

North Carolina Women's Hospital
Donation of Umbilical Cord Blood Cells

What are umbilical cord blood cells?

Umbilical cord blood cells are a special type of cell found in the blood of your baby's umbilical cord. These cells are also called stem cells.

What are stem cells used for?

Stem cells can be used to make different kinds of cells in the body. These new cells can be used to treat some medical problems including leukemia (a type of blood cell cancer), some types of anemia and other medical conditions. These cells are not used for cloning.

How are stem cells collected?

A member of your medical team or a representative from the cord blood bank will collect blood from the placenta and umbilical cord after delivery. There is no pain for the mother or baby since cells are collected after the baby has been delivered and the umbilical cord has been cut. If the stem cells are not stored, they are typically thrown away after a baby is born.

How are stem cells stored?

After cord blood is collected, the cells are isolated and frozen for future use. There are two options for storing these frozen cells:

- A public cord blood bank
- A private cord blood bank

How does a public cord blood bank work?

- When you are admitted to labor and delivery, someone from the cord blood bank will come and talk with you about the option of donating cord blood. If you decide to donate, they will take your consent at that time.
- Once the blood is collected, the cells in the blood are tested to see if they are usable.
- Cord blood cells are then tested to see what type they are. This helps the bank to know which patients could use the cells for treatment. This information is put into a secure computer database.
- Cells are frozen and saved in a central storage facility where they are available to any patient who needs them for treatment.
- It is important to remember that if you use a public bank, your baby's cord blood cells are not saved for your baby or your family, except for some very specific situations. They can be used by anyone who needs them.
- Public cord blood banks are **free**.

How does a private cord blood bank work?

- After delivery, your provider collects the cord blood using a kit that the private cord blood bank has sent you before birth.
- The cells are sent to the private bank where they are frozen and stored. These cells are then reserved for your baby and your family.
- Private cord blood banks charge a fee for storing these cells. The cost depends on the specific bank used, however, there is usually an initial fee for freezing the cells and then an additional yearly or monthly fee to keep the cells stored.

What are my options for cord blood banking if my baby is born at the University of North Carolina Women's Hospital?

At UNC Hospitals, we offer both public and private cord blood banking.

For public banking, we use the Carolina's Cord Blood Bank, which collects blood at UNC Hospitals, Duke Medical Center, Durham Regional Hospital and Western Wake Hospital.

For private banking, you may use the cord blood bank of your choice. The bank will then send you a collection kit that contains everything your provider will need to collect your baby's cord blood. You must remember to bring the kit to the hospital when you deliver. You will then be responsible for transporting the collection to the private bank.

There are some medical situations that may prevent you from donating cord blood. The representative from the cord blood bank will talk with you about these conditions.

What are some of the reasons to choose public banking rather than private banking?

- The odds of finding a cord blood donor from a public bank are already quite high and improving steadily as public cord blood bank donations increase.
- The chance of a child using his or her own cord blood for transplant is extremely small. It has been estimated to be between 1 in 1000 to 1 in 200,000.
- Many private banks do not have a program in place to check the quality of cells. Even when properly trained people collect cord blood, about 1 in 3 units are unusable.
- Many doctors who treat children with leukemia or other medical problems do not think children with the disease should receive their own stem cells. There are two reasons for this:
 - A child's own stem cells may already have a genetic change that caused their disease.
 - In children with leukemia, their own cells may not fight off the leukemia cells as well as the stem cells from another person (this is called graft-vs-leukemia effect).
- Although stem cells from umbilical cord blood could be used for older children or adult relatives with leukemia or other diseases, very few of these attempts have been successful. This is because there are not usually enough stem cells in one baby's umbilical cord blood to treat an older child or adult. Cord blood transplants from multiple donors have been more successful.

For more information on public cord blood banking at UNCH, you can contact Carolinas Cord Blood Bank at (919)843-0918.

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