



Family Stem Cell Bank

What are mesenchymal stem cells?

Mesenchymal stem cells have the following characteristics:

- Plasticity, which is the ability to differentiate into different types of tissue
- Ability to expand
- Low immune response. This property is believed to be responsible for the fact that these cells can be used also by non-compatible individuals

The umbilical cord is an important source of mesenchymal stem cells, which cells could potentially substitute respective cells derived from bone marrow.

The possible future clinical applications of mesenchymal stem cells appears to be continuously expanding into various areas of intensive scientific research, such as

- In regenerative medicine and tissue repair, especially of organs, joints, cartilage and neurons
- In plastic surgery for rejuvenation of muscle or fat tissue, i.e. after mastectomy or burn
- In cardiovascular disease, and more specifically, in acute myocardial infarction
- In transplants of hematopoietic cells as additional graft in order to avoid GVHD
- In autoimmune diseases such as Muscular Sclerosis
- In degenerative diseases such as Parkinson's Disease
- As a gene "transport vehicle" with specific targets with an aim to repair genetic anomalies

Important to know ...

The storage of mesenchymal stems does not replace cord blood stem cells. The reasoning is because cord blood stem cells (CD34+) are not found in cord tissue (Wharton's Jelly).

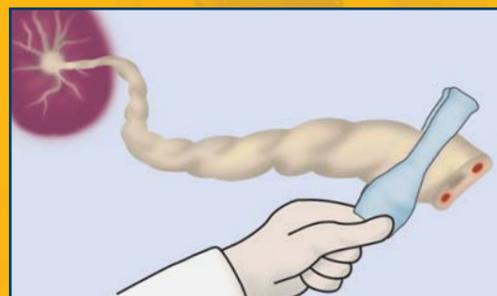
This is an independent opportunity, which, when combined with the storage of cord blood stem cells, allows the maximization of extracting all the present stem cells identified and available in the umbilical cord, and as a result, to have these different types of stem cells stored. These stem cells will be available for future usage, based on scientific know how, in a potentially vast array of diseases and applications.

Instructions for cutting a portion of the umbilical cord

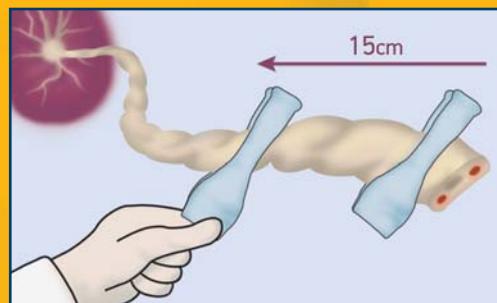
The special temperature-controlled kit contains the following components:

- Sterile container
- Natural saline
- 2 Clips
- "Biohazard" Safety Bag

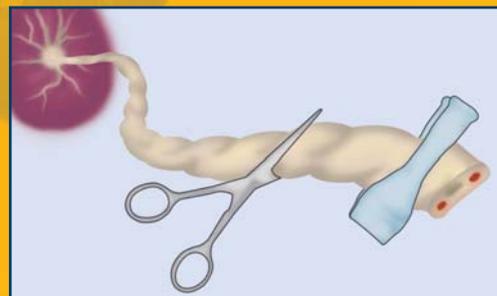
- The procedure for cutting a portion of the umbilical cord begins immediately after the newborn has been disconnected from the mother, and preferably, prior to afterbirth
- Place one clip at the end of the strip of umbilical cord (Picture 1)
- Place second clip at an approximately 15 cm distance from the first clip (Picture 2)
- Sterilize the area of the umbilical cord between the two clips (Picture 3)
- Cut the sterilized portion of the umbilical cord
- Place the cut portion into the sterile container
- Empty the natural saline into the container and close the lid
- Place the sterile container containing the portion of the umbilical cord into the Safety Bag and secure it. Place the Safety Bag into the cylinder jar and then into the thermal outer box. Hand over the kit to the parents



(εικόνα 1)



(εικόνα 2)



(εικόνα 3)

- **In the case that cord blood is also collected, the process of cutting off a portion of umbilical cord comes after the collection of cord blood**
- In the case of multiple pregnancy, process is repeated for each newborn separately
- The same process exists in the case of Caesarean Section



BIOPHYLAXIS HELLAS A.E.

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Technology & Science Park of Attica «LEFKIPPOS»

NCSR Demokritos, Patr.Grigoriou & Neapoleos, Ag.Paraskeui, 15310, Athens,

Tel: +30 210 2520026, fax: +30 210 2520053

e-mail: info@biophylaxis.com, web site: www.biophylaxis.com