Association for the Advancement of Blood & Biotherapies

CORD BLOOD MYTHS AND FACTS

Originally provided by the Cord Blood Association, now shared in partnership with AABB.*

From time to time, blood and marrow transplant physicians and personnel involved in cord blood banking hear statements that are based on inaccurate information or conjecture. This document is intended to clear up such misinformation and provide facts regarding cord blood.

Myth: *The virus that causes COVID-19 can be passed to a patient in a cord blood transplant.*

Fact: There are no known reports of coronavirus transmission in a transplant. In fact, there has never been a documented case in which any kind of respiratory virus has been transmitted to a patient by implantation, transplantation, infusion, or other transfer of cells or tissues.

Myth: *Cord blood is a medical waste that has no value.*

Fact: A baby's umbilical cord contains blood-forming stem cells that, when transplanted, can rebuild the bone marrow and immune system and save the life of a patient with a serious blood disease such as leukemia, lymphoma or sickle cell disease. Infusion of these cells can also treat patients with inherited genetic disorders, bone marrow failure or inherited immune deficiencies.

More than 60,000 patients with serious diseases and disorders have benefited from cord blood treatments since the first transplant in 1988.

Myth: *Cord blood collection could affect or harm my baby.*

Fact: Cord blood is collected from the umbilical cord and placenta (often called "afterbirth") after the baby is delivered and the cord has been cut. No blood is taken directly from your baby. The collection procedure does not interfere in any way with labor or the baby's delivery, and poses no risk to the mother or baby.

Myth: *Expecting parents have up until the time of the baby's delivery to decide to collect or donate cord blood.*

Fact: Preparations need to be made in advance of delivery for the collection of cord blood. Expecting parents should talk to their obstetrical physician or other health care provider between the 28th and 34th week of pregnancy about their interest in storing or donating a baby's cord blood.

Some public donation programs allow mothers to consent to donate their baby's cord blood after they are admitted to the hospital to deliver their baby, if they are in early labor.

*This material was originally produced by the former Cord Blood Association (CBA), shared in partnership with AABB. Content may not reflect AABB's current positions or standards.

Myth: *Cord blood can be donated at almost any hospital.*

Fact: Unfortunately, not every hospital offers the option of cord blood donation. The NMDP (formerly called National Marrow Donor Program/Be The Match) maintains a website that lists many of the U.S. hospitals that collect cord blood for public banks. Similar information for many other countries is available on the website of the Parent's Guide to Cord Blood Foundation.

If you are considering donation, ask your health care provider if donation is possible at the hospital where you plan to deliver your baby.

Myth: *Cord blood stored in a family bank can be used for treating anyone in the family.*

Fact: Cord blood stored in a family bank cannot necessarily be used to treat any member of the family. Cord blood cells have genetic markers called human leukocyte antigens (HLA) that need to closely match those of the patient. Brothers and sisters with the same biological parents have a 25% chance of being a perfect match, and a 50% chance of being a partial match. Other family members are much less likely to be a match.

Myth: *There is little reason to store cord blood since stem cells can be accessed from other sources, such as bone marrow.*

Fact: Cord blood is one of three sources of blood-forming stem cells used in transplants. The other two sources are bone marrow and the blood that circulates through the body (called peripheral blood). Each source has advantages and disadvantages for various diseases, stages of disease and patients. Among other advantages of cord blood are:

- Unlike cells from adult donors, cord blood has not been as exposed to viruses, chemicals and environmental pollutants that can alter cell function.
- Cord blood immune cells are immature and can tolerate a recipient better than adult cells, so cord blood cells do not have to be matched as closely to the patient as do cells from adult donors.
- Cord blood may be accessed more quickly than stem cells from an adult donor who may have registered for donation years ago. The donor must be located, consented, tested and harvested.
- Consequently, cord blood may be the preferred source for patients who have an urgent life-threatening genetic disorder, need a transplant quickly, or have an uncommon tissue type because of their racial or ethnic heritage. Cord blood also can be easier to access during pandemics and travel restrictions. The transplant physician team, together with the patient, can determine the best stem cell source from the available options.

Myth: *Cord blood treatments are experimental.*

Fact: Cord blood is an accepted source of blood stem cells for patients undergoing a blood transplant. As such, they are used in treating more than 80 blood cancers, inherited genetic diseases, bone marrow failure and immune diseases.

In other areas, cord blood therapies are being studied for nerve, heart, bone, autoimmune and metabolism diseases, especially in the rapidly advancing field of regenerative medicine. The value of cord blood therapies for these diseases is being determined by ongoing studies.

