

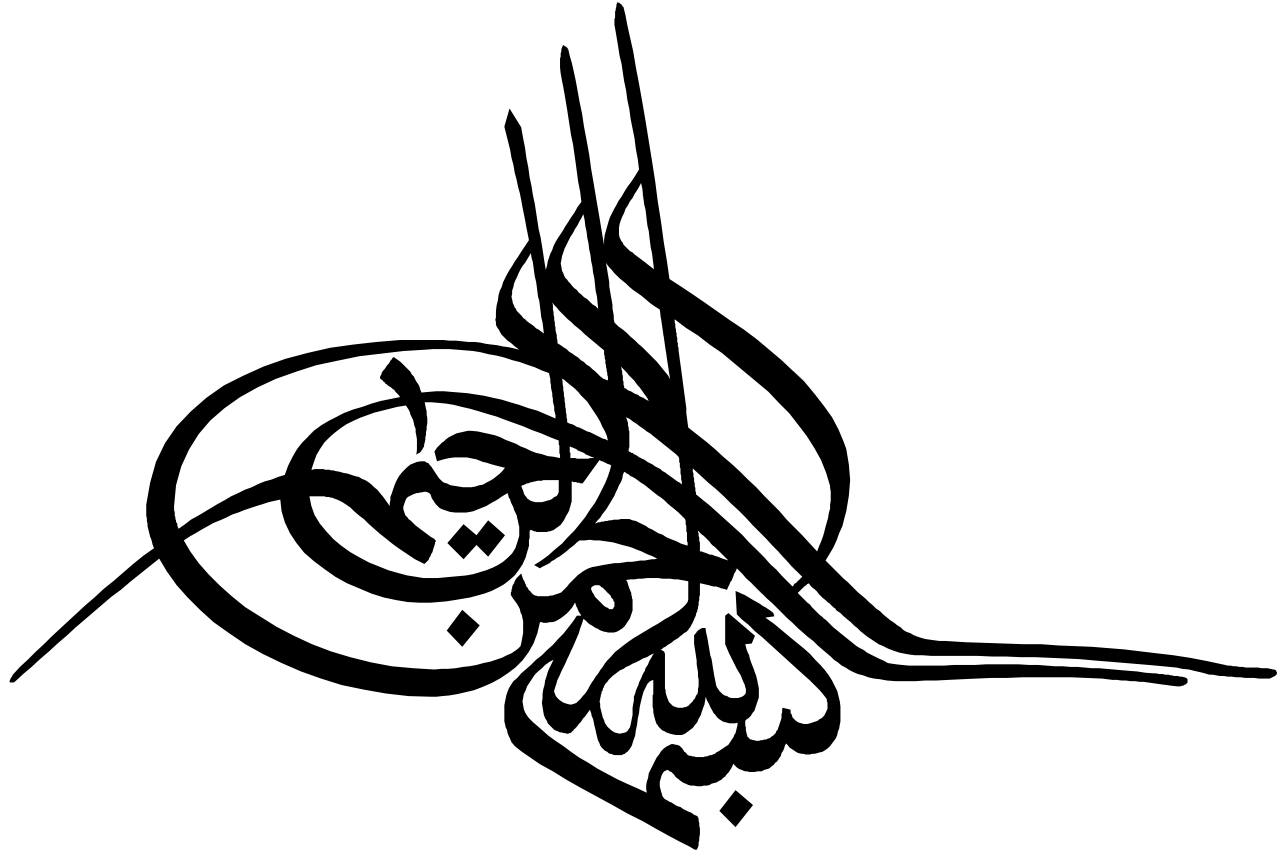
# بانك خون بندناف و اخلاق



*Ethics and Cord blood Banking*



## چهارمین کنگره بین المللی و نهمین کنگره کشوری ارتقاء کیفیت خدمات آزمایشگاهی تشخیص پزشکی ایران



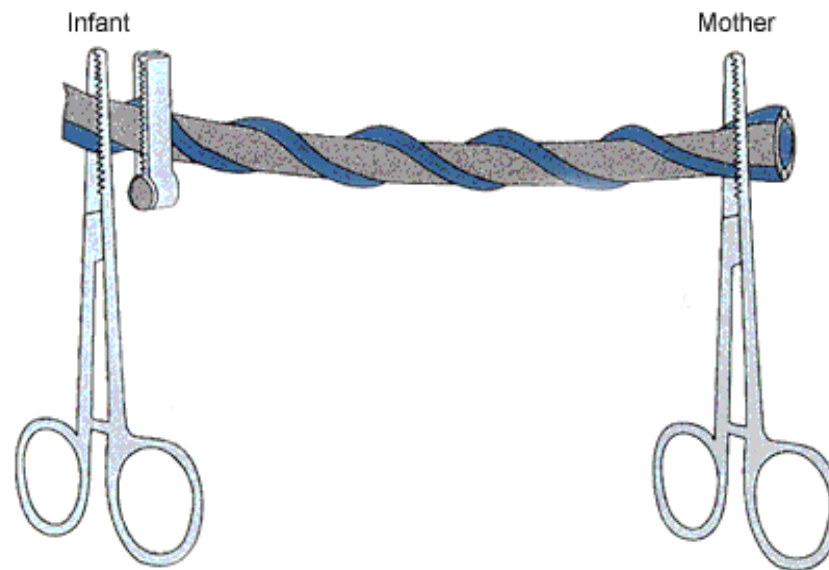
# سلام



اصغر صفري فرد  
كارشناس ارشد خون شناسي و بانك خون  
شرکت مادر تخصصي پالایش و پژوهش خون

*new treatments*

*use of umbilical cord blood*

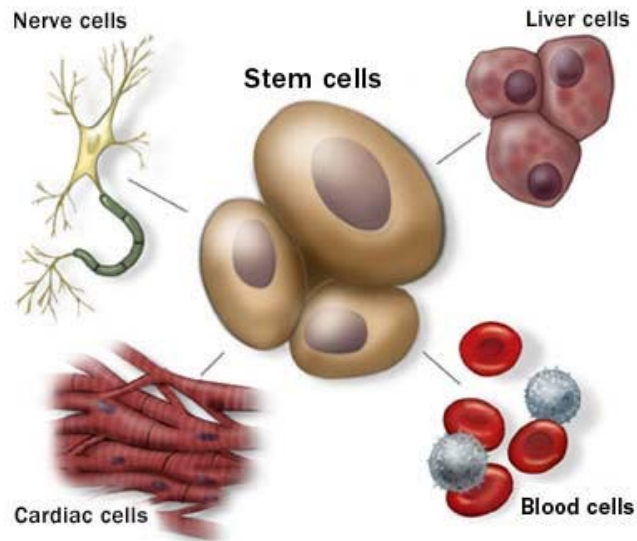


*Umbilical cord blood is rich for stem cells*

# *stem cells*

*unspecialized cells*

*able to replicate repeatedly through cell division*  
*differentiate into cells with specialized functions*



## **Types of Stem Cells**

- Umbilical Cord
- Bone Marrow
- Peripheral Blood
- Amniotic Fluid
- Adipose Tissue
- Embryonic

- *decreased GVHD*
- *tolerance of greater degree of HLA mismatch*
- *large available supply*
- *available on short time*
- *higher proliferative capacity*
- *painless collection*

