



SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA

Assieme
a una nuova vita
nasce una
possibilità di cura

DONA IL SANGUE DEL CORDONE OMBELICALE

Every new life
brings new
treatment
possibilities

**DONATE YOUR
UMBILICAL
CORD BLOOD**



**UNA SCELTA
CONSAPEVOLE**



Regione Emilia-Romagna

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Every new life brings new treatment possibilities. This message refers to the importance of donating umbilical cord blood because it contains stem cells that can generate red blood cells, white blood cells and platelets, which are useful in treating blood and immune system disorders. Umbilical cord blood is normally discarded with the placenta after delivery. However, during pregnancy, women can choose to have their child's cord blood collected and used for transplants into patients with blood diseases, particularly children and low-weight adults.

The Regional Health Service guarantees the quality of all procedures related to the donation, storage and distribution of cord blood. After being analysed, blood bags are classified to determine their compatibility with transplant recipients and stored in a "regional cord blood bank", based at the S. Orsola-Malpighi hospital in Bologna, which subsequently deals with their distribution according to specific clinical and organisational protocols.

Donation poses no health risk to either the mother or the baby. This publication aims to provide expectant mothers the necessary information to make a conscious choice, knowing that, with their voluntary, generous gesture, they can offer a treatment option to people in need of a cell transplant.

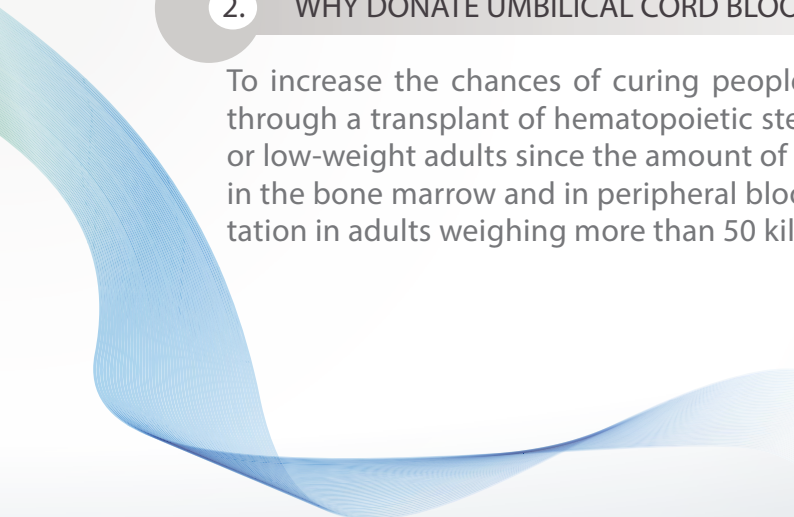
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1. WHAT IS UMBILICAL CORD BLOOD?

Cord blood is the blood that remains in the umbilical cord and placenta after cutting the umbilical cord at birth. Cord blood, which is normally discarded with the placenta, is the third largest source of hematopoietic stem cells after bone marrow and peripheral blood (blood circulating in the blood vessels). These cells produce red blood cells, white blood cells and platelets, which are useful in the treatment of blood and immune system disorders.

2. WHY DONATE UMBILICAL CORD BLOOD?




To increase the chances of curing people suffering from diseases that can be treated only through a transplant of hematopoietic stem cells. Cord blood is mainly used to treat children or low-weight adults since the amount of stem cells it contains is much lower than that found in the bone marrow and in peripheral blood, therefore it is not always sufficient for transplantation in adults weighing more than 50 kilograms.



3. WHAT DISEASES CAN BE TREATED WITH IT?

Cord blood cell transplantation can cure blood cancer such as leukemia and lymphoma (cancer of the lymphatic system) and non-cancerous diseases such as thalassemia (inherited blood disorder), bone marrow aplasia (decreased blood cell production), and congenital immunodeficiencies (immune system malfunctions causing increased susceptibility to infections). Cord blood cells are used to treat patients undergoing high-dose chemotherapy or radiation therapy. However, there is no proven scientific evidence that cord blood can be used for the treatment of chronic degenerative diseases such as diabetes, Alzheimer's disease, amyotrophic lateral sclerosis.





4. WHO CAN DONATE UMBILICAL CORD BLOOD?

All women who are found to be eligible for donation during pregnancy according to their health status. The Italian Ministry of Health has indicated some contraindications to donation which may arise at the time of delivery, risking to make cord blood unsuitable for collection: children born before the 35th week of pregnancy, maternal fever at birth, congenital malformations in the newborn, rupture of membranes more than 12 hours before delivery.

5. DOES COLLECTING CORD BLOOD POSE ANY RISKS?

No, donating poses no risks to either the mother or the baby. Cord blood is removed only after cutting the umbilical cord. Donation is not painful and donating cord blood has never been reported to cause health problems to the mother or the newborn. Cord blood collection does not take any blood away from the child: if no cord blood is donated, it will be discarded immediately after cutting the umbilical cord.



