Why store your child's stem cells?

smartCells *Stem cells for life*

We believe that storing your child's stem cells at birth can be a crucial part of curing an unexpected illness. We believe that in the future this service should be available to every parent, child and family. We are a company that is for life.

As a society we've always dreamt of a healthy, disease-free world.

One of the bravest moves in that direction has come from stem cell research and therapy. Stem cell therapy is currently being used to successfully treat more than 80 diseases, but we think there's still a long way to go.

Smart Cells is the first private UK stem cell storage company to have released stored stem cell units for use in the treatment of children with life-threatening illnesses. We have released the greatest number of samples for use in successful transplants in the UK.

We believe with the development of technology in the future we will be able to treat even more illnesses, and we're working on it.

We believe our customers deserve the best service available and we staff our state of the art facility with the top professionals in the field.

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What are stem cells?

Stem cells are biological cells found in the body. They serve as a repair system for other body cells and the immune system by multiplying and transforming into blood, bone, tissue and organ cells, when they are required to. At Smart Cells we store stem cells found in the umbilical cord.

What are cord blood stem cells used for?

A cord blood stem cell transplant uses blood stem cells to replace diseased cells with healthy new cells, and rebuild an individual's blood and immune system. More recently, cord blood stem cells have been shown to be able to form other tissues in the body such as nerves, bone cells and hormone producing cells. This means that cord blood also has a major role to play in the field of regenerative medicine.

There is a huge potential here in the treatment of conditions such as traumatic nerve damage, degenerative bone disease and Diabetes. Research has revealed positive results in a variety of medical conditions, including ischemic heart disease, Alzheimer's disease, Parkinson's disease, Huntington's disease and Multiple Sclerosis.

Why store my baby's cord blood stem cells?

Storing your baby's stem cells at the time of birth is a once in a lifetime opportunity to protect your family against serious illness or disease.

In the past the main source of stem cells came from bone marrow. Today however, we've found through intensive research that the richest source of stem cells actually comes from the umbilical cord.

The first stem cell transplant using stem cells found in the umbilical cord blood was in 1988. The patient was a little boy suffering from a serious blood disorder called Fanconi's Anaemia, and the cord blood was obtained from his new born sister.

Fighting disease and illness

Since then over 30,000 successful transplants have taken place around the world and have been used in the treatment of:

Immune Disorders

Chronic Granulomatous Disease,
Hystiocytic Disorders;
Leukocyte Adhesion Deficiency,
Severe Combined Immunodeficiency Diseases, Wiskott- Aldrich Syndrome.

Cancer

Acute Leukaemia,
Chronic Leukaemia,
High-Risk Solid Tumors,
Hodgkin & Non- Hodgkin Lymphoma,
Myelodysplastic Syndromes.

Blood Disorders

Aplastic Anaemia, Beta Thalassemia,
Diamond-Blackfan Anaemia,
Fanconi's Anaemia, Sickle Cell Disease.

Neurological Disorders

Traumatic Brain Injury, Autism,
Cerebral Palsy.

Metabolic Disorders

Krabbe Disease, Hurler Syndrome,
Metachromatic Leukodystrophy,
Sanfilippo Syndrome.

Cord tissue, another source of stem cells.

The future of cord tissue stem cell based therapy in accordance with current scientific opinion is promising. Smart Cells firmly believes that storing umbilical cord tissue as well as the cord blood is the safest and most reliable way to store your child's stem cells.

Cord tissue stem cells have been studied extensively for their ability to form bone, cartilage, nerve, tendon and skin cells. The potential therapeutic value they offer for treatment in a wide range of diseases is increasing all the time.

Reports by leading scientists have shown that the Wharton's Jelly of the umbilical cord (the gelatinous tissue in the cord), is a rich source of a different, but equally important, type of stem cell.

When can they be collected?

Cord tissue stem cells can be very easily and successfully isolated from a section of the umbilical cord that is collected at birth.

Once collected, the cord is safely and efficiently transported in a special solution designed to preserve the stem cells during the transportation process to our state of the art laboratory.

Once it arrives at the laboratory the cord is processed immediately. It's then placed in storage where it will remain for use in the future should it be needed.

Preparing for the future

When can they benefit your baby's life?