## *Advantages*

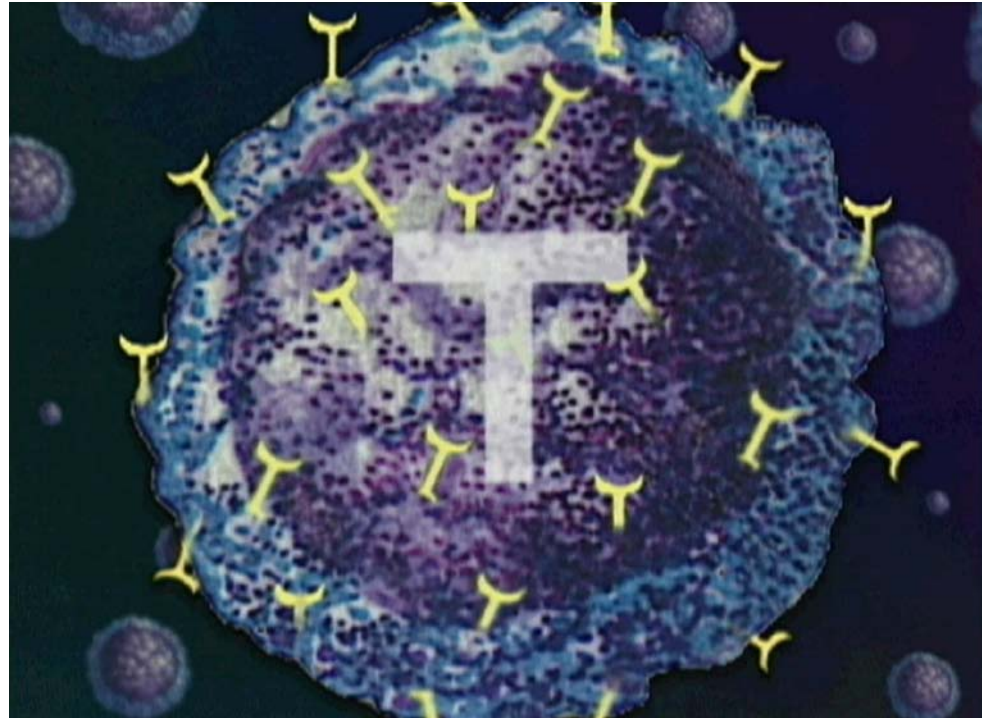


- *longer time to engraftment→increased costs*
- *no additional cells if first transplant does not take*
- *no medical history of donor*
- *small volume makes transplant into adults difficult*

## *Disadvantages*







*Because umbilical cord blood lacks well-developed immune cells, there is less chance that the transplanted cells will attack the recipient's body.*

