



UMBILICAL CORD BLOOD

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Research has revealed that umbilical cord blood, traditionally discarded at birth, contains special cells called stem cells, which can now be used as part of the treatment therapy for nearly 50 life-threatening diseases*. Cord blood banking allows you to preserve these stem cells for your family's future use if the need arises.

WHAT IS UMBILICAL CORD BLOOD?

Umbilical cord blood is the blood that remains in the umbilical cord after your baby is born. It is a substance, which, like bone marrow, is rich in stem cells - the building blocks of the blood and immune systems and potentially the nervous system, skin, bones, heart, endocrine organs, and other body tissues. Stem cells divide to create the following elements of the blood and immune systems:

- New red blood cells which carry oxygen
- New white blood cells used in the body's immune system for fighting infections
- New platelets which help proper clotting of blood and healing

Cord blood stem cells are used in the treatment of certain cancers, such as leukemia, and immune and genetic disorders.* Cord blood provides a readily available source of stem cells for transplantation in many situations where bone marrow is considered.

Cord blood research is continually being conducted to understand its full potential in stem cell transplantation.

WHY PRESERVE CORD BLOOD?

Umbilical cord blood is a source of stem cells that can be used as part of the treatment therapy for nearly 50 malignant and non-malignant diseases* including certain cancers, such as leukemia, and immune and genetic disorders. Preserving cord blood is a very simple and painless procedure, but it must be done at birth.

Other sources of stem cells include bone marrow and peripheral blood, however there are a number of benefits to using cord blood stem cells:

- There is no risk involved in the collection of cord blood.
- Cord blood is much easier to collect and harvest without the risks of general anesthesia required to harvest bone marrow.
- Cord blood is readily available when needed (if collected and stored at birth).
- Cord blood is often more compatible when used in transplants, especially when it is used within the family, creating less chance of rejection (though it usually takes longer to engraft).
- Cord blood has lower procurement costs compared with peripheral blood or bone marrow harvesting.

HOW IS CORD BLOOD PRESERVED?

In order to preserve your child's cord blood, it first must be collected and subsequently stored. Once the blood is collected, it is stored at a long-term storage facility.

There are several steps involved for collecting and storing your baby's cord blood. The collection process itself is easy and painless, and does not interfere with the delivery or subsequent care for your newborn and yourself. Here's how it works:

1. When your baby is delivered, the umbilical cord is clamped and cut. Your baby is then removed from the birthing area prior to commencing the collection.
2. Next, before the placenta is delivered, your obstetrician or midwife cleans a four- to eight-inch area of umbilical cord with antiseptic solution and inserts the blood bag needle into the umbilical vein. The blood flows into the bag by gravity, until it stops, after which the collection is complete. The blood bag is clamped, sealed and labeled. The collection typically takes two to four minutes. Two tubes of maternal blood are also drawn.

WHO CAN BENEFIT FROM THE CORD BLOOD?

Stem cells in cord blood are genetically unique to the newborn's family. Siblings of the newborn have up to a 50 percent chance of being a match for the stem cells in the cord blood. There is no data on how well cord blood matches other members of the family outside of the siblings. The possibility also exists that the stored stem cells would be compatible with persons outside the family.

IS CORD BLOOD AN ASSURED TREATMENT FOR CERTAIN DISEASES?

No, cord blood stem cells are not an assured treatment for any disease. The use of a person's own cord blood may not be the best treatment if the disease has a genetic component, in which case the cord blood would cause the same problem. Cord blood banking is an alternative way of obtaining valuable stem cells in a timely manner in case they are ever needed. As research continues, other viable uses for stem cells will probably surface.

Everyday it seems news stories are surfacing that highlight medical professionals talking about the value of stem cells. Research, like that being done by Viacord's parent company ViaCell, is demonstrating that stem cells may someday change the way many more diseases are treated.

In addition to the cancers, bone marrow failure syndromes, blood disorders and other current applications, cord blood stem cells may potentially be used in the treatment of:

- Stroke
- Certain autoimmune disorders (ex: Diabetes, Lupus)
- Neurological disorders (ex: ALS, Multiple Sclerosis, Muscular Dystrophy)
- Muscular/cartilage diseases
- Heart Disease

THE POTENTIAL OF CORD BLOOD

Today, cord blood can be used as part of the treatment therapy for nearly 50 life-threatening diseases*. Cord blood is currently being used in the treatment of a wide range of cancers, genetic diseases, immune system deficiencies and blood disorders. Cord blood is being used in the treatment of more and more diseases*. This list has grown dramatically in the last few years (see the active list). Just think of the possibilities twenty years from now.

WHAT DO I NEED TO DO IF I WANT TO HAVE MY BABY'S CORD BLOOD STORED?

Two types of agencies collect and store cord blood: Nonprofit blood banking agencies such as the American Red Cross and private organizations.

Nonprofit agencies collect blood from as many deliveries as possible and store it for anyone who needs it. The family and/or donor have no absolute claim over the stored cells.

Private corporations insure the availability of the stem cells for the donor and family in the event it is needed.

* Although the potential use of Umbilical Cord Blood is expanding rapidly, the odds that a family without a defined risk will need to use their child's cord blood are low. There is no guarantee that the umbilical cord blood will be a match for a family member or will provide a cure. As with any transplant therapy, therapeutic success depends upon many factors beyond the stem cells themselves including patient condition, type of disease, recipient-donor relationship matching, and other factors.

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