6. HOW CAN I BECOME A CORD BLOOD DONOR?

Women who wish to donate umbilical cord blood can contact the department of obstetrics and gynecology of the hospital where they will give birth and notify them that they would like to donate. Donation is anonymous and free. New mothers can, however, reconsider their decision even at the time of delivery. The process involves an interview between the expectant mother and a doctor, to ensure that the mother is in good health and that all the conditions required for donating are met. At the time of delivery, a sample of the mother's blood will be taken and tested for infectious diseases as required by law. Between 6 and 12 months after delivery, the mother and the baby will undergo additional checks to confirm that the blood taken is suitable. In particular, the child will have a pediatric visit to rule out the presence of inherited diseases, while the mother will repeat the same blood tests performed at the time of delivery.

7. WHERE CAN I DONATE UMBILICAL CORD BLOOD IN EMILIA-ROMAGNA?

Cord blood donation requires the presence of specially trained personnel in the delivery room and the possibility of sending the collected blood to the nearest cord blood bank within 36 hours of delivery. In Emilia-Romagna, all obstetrics and gynecology departments of public hospitals which perform at least 500 deliveries per year are allowed to collect cord blood 24/7 all the year round. The collected blood bags are sent to the “regional cord blood bank”, based at the Transfusion Centre of the S. Orsola-Malpighi Hospital in Bologna.

8. HOW DOES CORD BLOOD COLLECTION WORK?

Cord blood can be donated either after natural birth or a cesarean delivery. Cord blood is collected by competent personnel after cutting the umbilical cord. Cord blood is collected using a special system that ensures maximum sterility, and is then stored in sterile disposable bags.

A barcode label is applied to each of these bags to ensure traceability.

This collection system allows to obtain an amount of blood between 50 and 150 ml for each donation. If the amount collected is less than 50 ml, the donation may not be used for transplantation.



9. WHAT HAPPENS TO DONATED BLOOD?

Within 36 hours of collection, cord blood is sent to the regional Health Service centre responsible for analysing, storing and distributing cord blood bags: the regional cord blood bank, based at the Transfusion Centre of the S. Orsola-Malpighi Hospital in Bologna. This is where blood is “typed”, ie analysed to study its genetic characteristics. The HLA (Human Leukocyte Antigens) is the classification system used to determine whether the donated blood is compatible with the recipient's. The cells contained in the bag are then counted. On average, about 60% of the blood bags collected are discarded because they do not contain a sufficient number of stem cells to perform a transplant. In these cases, donors are informed in writing that the donated blood has been discarded. When a blood bag is determined to be suitable for transplant, it is frozen and stored in liquid nitrogen for up to 20 years. The cord blood bank stores the genetic data of donated blood and sends them to the Italian national registry of bone marrow donors (IBMDR- Registro italiano donatori di midollo osseo) and the international registry (WMDA - World Marrow Donor Association). At the request of any transplant centre treating a patient in need, these large electronic databases can be used to perform a global search and find any blood units which are compatible with the patient in question and therefore eligible for transplantation.



10.

WHO CAN RECEIVE UMBILICAL CORD BLOOD?

In Italy, cord blood donation is the most widespread and well-established form of donation for unrelated allogeneic transplants. Umbilical cord blood is collected and subsequently certified by the receiving bank, where it remains available to any patient who might need it for transplantation. Another possible type of cord blood donation is that for related allogeneic transplant, in which cord blood is donated for treating a blood relative of the newborn (brother, sister ...). Finally, cord blood can be stored for autologous use, i.e. for potential future use by the donor child, but this form of donation is banned in Italy.

11. WHY IS AUTOLOGOUS CORD BLOOD STORAGE BANNED IN ITALY?

Because neither scientific knowledge nor clinical practice have yet demonstrated its real usefulness. For best results in the treatment of blood disorders (such as leukemia), it is in fact preferable to use cells from a donor other than the patients themselves, because this would increase the immunological effect of the transplanted cells and thus the chances of a successful transplant. It was also demonstrated that the typical genetic alterations of certain subtypes of childhood leukemia were already present in the umbilical cord of children who later developed the disease: in this case, autologous transplantation would be completely useless. At present, the available data does not justify autologous cord blood storage. In addition, it further reduces the chances of finding compatible blood units for treating sick patients: only by increasing the number of donations we can increase the chances of finding suitable cord blood units for transplantation. Autologous cord blood storage can be only performed at private banks that work for commercial purposes, suggesting scientifically unproven therapeutic indications. To obtain permission for autologous cord blood storage, the parents must submit a request to the Health Department of the public hospital where the child will be delivered, have a telephone counseling interview with the reference transplant centre for Emilia-Romagna (or in person, in case of a planned delivery at the Sant'Orsola Hospital, Bologna) and bear the costs of collection, transportation and storage, in addition to the relevant regional fee for the medical service performed.