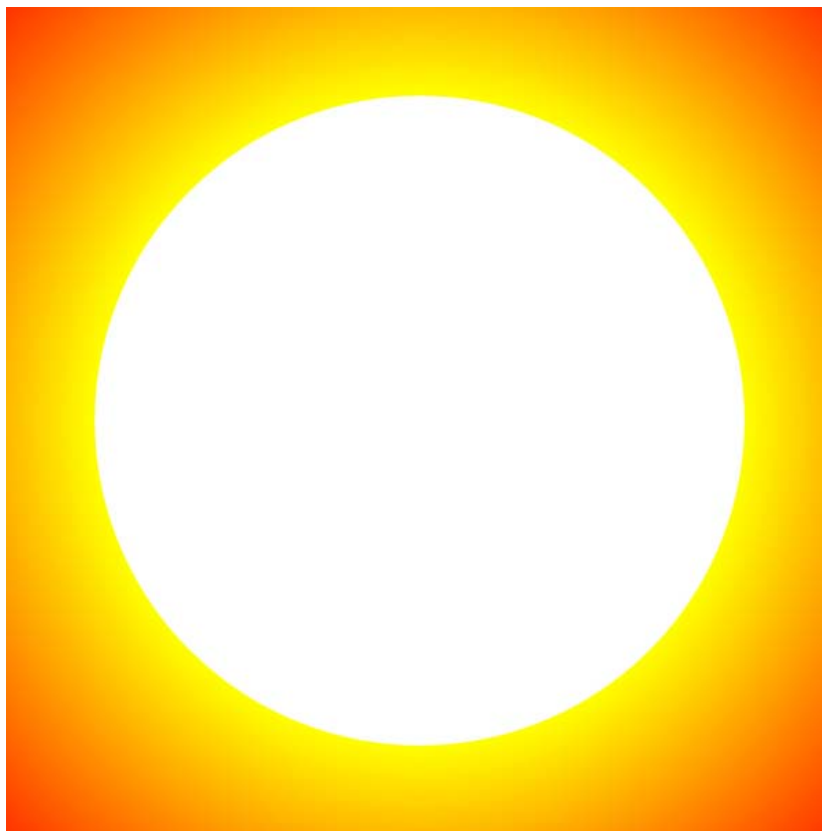
***~~“Graft Versus Host Disease”~~***

# *Treatment*

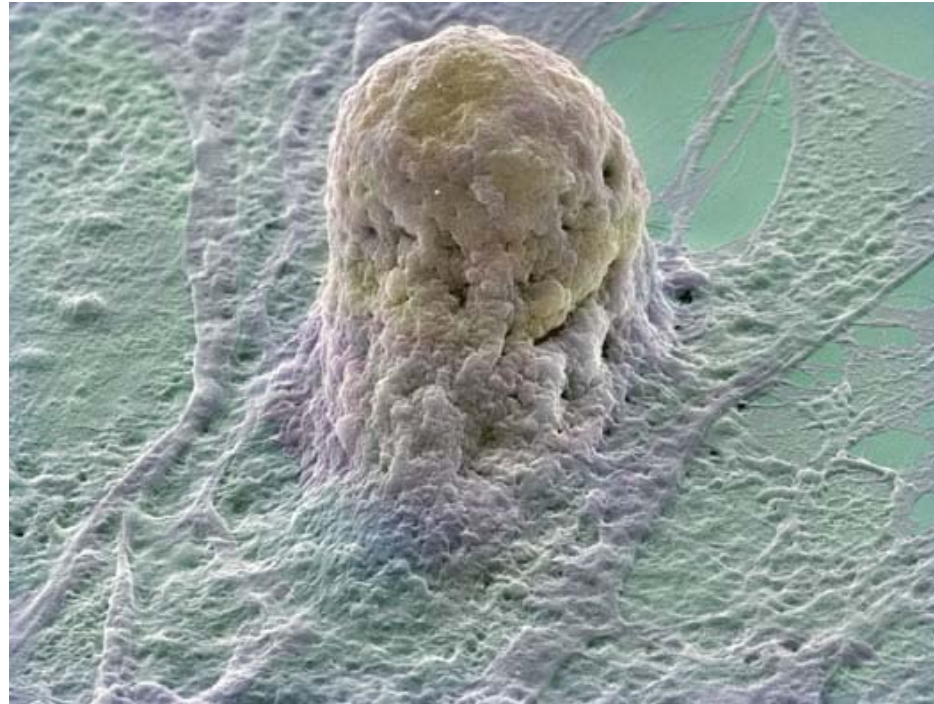
*1988*

*First successful cord  
blood transplant  
for Fanconi's anemia*

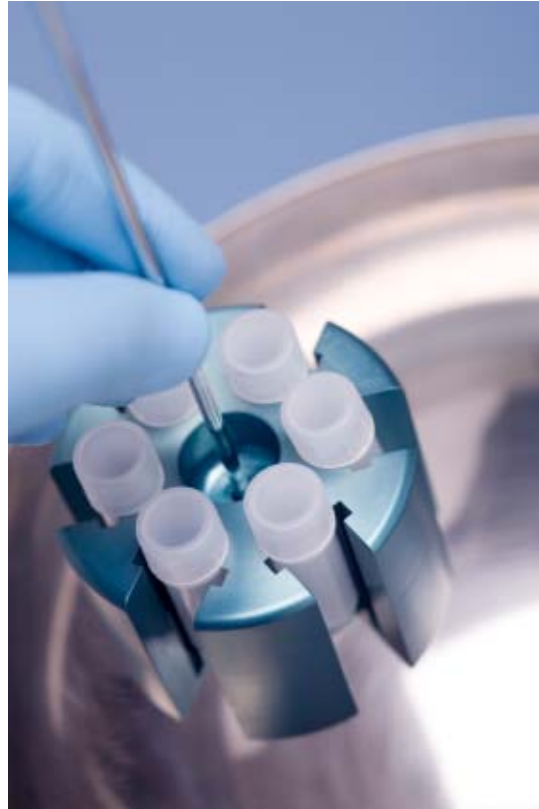




*3/4 of the people who need a bone marrow transplant fail to get one because they cannot find a match to them. With umbilical cord blood banking and storage this, opens new chances for people.*



*leukemia, lymphoma, breast cancer, Hodgkin's disease, aplastic anemia, sickle cell anemia, certain blood diseases, metabolic diseases, and various immune system disorders*



## *research*

*genetic studies, evaluate the effectiveness of new antibiotics, identify new proteins, etc.*

## *Collecting cord blood stem cells*

- *This blood is collected by the physician after the baby is born and the cord is cut.*
- *It takes less than 5 minutes and there is no pain, harm or risk to mother or newborn.*
- *Cord blood is sent to a “Cord Blood Bank” either private or public where it is processed and the stem cells are preserved in liquid nitrogen.*









