

Cord Blood Preservation

Frequently Asked Questions

1. Why do families preserve cord blood?

Every month, approximately 10,000 families preserve their newborn's cord blood stem cells – here are some of the reasons why:

- Cord blood is a rich and non-controversial source of stem cells. Today, stem cells treat cancers (e.g. leukemia), cure blood diseases (e.g. Fanconi Anemia) and repair tissue (e.g. cardiac). Cord blood stem cells have been used in the treatment of over 40 diseases and have been used in more than 6,000 life-saving transplants.
- Looking ahead, scientists are working with cord blood stem cells as a potential for heart disease and working to develop cell expansion technologies designed to allow a single cord blood unit to be used for multiple uses. If the FDA does approve cell expansion technology, families may have the potential to use their cord blood unit for multiple family members and multiple treatments. ¹
- Stem cells from a related source are the preferred option for treatment. A related source of stem cells is the preferred option because the data shows the survival rate of a transplant patient using related (family) stem cells is more than twice that of a patient receiving an unrelated (public).²

2. How is cord blood collected?

- The collection process is easy and painless for both the mother and baby and does not interfere with the delivery or subsequent care for either.
- After the baby is born, but before the placenta is delivered, an obstetrician or midwife cleans a 4-to-8 inch area of the umbilical cord with antiseptic solution and inserts a needle connected to a blood bag into the umbilical vein.
- The blood flows into the bag by gravity until the umbilical vein is emptied. The blood bag is clamped, sealed and labeled. The collection typically takes about 2 to 4 minutes.

3. Who can use my newborn's cord blood stem cells?

- Your newborn's cord blood stem cells have the potential to be used for the child, and if there's an adequate match, for siblings, parents and first cousins.
- An adequate match using related cord blood is defined as a 3 of 6 HLA Match. HLA, or Human Leukocyte Antigens, are proteins located on the surface of the white blood cells and other tissues in the body. When two people share the same HLAs, they are said to be a 'match' which means their tissues are immunologically compatible.
- With your newborn's cord blood, there is a 100% probability of an adequate match for the child and a 75% probability for siblings.
- It is, however, important to understand that there are certain genetic diseases that cannot be treated with one's own stem cells. In this case, a transplant physician would first look for an adequate match in a sibling or other family member.

4. How long do cord blood stem cells last?

- At this point in time it is well-established that there is no significant decline in cell viability after 15 years.³
- Although there's no definitive data on how long cord blood stem cells last, the New York State Health Department Guidelines for cord blood banking state "there is no evidence at present that cells stored at -196 °C in an undisturbed manner lose either in vitro determined viability or biologic activity."

5. What are the odds of being diagnosed with a disease treatable with cord blood?

- The latest statistics suggest that by the age of 50, there is a 1-in-100 chance for any given individual to be diagnosed with one of the 40 diseases now treatable with cord blood.
- It is, however, important to understand, that the transplant physician will make the choice of treatment options. The use of your family's cord blood stem cells may or may not be the recommended treatment option for a particular diagnosis.⁴

6. How much does it cost to preserve cord blood with a Family Bank?

Generally, the cost for cord blood stem cell preservation has a one-time charge ranging from \$1,600-to-\$1975 and an annual charge for storage of \$125. Some companies offer extended payment terms for as little as approximately \$40/month.

7. Can I donate my newborn's cord blood stem cells to a Public Bank?

- Currently the options for publicly-donating cord blood are limited. There are certain regions of the country where this option is available. For more information on public banking, visit the Bone Marrow Foundation at www.bonemarrow.org.
- Looking ahead, the Federal Government, through The Institute of Medicine, has proposed a National Cord Blood Stem Cell Banking System. If this initiative is successful, it is estimated that nearly 90% of patients needing a stem cell transplant, will find an acceptably-matched, unrelated unit.

8. If we donate our baby's cord blood to a public bank, will we be able to access the unit if needed?

- Unfortunately, it's very unlikely. When you donate your cord blood unit to a public bank, you relinquish all rights to that unit. Additionally, because of public banking's acceptance criteria (e.g. collection volume and HLA type, approximately 70% of donated cords are discarded and never made available for transplant.
- Regardless, public banks often can help you procure an unrelated cord blood unit that may be suitable for transplant.

9. What features should I look for in a cord blood preservation company?

You want your family's cells to have the greatest therapeutic value. Therapeutic value is likely to be determined by the quality of the cells and the probability that these cells will be able to take advantage of future technologies. Two of the critical features you should evaluate when assessing a company's quality are:

- A) Transplant Results:** Published transplant results with comparable or superior outcomes (survival, engraftment and GvHD) to industry norms is a good indicator of a company's quality.
- B) Well-Established and Validated Processes:** Collection, processing and cryopreservation methods used by the leaders in cord blood transplantation and supported by industry regulations are another good indicator of quality. The industry leaders and regulations support a Closed Processing System and Cryopreservation in a Segmented Cryobag.
 - 99%+ of the 6000+ cord blood transplants done worldwide have used the cryobag storage method.
 - The leading cord blood centers (New York Blood Center, Duke Medical Center and NMDP) representing the majority of transplants performed, use the closed processing method and store in cryobags.
 - FDA regulations, AABB standards and IOM recommendations support a company's use of a closed processing system and storage in cryobags.

REFERENCES

¹ *There is no guarantee that cell expansion technologies will ever be approved by the FDA*

² *Source: Gluckman, et al. New England Journal of Medicine, 1997; 337:373*

³ Broxmeyer et al, PNAS, January 21, 2003, Vol. 100, no. 2 645-650

⁴ If the cord blood stem cells are used, therapeutic success depends on many factors, including without limitation, the quality and volume of cord blood stem cells, patient condition, and in the case of non-donor transplants, the recipient-donor relationship and genetic matching.

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