



## Preserve Cord Blood! Save Life!

Umbilical cord blood is blood that remains in the placenta and in the attached umbilical cord after childbirth. Cord blood is collected because it contains potentially life-saving cells known as stem cells, which could be used to treat hematopoietic and genetic disorders. These hematopoietic stem cells (which can differentiate only into blood cells) are different from the embryonic stem cells (pluripotent stem cells) obtained from early stage embryo, which can differentiate into any cell in the body.

The cord blood sample is taken from a newborn baby's umbilical cord. Cord blood stem cells are blood cell progenitors which can form red blood cells, white blood cells, and platelets. This is why cord blood cells are currently used to treat blood and immune system related genetic diseases, cancers, and blood disorders including leukemia, lymphoma and anemia. The most common disease category targeted has been leukemia.

### How is cord blood collected?

Cord blood is collected right after birth. The collection process is painless and safe for you and your baby. In fact, it's so quick and painless that parents are often unaware it has even happened.

- ✂ **Clamping and cutting the cord:** After you have delivered your baby, whether vaginally or by C-section, the cord is clamped and then cut in the usual way by your medical provider.
- ✂ **Extracting the cord blood:** Your medical provider then inserts a needle into the umbilical vein on the part of the cord that's still attached to the placenta. The needle doesn't go anywhere near your baby.
- ✂ **Off to the bank:** The blood is shipped to a cord blood bank, where it is tested, processed, and cryopreserved (preserved by controlled freezing) for long-term storage if deemed acceptable according to quality standards.

Some cord blood banks now offer to collect a segment of the umbilical cord in addition to the cord blood. Umbilical cord tissue contains stem cells that are different from cord blood stem cells, and researchers are studying their possible use.

### Cord blood harvesting:

Collected cord blood is cryopreserved and then stored in a cord blood bank for future transplantation.

A cord blood bank may be private (i.e. the blood is stored for and the costs paid by donor families) or public (i.e. stored and made available for use by unrelated donors). While public cord blood banking is widely supported, private cord banking is controversial in both the medical and parenting community.

### Why Is Cord Blood Worth Saving?

- ✂ Stem cells are immature cells that can both reproduce themselves and have the potential to turn into other types of cells. There are several types. The ones in umbilical cord blood and bone marrow are called hematopoietic progenitor cells (HPCs).
- ✂ Some people (usually children and, sometimes, adults of small size) with certain diseases -- like leukemia, lymphoma, sickle cell anemia, and others - can be injected with these HPC stem cells to replenish their blood

supply with new, healthy cells. The stem cells can also help the body recover from bone marrow suppression caused secondarily to cancer treatment modalities like chemotherapy or radiation.

✂ It is now well known that cord blood cells can be lifesaving. Cord blood is a proven, effective source of blood-forming stem cells for people with certain diseases.

### What are possible future uses of cord blood?

- ✂ Studies are under way around the world to explore new ways of using cord blood.
- ✂ Cerebral palsy and autism: Children in clinical trials are treated with their own cord blood for autism, a condition that affects 1 in 88 children.
- ✂ Hydrocephalus, type 1 diabetes, Alzheimer's disease, spinal cord injuries, heart failure, stroke, and many more conditions may be treated in future using cord blood cells.

### Reference Links:

- ✂ [http://www.babycenter.com/0\\_banking-your-babys-cord-blood-an-overview\\_1362261.bc](http://www.babycenter.com/0_banking-your-babys-cord-blood-an-overview_1362261.bc)
- ✂ <http://www.webmd.com/parenting/baby/features/banking-your-babys-cord-blood>
- ✂ [http://en.wikipedia.org/wiki/Cord\\_blood](http://en.wikipedia.org/wiki/Cord_blood)

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