*Umbilical cord banks first appeared in the world in the 1980s. At present there are around 100 of them worldwide and the majority is publicly owned ( 75 ):*

*40 in US*

*30 in the UK,*

*20 in Asia*

*10 in Australia*

*“2002”*

# *Types of cord blood banks*

## *Public banks*

- Use not restricted*
- No remuneration collected*
- Usage subject to availability*

## *Private banks*

- For use of the family*
- Facility paid for by the family*
- Availability guaranteed*

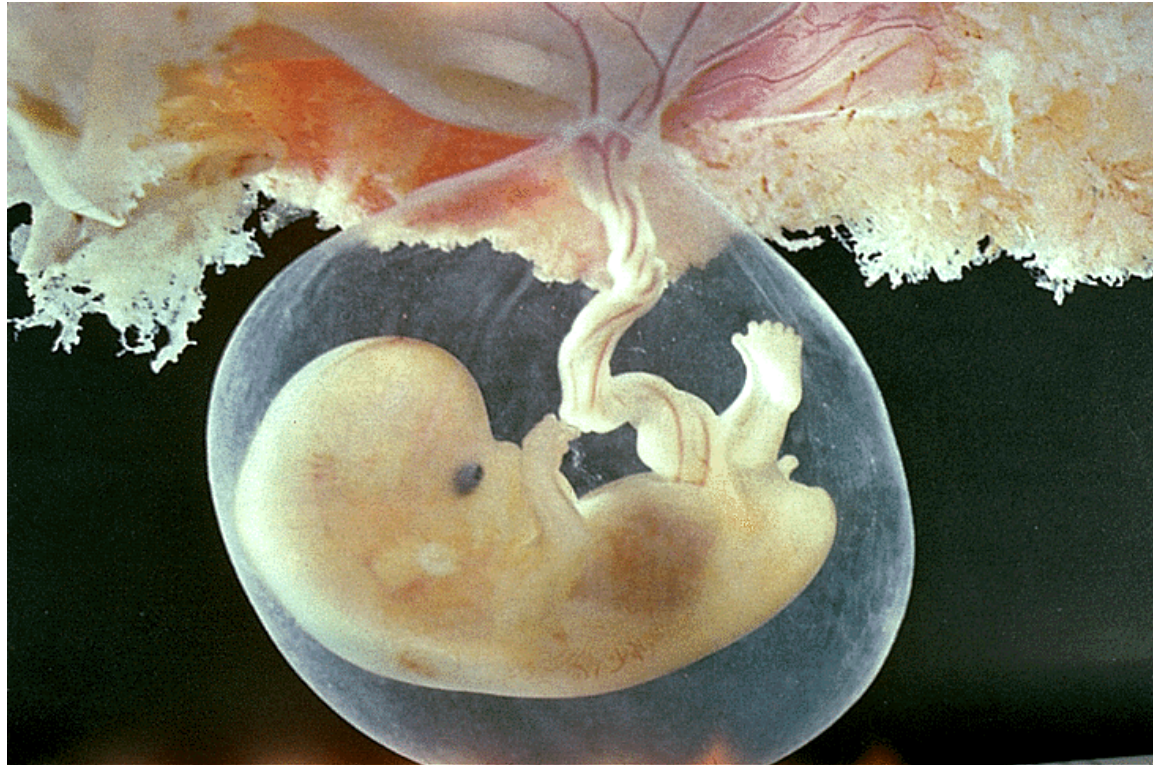
## *private cord blood bank*



*While private banks promote the potential benefits of cord blood banking, **not all of them give realistic information about cord blood use.***



*The ethical obligation to benefit the patient, while exposing him/her to the smallest possible risk, is the **basis** for the use of the umbilical cord blood in specific diseases.*



*Since umbilical cord blood is generally discarded after a baby is born, these stem cells are **free from many of the ethical issues** that embryonic stem cells have.*

## *Public cord blood bank*



*Publicly funded banks, as created by the government, promote the **altruistic** donation; and store umbilical cord tissue in order to use it to benefit any person who may need it.*



