

Stem cell harvesting – information for parents

This leaflet is for parents considering stem cell harvesting and storage. It explains what is involved and the Royal Berkshire NHS Foundation Trust position with regards to this procedure.

What is stem cell harvesting?

Technology has been available since 1996 in the UK for haemopoietic (stem) cells to be collected and stored from the blood in the umbilical cord (the cord that attached the baby to the placenta). Stem cells are cells from which other types of cells can develop and they are being used to investigate new possible treatments for a number of genetic conditions. The procedure involves removing blood from the umbilical cord after it has been cut from the baby. At least 80-100ml (about 1/3 of volume in a canned drink) is needed for later transplantation into children; more is needed for an adult.

Why harvest cells?

Occasionally, in a family where a child is suffering from leukaemia or some rare auto-immune diseases, the paediatrician (doctor specialising in the care of children) looking after the sick child may ask for stem cells to be collected from the cord of the newborn brother or sister. These cells are then tested for a 'match' to the sick child, and can be given if the match is close enough in order to possibly benefit the sick child's treatment.

Where this being is carried out and who benefits?

The National Blood Transfusion Service has a scheme where families can donate these stem cells for banking and later transplant into patients (not family members) who need this treatment. This is similar to bone marrow donations for patients with some cancers or leukaemia. This '*altruistic banking*' is only available in a few hospitals - Northwick Park Hospital in Harrow, Barnet General Hospital, Newcastle Royal Infirmary and the Mater Infirmorum Hospital in Belfast. The Royal Berkshire Foundation Trust is not involved in any way in altruistic cord sample banking.

The National Blood Transfusion Service cannot bank blood from new-born babies for their or their family's later use. This service is only available from some private commercial companies, see paragraph entitled '*What other options are available*' below.

What other options are available?

There are a number of commercial companies who offer banking for individual families, many of these can be found by using internet search engines.

How effective is stem cell storage?

These companies often suggest that the stem cells have enormous *potential* for curing serious and/or life-threatening diseases.

What is the evidence?

The key word here is 'potential' as for many of these conditions, either:

1. there already exists an effective treatment, such as bone marrow transplants
2. there is no current research to suggest that stem cells might be an effective treatment option; or
3. Transplant of stem cells banked at birth is to say the least, unwise, as in some leukaemic conditions the gene predisposing (having a tendency) to the illness is present in stem cells.

How is the blood collected if organised privately?

Staff employed by the Royal Berkshire Hospital will not take samples for parents who wish to 'bank' stem cells for the future as to do so require an institutional licence from the Human Tissue Authority, and for all practitioners to have completed highly specific training. Parents must not ask staff to 'help them' as if they do so they will be in breach of their employment contract and will be disciplined.

The blood has to be collected using a special kit supplied by the company, by a representative from the company, and is then delivered there for storage. Companies who offer storage facilities may offer a training session for partners (although the Trust does not permit partners to perform the collection of cord blood); Storage of the stem cells costs around £1200 for a twenty year term.

Professional opinion

The Royal College of Midwives, American and European professional bodies for doctors and midwives and the Royal Berkshire NHS Foundation Trust do not support or recommend commercial stem cell banking. The Royal College of Obstetricians and Gynaecologists issued a document about stem cell banking during 2001, which was updated in 2006. The opinion is that there is little scientific evidence to recommend to families that banking stem cells for possible future use is valuable. The conditions that can be treated using stem cell technology are rare, and it is uncertain whether these cells would work for other conditions. In the USA, one commercial company has only released two stem cell donations for treatment, from a bank of 10,000.

Further information

Visit the Royal College of Obstetricians and Gynaecologists website

<https://www.rcog.org.uk/en/guidelines-research-services/guidelines/sip2/>

Visit the Royal college of Midwives website

<https://www.rcm.org.uk/sites/default/files/Joint%20Statement%20-%20UCB%20-%20aug%2011%20%286%29%20v2.pdf>

For information about the hospital and the Maternity Unit, visit the Trust website at www.royalberkshire.nhs.uk

This document can be made available in other languages and formats upon request.

Authors: Jane Siddall, FRCOG (Consultant Obstetrician) & Victoria Marsden (Specialist Registrar)

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