood unit is cryopreserved at -196°C (-321°F) at our state-of-the-art laboratory, it will continuously be monitored 24 hours / 7 days a week with video alarm systems and backup generators.

8. Within approx. 6-8 weeks, you will receive a laboratory report containing the results of your baby’s cell count and viability.
GeneCell International™

Our Laboratory

GeneCell International™ is committed to excellence in processing and cryogenically storing your child's cord blood. Using state-of-the-art equipment and highly qualified personnel, we ensure the highest quality standard is upheld thus providing the best possible service for our clients.

Our laboratory is based in the dynamic city of Miami, by making south Florida our home we have access to a very diverse clientele providing us with the unique opportunity of working in a world class city known for being the gateway to international communities.

Our highly qualified laboratory director who has overseen tens of thousands of processed cord blood units, and has also released units for transplant supervises our laboratory. The laboratory technicians are highly experienced in processing and storing cord blood.

Our clients can rest assure that their child's processed cord blood will be stored under proper temperatures at all times. Our cryogenic storage devices are monitored and backed up by our reliable generators and back up nitrogen tanks in the facility.

Our Processing

Your child's cord blood can be shipped to our facility immediately after the collection has taken place. All the necessary materials needed for the processing of your child's cord blood will arrive at our laboratory under controlled conditions in order to guarantee the safeguard of the unit. We process our client's cord blood using a widely accepted and validated volume reduction system. This system is very efficient in recovering a high number of total nucleated cells needed for transplant.

As part of our processing procedures we will test the cord blood samples for cell viability and total Stem Cells using flow cytometry. The cord blood will also be tested to determine the sterility and total nucleated cell count (TNC). The maternal blood collected at the time of delivery will be tested for infectious diseases and blood type. All our processing and testing takes place under Strict Quality Control conditions.

Our Cryogenic Storage

An important aspect to maintain viability of the Umbilical Cord Blood Stem Cells throughout the processing and cryopreservation is controlling the rate of freezing and the subsequent sustained cryogenic temperature of the cells once they are in cryogenic storage. Our laboratory uses a staged freezing process that ensures the cell's future viability. Once the cells are brought to the optimum temperature, they are placed in an overwrap bag and place in a cryogenic storage cartridge, which then goes into the cryogenic storage tanks.

GeneCell International™
The Continuation of Life
Processing • Storage • Research

FDA REGISTERED
Banking the umbilical cord blood stem cells of your newborn is a life-saving opportunity.