*solidarity*

# *free*

*Donation of human tissues*

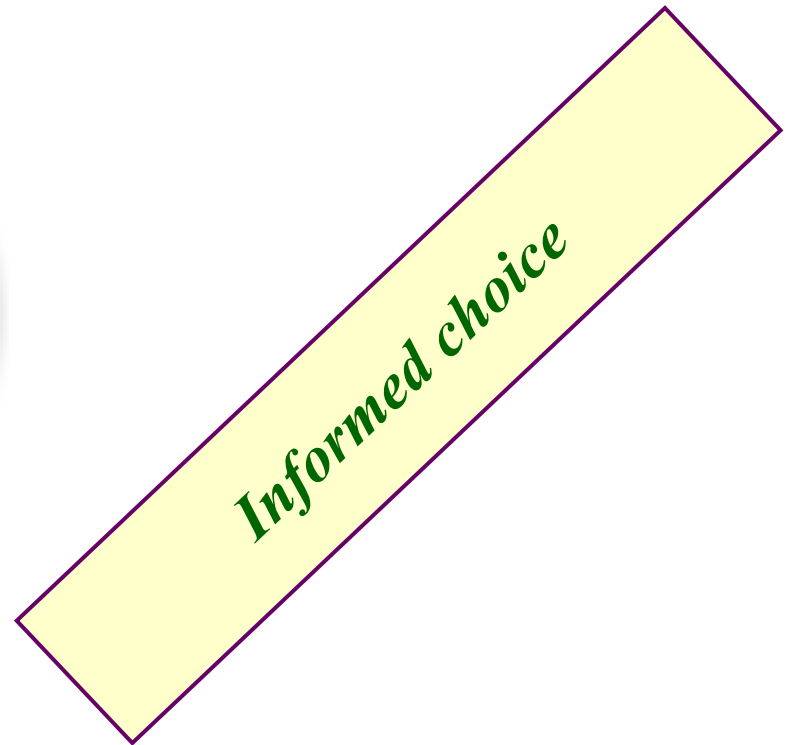
*Voluntary*

*Free*

*Altruistic*

*No remuneration*





## *Autonomy and liberty*

*in making decisions about donation of cord blood*

*The right of persons to choose independently  
"self-governing"*



*voluntary consent is necessary...*



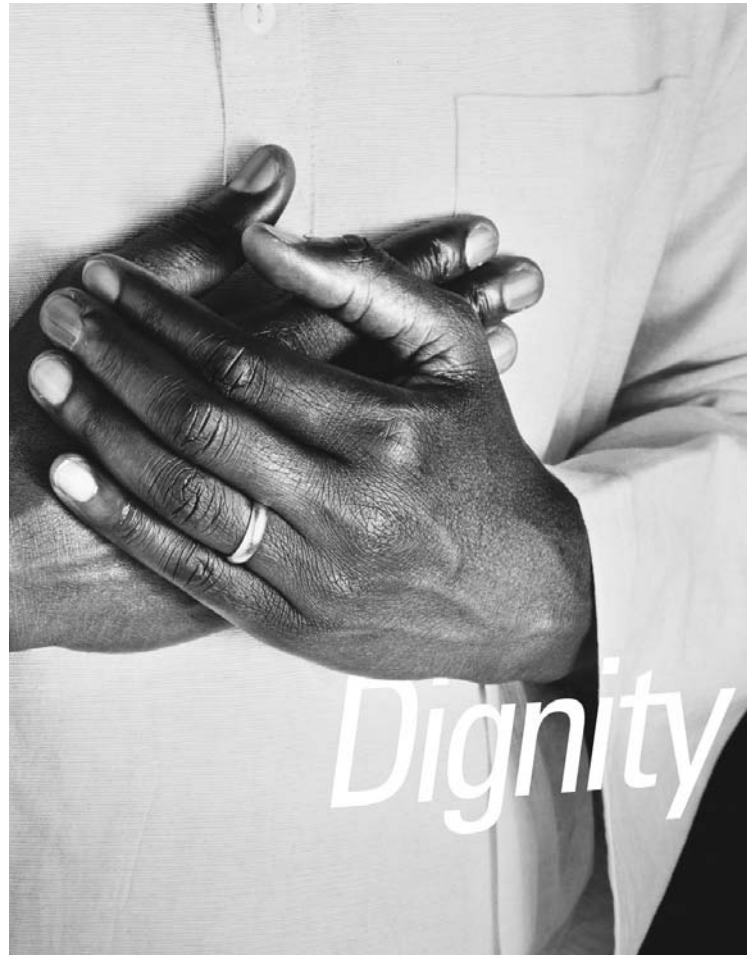
*The process of obtaining informed consent for collection of UCB should begin before labor and delivery.*

