

## **Australian helping their community**

*AusCord is the Australian national network of umbilical cord blood banks and cord blood collection centres. AusCord aims to provide greater opportunities to patients who need a life-saving procedure through cord blood transplantation.*

## **What is cord blood?**

The umbilical cord is the lifeline between the mother and the baby during pregnancy. It could also provide a lifeline to a child with leukaemia or other life-threatening disease. Cord blood is the blood left behind in the placenta and umbilical cord and is usually discarded after childbirth. Now the cord blood can be donated to AusCord and save someone's life.

## **Why is it useful?**

Research has shown that cord blood is rich in blood-forming stem cells known as haemopoietic stem cells. These stem cells, when transplanted into a patient, can 'rescue' the patient by producing all the different types of blood cells after the patient's own blood cells have been destroyed by chemotherapy and/or irradiation.

Because cord blood is from a newborn baby with an immature immune system, the stem cells may be more innocent than 'educated' stem cells from adult bone marrow donors. Transplantation of this blood produces far less immunological complications than transplantation of adult bone marrow. This means that the matching between donor and recipient is less critical which makes it easier to find suitable cord blood donors.

Because it is more likely to find a matched donor within one's own ethnic group, the usefulness of a

cord blood bank also depends on having cord blood stored from a representative mix of all ethnicities that make up the Australian community.

## **How is the cord blood collected?**

Cord blood can be collected from an umbilical cord and placenta at no risk to either the mother or baby. The cord blood is tested for infectious diseases and then stored frozen in liquid nitrogen for future use. After a period of six months, the mother will be contacted for a further blood test for infectious diseases and to check on the health of the baby. Once this test is clear, the cord blood is available for matching by patients in need of a transplant.

## **Can cord blood be donated at any hospital?**

Only those hospitals accredited with the cord blood banks are able to collect cord blood. Collection, processing and storage of cord blood are specialised techniques that need to be performed by trained and accredited staff. The cord blood collected also needs to be processed as soon as practicable, usually within 48 hours of collection.

## **Can the cord blood be specifically directed to an individual?**

No – with a donation to one of AusCord's public cord blood banks, the cord blood is donated to a patient who is the most suitable recipient based on tissue matching and clinical need at the time. Freely donating your cord blood to an anonymous patient is a wonderful gesture. The cord blood is priceless because it may be the only source of stem cells that is available for life-saving treatment for a child or an adult with a potentially fatal illness. By re-using the baby's cord blood, life can begin again!

### **What if the cord blood has been donated previously and a family member needs a transplant?**

Once the cord blood has been donated, it is donated for anyone who is in need of a cord blood transplant. However the family member can still search the Australian Bone Marrow Donor Registry (ABMDR) which stores all the tissue typing matching information on a database. If the cord blood is still available, the search will identify the donation or may even identify an equally or more suitable donation. It is estimated that in ten years time, the chance that the cord blood will still be in the bank is around 85%. If it is still there and there is a clinical need for the family member to use it, it will be available.

### **Can the cord blood be stored specifically for the child or another family member?**

There are organisations around the world that are now charging a fee to provide this private service. They are commercial banks actively promoting private storage 'as an insurance' against future disease. It is the opinion of the public cord blood banks that there may not be a role for this method of storage as the cord blood is unlikely to be used for transplantation for leukaemias, cancer and bone marrow failure. The stored cord blood cannot be used to treat genetic disease, as the cord blood would also be affected.

The most common reason for transplantation in childhood is for leukaemia. Even if the donor developed leukaemia and required a transplant would their cord blood be used to treat themselves? The answer is 'no'. The least successful form of transplant is from the patient's own cord blood or bone marrow. If the leukaemia develops in early childhood, the cord blood may well contain the propensity to develop leukaemia. The most appropriate source of stem cells

is from another person whether it is another family member or an anonymous stem cell donor. The chance of finding a match within your family is about 30%; the chance of finding a suitable unrelated cord blood donor is over 80%.

### **If the child's cord blood has been banked privately, can it be donated to the public banks if there is no longer a wish to pay for it to be kept in a private storage facility?**

No. There is no guarantee that the cord blood unit has been collected, processed and stored according to the statutory regulatory requirements and standards of AusCord.

### **Are there any costs charged for donating cord blood to one of the AusCord cord blood banks?**

No. There are no costs charged to the parents who consent to the donation of their baby's cord blood or the Australian patient who receives this life saving treatment. The network is funded by the Government.

### **What about using the cord blood stem cells for other uses such as heart muscle or nerve cells?**

These are early days and this research is being performed in experimental models. It has a long way to go before application in humans but it does offer potential.

### **Why does Australia need a national network of cord blood banks?**

Australia needs a cord blood supply that reflects the genetic make up of its population which would ensure a greater degree of compatibility and there is a need for this life saving service.

### Where can cord blood be donated?

For information on which hospitals are associated with the cord blood banks please contact the cord blood bank in your state, listed overleaf. For further information on the Australian national network of umbilical cord blood banks and hospitals that participate as cord blood collection centres, please contact:

AusCord is funded by the Commonwealth, State and Territory Governments. The cord blood banks also receive substantial financial support from individuals, community groups and charitable agencies - in particular:

- ◆ Ronald McDonald House Charities
- ◆ The Bone Marrow Donor Institute
- ◆ Australian Cord Blood Foundation
- ◆ Mater Hospitals' Trust
- ◆ Rotary Australia
- ◆ Lions Clubs of Australia
- ◆ The Leukaemia Foundation