Myth: *When clamping of the umbilical cord is delayed, there aren't enough stem cells left in the cord to make storage or donation worthwhile.*

Fact: Several obstetric organizations in the United States, the United Kingdom and Canada have recently recommended a delay of 30-60 seconds between delivery and umbilical cord clamping in healthy, full-term babies. It is believed that delayed clamping may have a beneficial effect in the newborn.

Delayed clamping can reduce the volume of stem cells remaining in the umbilical cord, but that does not necessarily make the volume unsuitable for storage or donation. On the other hand, if the baby's cord blood is being stored for a known use – such as transplant of another family member with leukemia – delayed clamping is not advised.

Expectant parents should discuss options for delayed clamping with their obstetrics provider.

Myth: *I can donate my baby's cord blood to a public bank if I no longer want to store it privately.*

Fact: Regulations in most countries do not allow cord blood that has been stored in a family bank to later be donated to a public bank. However, a few countries do allow privately banked cord blood to be used publicly if the family who stored the cord blood unit agrees.

Myth: *Cord blood transplantation is limited to the treatment of hematologic or blood diseases.*

Fact: Cord blood transplantation is an accepted treatment for blood diseases such as leukemia, lymphoma or sickle cell, as well as inherited genetic disorders, bone marrow failure and immune deficiency diseases.

In addition to these, research is under way to determine whether components of cord blood can treat other medical conditions such as birth asphyxia (brain damage from lack of oxygen), cerebral palsy, stroke, and autism. Cord blood therapies for these brain injuries and diseases are not standard medical practice, but are being evaluated in ongoing clinical studies and may prove useful in the future.

Myth: *Cord blood therapies are limited to the treatment of children.*

Fact: In the early years of cord blood transplants this was true because of the limited dose of stem cells in a typical umbilical cord unit. However, as dosing of cord blood cells has become more completely understood, adults can be transplanted with a single cord blood unit. But most adult patients typically require more cells than are contained in a single cord. The FDA has approved the use of an expanded cord blood product.

Myth: *Stored cord blood has a limited "shelf-life."*

Fact: Theoretically, properly frozen and stored cord blood may remain useful for a lifetime. This isn't known for certain, however, because cord blood banking has only existed for the past few decades. Cord blood stored for more than 20 years has been used for successful transplants.

Myth: *If I need stem cells from a public bank, they are free.*

Fact: Public banks incur considerable costs for collecting, processing, storing, selecting, testing and shipping cord blood. Although some of those costs may be subsidized by the government or private funds, most of the cost is typically charged to the transplant facility, the patient or the patient's insurance or health care payment program.

Myth: *Family cord blood banks have few quality standards.*

Fact: Voluntary standards have been developed by AABB. AABB Standards are developed by experts, reflect the latest scientific knowledge, and are designed to ensure that the cord blood is collected safely, and handled in a way that protects the quality, purity and potency of the cells.

Myth: *Private family banking only makes sense if there is a history of blood diseases in the family.*

Fact: For a child born into a family that has no history of blood diseases, the chances of ever needing a privately stored cord blood unit are small, but not zero.

Of the estimated 4 million privately stored cord blood units in the world, more than 400 units have been used for donor transplants. In addition, hundreds more have been used in promising clinical trials in areas such as brain injury, among others.

Myth: *Since I banked cord blood for my first child, I don't need to store cord blood for the second child.*

Fact: If you banked cord blood for your first child, the reasons for banking cord blood for other brothers and sisters are the same. There is about a 25% chance that any two siblings will have identical typing.

Myth: *If I choose to save cord blood for my child at birth, I do not need to also save cord tissue.*

Fact: Every year, new uses for cord blood and cord tissue are proposed or discovered. Recently, the use of mesenchymal stem cells from cord blood tissue has been approved for the treatment of graft vs host disease, a complication of stem cell transplant. Umbilical cord blood, as well as other birthing tissues, hold promise for treating a range of diseases, and you may wish to consider saving both at the same time.

Myth: *Cord blood stem cells when transplanted can cause a malignancy in the recipient.*

Fact: Secondary cancers are rare after transplantation from any stem cell source, including cord blood stem cells. Screening and procedures to prevent secondary cancers are an important part of the long-term follow-up and patient care after all chemotherapy and transplants.

Myth: *A unit of cord blood is a bag of stem cells.*

Fact: While cord blood does contain stem cells, it also contains many types of mature blood cells. Some of these are being investigated for development into clinical products for cellular therapies in the future.

Myth: *If someone in my family needs a cord blood transplant, they can access a matched unit in a public bank only if I donated my baby's cord blood to a public bank.*

Fact: Anyone in need of an unrelated donor for transplantation can access public banks.