JULY
Yelm Family Medicine Patient Newsletter

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In this issue

July is National Cord Blood Awareness Month

What is cord blood?

The cells in cord blood include hematopoietic progenitor cells (HPC) and hematopoietic stem cells (HSC), which are also found in bone marrow and peripheral blood. Compared to other stem cell sources, cord blood is usually considered the safest option. Removing stem cells from the umbilical cord is painless for the mother and completely safe for her child. Collected cord blood can be stored successfully for several decades.

The oldest known cord blood sample is still in perfect condition after 23 years of storage.

Once removed, cord blood can be used as a treatment for dozens of dangerous conditions. Doctors receive a stored cord administer it to a patient in need of stem cells. In current treatments and clinical trials, cord blood cells easily adapt to the host's body and repair damaged tissue. These cells speed up the body's natural healing process and reinforce the immune system.

Because of misinformation and misunderstandings about cord blood, many parents and families have mixed feelings about removing stem cells from an umbilical cord.

How do cord blood transplants work?

Cord blood can be used in treatment for over 80 different diseases, including certain types of cancer. After collection, cord blood is administered to a patient that needs healthy, adaptable stem cells in their system. These cells begin repopulating inside the body, which speeds up the patient's treatment process

and improves their chances of a successful recovery.

Diseases treated with cord blood

Cord blood HSCs have been used in treatment for over 20 years, with over 35,000 transplants completed worldwide. Since the first successful cord blood treatment in 1988, doctors have used umbilical cord cells as a therapy for dozens of different illnesses. Cord blood HSCs now treat over 80 different conditions — in the past 8 years, the list of diseases treated with cord blood has doubled.

Now, almost half of pediatric treatments around the world involve cord blood stem cells.

Cord blood is often given with more traditional types of treatment like chemotherapy. In cancer patients, doctors use heavy amounts of chemotherapy to eliminate diseased cells. Unfortunately, this leaves patients with a dangerously low cell count. A cord blood transplant is then given, which boosts the patient's cell count and provides them with healthy HSCs.

HSCs can be used as a treatment for:

- Blood cancers like leukemia and lymphoma
- Immune system disorders like aplastic anemia
- Metabolic conditions like Hurler syndrome and Krabbe disease

Once the cells are injected into a patient's system, they move through the bloodstream to damaged areas like the brain, heart, or other vital organs. After they arrive, the cells adapt into the type of cell most needed by the body, and begin multiplying. This increases the patient's healthy blood cell count and improves their recovery time.

Stem cell sources

Scientists have found stem cells all over the body, usually in small amounts. The bloodstream, organs, tissues, and virtually any major part of the body may contain stem cells. However, removing stem cells from most organs or tissues is often too painful and doesn't give doctors enough cells for a successful transplant.

While bone marrow is the most popular choice for stem cells, and has been around the longest, doctors typically have 3 sources to choose from:

- Bone marrow
- Bloodstream (also called peripheral blood)
- Umbilical cord (cord blood)

Bone marrow

Bone marrow is the original source of HSCs. Doctors have been removing stem cells from bone marrow for over 40 years, and have used these cells in thousands of successful transplants. The bone marrow process is a surgical procedure done in a hospital, and requires an experienced doctor. The procedure requires several steps, all done while the patient is asleep:

- Doctors use anesthesia to put the patient to sleep, and medical staff move the patient into an operating room
- The team then inserts a syringe into one of the patient's bones, typically a hipbone
- The syringe pulls out bone marrow cells, but also stromal and blood cells and even small bone fragments

The team must also filter out the stem cells, which takes place after surgery. Patients that go through bone marrow donation will have to stay at a hospital and recover for up to 7 days. The average time for a total recovery after bone marrow donation is 20 days, including both hospital time and at-home recuperation.

Bloodstream

Doctors can also remove stem cells from the blood stream, often called a peripheral blood transplant. This is quickly becoming a preferred method of stem cell removal, and doesn't require an invasive surgery or cause the intense pain of a bone marrow removal.

For more information on cord blood stem cell research: https://www.cordbloodbanking.com/cord-blood/