*able to decide freely and responsibly*



*Honesty*

*Tell the facts*



## *Dignity*

*non commercialisation of the human body*



## *integrity*

*Donation of cord blood does not harm mother and newborn.  
Avoid of disturbance in the process of delivery.*

# TESTS

*Measure of viability(Flow Cytometry)*

*Typing of blood*

*Anti-HIV*

*HBsAg,*

*CMV*

*Anti HBc*

*Anti HCV*

*Sifilis*

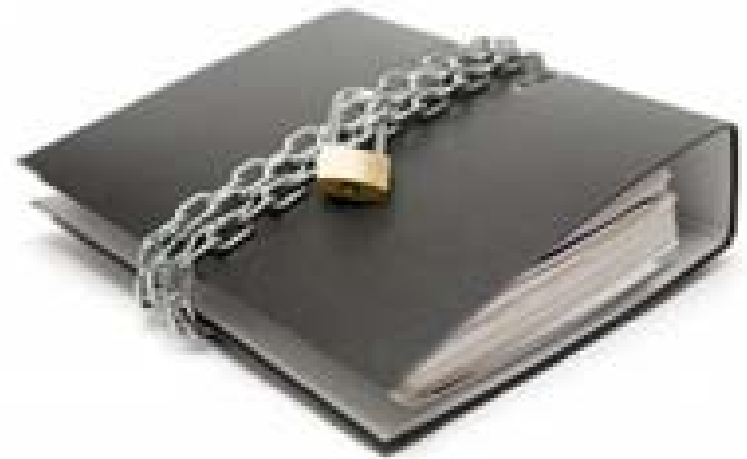
*ALT*

*Counting of blood cells*

*Count of CD34+ Stem cells*

*privacy and confidentiality*

*in the results of tests and donor information*





*Maintaining the quality standards  
“Good Manufacturing Practices-GMP”.*

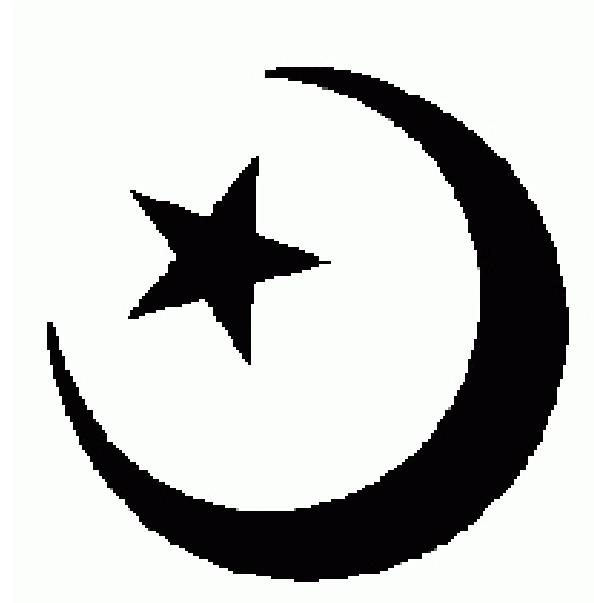


*avoid the exploitation of the more disadvantaged social classes*





*Allow a fair access to transplantation for any ethnic origin*



*Considering to religious beliefs*

*Ethical requirement for research studies by a laboratory or technology company*



*Accurate information should be provided to the population about the advantages and disadvantages of cord blood banks.*



*promotion material: RIGHT*

## *control of advertising*



*Any kind of advertising made by commercial cord blood banks in the media, including on the Internet, must be adequately controlled by public authorities.*



*Use of autologous transplants with ~~cord blood stem cells~~  
to treat genetic diseases of the blood and  
the immune system*

# *~~biological insurance~~*



*The likelihood of a child requiring a transplant with its own cord blood is small.*



*~~“at once in a lifetime opportunity”~~*

*~~“storing your baby’s umbilical cord blood  
could save their life”~~*

*~~“don’t let a precious resource go to waste”~~*





Providing Futures™

*Obstetricians are not ethically obligated to offer private banking, except in the limited circumstance when the patient currently has an affected family member who may benefit from cord blood therapy.*



*Only “good” medicine is “moral” medicine*

يَا مَنْ اَسْمَدَا وَدَكَرَ الشِّفَا.