12. IS AUTOLOGOUS STORAGE USEFUL FOR PREVENTION?

No, autologous cord blood storage, i.e. for exclusive use by the donor child, is in no way a preventive practice for the treatment of any of the blood or immune system disorders mentioned above (leukemia and lymphoma, thalassemia, bone marrow aplasia and congenital immunodeficiencies). Although scientific research is constantly progressing, there is no evidence supporting the clinical use of autologous cord blood for the treatment of blood or immune system disorders in the coming decades. Even in the field of regenerative medicine, the stem cells used by researchers, which are necessary for the regeneration of various tissues and organs, are the same found in the adult individual.

13. WHO CAN I CONTACT FOR MORE INFORMATION?

Your gynecologist, healthcare professionals in the departments of obstetrics, operators of the transfusion service of the hospital where the donation is made and operators of the “regional cord blood bank” may provide more information about umbilical cord blood donation. For more detailed clinical information, you may consult hematologists and pediatricians experienced in hematopoietic stem cell transplantation.

For more information:

Regional cord blood bank (Banca regionale del sangue cordonale)
S. Orsola – Malpighi University Hospital of Bologna
via Massarenti 9, 40138 Bologna tel. 051 / 6363011 - email: ercb@aosp.bo.it

Reference transplant centre for Emilia-Romagna
(Centro riferimento trapianti dell'Emilia-Romagna)
tel. 051 / 6363665 - email: airt-crter@aosp.bo.it
www.saluter.it/trapianti

ADISCO Associazione donatrici italiane sangue di cordone ombelicale
Italian cord blood donor association
tel. 347 / 1525715 e 340 / 4962260
www.adiscobologna.com

ADMO Associazione donatori di midollo osseo
Italian bone marrow donor association
Modena tel. 059 / 4224413 - 4222684
www.admoemiliaromagna.it

Nuova Vita onlus
via P. Giordani 9, 29121 Piacenza tel. 348 / 8261620

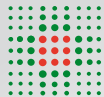
IBMDR Italian Bone Marrow Donor Registry
Genova, Ospedale Galliera tel. 010 / 5634434
www.ibmdr.galliera.it

Toll-free number of the Regional Health Service **800 033 033**
(every working day from 8:30 am to 5:30 pm, Saturdays from 8:30am to 1:30pm)



Hospitals where you can donate cord blood in Emilia-Romagna

- **Policlinico S. Orsola-Malpighi, Bologna**
v. Massarenti, 13
051-6364361
- **Ospedale Maggiore, Bologna**
Largo Nigrisoli, 2
051-3172463
- **Ospedale di Bentivoglio (BO)**
v. Marconi, 35
051-6644253
- **Ospedale S. Maria della Scaletta, Imola (BO)**
v. Montericco, 4
0542-662646
- **Ospedale di Porretta terme (BO)**
v. Roma, 16
0534-20754
- **Arcispedale S. Anna, Cona (FE)**
v. Aldo Moro 8
0532-236553
- **Ospedale del Delta (FE)**
v. Valle Oppio, 2 - Lagosanto
0533-723377
- **Ospedale di Cento (FE)**
v. Vicini, 2
051-6838258
- **Ospedale Maggiore, Parma**
v. Gramsci, 14
0521-702438
- **Ospedale di Fidenza (PR)**
v. Borghesi, 1
0524-515324
- **Ospedale Borgo Val di Taro (PR)**
v. Benefattori, 12
0525-970237
- **Policlinico, Modena**
v. del Pozzo, 71
059-4222630
- **Ospedale di Carpi (MO)**
v. S. Giacomo, 2
059-659743
- **Ospedale di Sassuolo (MO)**
v. Ruini, 2
0536-863355
- **Ospedale di Mirandola (MO)**
v. Fogazzaro, 1
0535-602247
- **Ospedale di Pavullo (MO)**
v. Suore S.G.B. Cottolengo, 5
0536-29211
- **Ospedale di Ravenna**
v. Randi, 5
0544-285431
- **Ospedale Umberto I, Lugo (RA)**
v. Massi, 4
0545-214408
- **Ospedale di Faenza (RA)**
v. Stradone, 9
0546-601128
- **Ospedale di Piacenza**
v. Taverna, 49
0523-303082
- **Ospedale di Fiorenzuola (PC)**
v. Roma
0523-989656
- **Arcispedale S. Maria Nuova, Reggio Emilia**
v. Risorgimento, 80
0522-296355
- **Ospedale di Castelnuovo Monti (RE)**
v. Roma, 2
0522-617162
- **Ospedale di Montecchio Emilia (RE)**
v. Barilla, 16
0522-860355
- **Ospedale di Scandiano (RE)**
v. Martiri della Libertà, 8
0522-850312
- **Ospedale di Guastalla (RE)**
v. Donatori di Sangue, 1
0522-837230
- **Ospedale di Forlì**
v. Forlanini, 34
0543-731770
- **Ospedale di Cesena**
v. Ghiotti, 286
0547-352806
- **Ospedale di Rimini**
v. Settembrini, 2
0541-705211



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Maggio 2013

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