# سلامی و دیکتیج



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## بانک خون بند ناف و اخلاق

\* اصغر صفری فرد

شرکت مادر تخصصی پالایش و پژوهش خون

### خلاصه مقاله:

پیوند سلول های بنیادین خون ساز، یک درمان پذیرفته شده برای بازیابی توانایی بدن برای تولید سلول های خونی و سیستم ایمنی است. سلول های مورد استفاده در پیوند از سه منبع مغز استخوان، خون محیطی و خون موجود در بند ناف تامین می شوند. بعد از تولد نوزاد، سلول های بینا دین از بند ناف و جفت جمع آوری و برای کاربرد در آینده در مراکز بانک خون بند ناف ذخیره می شود .

در سال 1988 اولین مورد پیوند موفقیت آمیز سلول های بنیادین خون بند ناف در فرانسه بر روی پسری مبتلا به کم خونی فانکونی انجام گردید. یافته های امیدوار کننده ی درمان توسط سلول های بنیادین خون بند ناف، منتهی به ظهور بانک های خون بند ناف همگانی و خصوصی در سرتاسر جهان گردید .

نگهداری خون بند ناف در بانک مرتبط، همراه با یک سری موضوعات اخلاقی می باشد، که مهمترین آن ها شامل: آزادی تصمیم برای اهدای خون بند ناف، رضایت آگاهانه برای جمع آوری، نگهداری و استفاده، اعتماد به بانک خون بند ناف در مورد راز داری و نگهداری محرمانه نتایج آزمایش ها، اجتناب از اختلال در روند زایمان، اجتناب از بروز هرگونه آسیب برای مادر و نوزاد، اجازه دسترسی منصفانه به پیوند خون بند ناف برای هر قومیت نژادی، توجه به اعتقادات مذهبی افراد، حمایت از مراکز همگانی خون بند ناف برای پیوند به تمام نیازمندان ، حفظ استانداردهای کیفی بانک خون بند ناف تجاری مانند سایر مراکز بانک بافت، نظارت بر تبلیغات ارائه شده توسط مراکز خصوصی و الزامات اخلاقی برای مطالعات تحقیقاتی به وسیله آزمایشگاه ها یا شرکت های فن آوری، می باشد .

کلید واژه ها: خون بند ناف، اخلاق



## The bank of umbilical cord blood and ethics

### Abstracts:

The transplantation of blood-forming stem cells is an accepted treatment to restore the body's ability to make blood and immune cells. The cells used in transplant can come from three sources: marrow, peripheral blood and blood in umbilical cord.

Umbilical cord blood (UCB) stem cells are collected from the umbilical cord and placenta after a baby is born. The donated cord blood is screened, frozen and stored at a cord blood bank for future use.

The first successful cord blood stem cell transplant was performed in 1988 in Paris, France. The patient was a boy with Fanconi anemia. Promising discoveries about the lifesaving attributes of umbilical cord blood stem cells have led to the emergence of public and private cord blood banks throughout the world.

Banking umbilical cord blood is associated with a set of ethical issues; Voluntary donation, Autonomy and liberty in making decisions about donation of cord blood, Informed consent for the collection, storage and use, Privacy and Confidentiality in the results of tests, Avoid of disturbance in the process of delivery, Avoid of any risks for mother and child, Allow a fair access to transplantation for any ethnic origin, Considering to religious beliefs, Support for public cord blood banks for allogeneic transplantations, Maintaining the quality standards of the commercial cord blood banks as any other tissue bank, Control of advertising made by commercial

cord blood banks in the media and Ethical requirement for research studies by a laboratory or technology company.

Key words: Umbilical cord blood, Ethics