Cord tissue stem cells have been shown to differentiate into bone, cartilage, nerve, adipose, cardiac, smooth muscle, hepatic and skin cells and are therefore extremely promising in regenerative medicine.

Current clinical trials are under way evaluating cord tissue stem cells for the treatment of:

- Multiple Sclerosis
- Stroke
- Diabetes
- Parkinson's disease
- Treatment of chronic autoimmune and inflammatory conditions, such as Rheumatoid Arthritis and Crohn's disease
- Artificial valves and capillaries
- Gene therapy for delivery of anti-tumour agents for cancer treatments

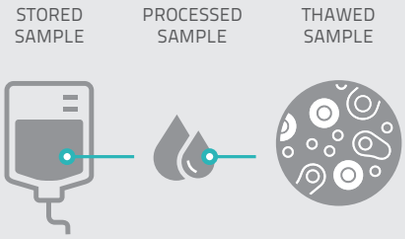
Why do we choose to store volume reduced blood instead of whole blood?

The first reason is that it's the industry standard in the UK. Both the NHS Cord Blood Bank and the Anthony Nolan Trust store volume reduced samples, as do the majority of private banks around the world. Smart Cells also uses the processing technique employed by most public banks.

The second reason is that it's safer. The freezing process used to preserve the sample damages the red blood cells, which means there's a lot of debris and free haemoglobin in the sample when it's thawed. In turn these can result in kidney damage, post transplant complications and blood type incompatibilities. The volume reduction method reduces the red blood cell content. This has the added benefit of minimising reactions in the patient due to blood type incompatibility if the sample is being used to help a brother or sister.

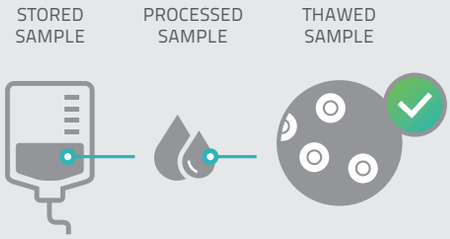
The third reason is that it makes the sample smaller. This is important because it's necessary to use a substance called DMSO in the freezing process. DMSO is associated with cardiac problems, breathing difficulty and serious high or low blood pressure. By making the sample smaller – and more concentrated – we use proportionately less DMSO. The other advantage of a smaller sample is that it takes up less space in a storage facility, making it cheaper to store.

Why not store Whole Blood?



- Larger quantity of DMSO used in freezing process increases risk of infusion reactions
- Higher levels of red cell debris after thawing reduces quality
- Needs washing which is likely to remove valuable cells

Why store Volume Reduced?



- Concentrated sample improves quality
- Lower risk of infusion reactions
- Contains cells that may be useful in future regenerative medicine such as VSEL cells, MSC's and HSC's
- Less red cell debris which minimises incompatibilities when stem cells are being used for a sibling
- No need to wash after thawing so less risk of losing important cells
- Contains hormones and growth factors vital for regenerative medicine

For more information please call us on
+44 (0)1895 424430 or visit us at *www.smartcells.com*

Why trust Smart Cells

Incorporated in July 2000, Smart Cells was the first cord blood stem cell storage company in the UK. We are also the first UK private company to have successfully released stored cord blood units to transplant centres worldwide, to treat children with life-threatening illnesses.

Leading the way by using state of the art technology, we're ensuring we are the most technologically advanced and innovative company in the field. We're also responsible for the most number of successful transplants in the UK.

We never forget what the science is being used for – people. Exceptional customer service has been important to us since we started and our founder is still actively involved in the running of the business. We even have a world class advisory board to make sure our focus remains human.

We have a team of phlebotomists (blood collection specialists) operating on a 24/7 basis. This service has dedicated staff, emergency telephone numbers and call out personnel which save you the inconvenience of having to find, book and manage this service for yourself.

We know the future can be uncertain, so we have disaster recovery plans set up. We have dual storage locations in case something were to happen to one unit. We have back up labs in both South Africa and Hong Kong as well as a disaster recovery unit with a PLC in the rare event of the company going bankrupt.

Our UK lab is situated 3 miles from Heathrow Airport so that all international samples arrive here as quickly as possible. We have collected samples from over 70 countries and have offices in Europe, Africa, Middle East, Asia and the Far East.

Don't just take our word for it. Check out our testimonials and our transplant history on: *www.smartcells.com*

Our Service

The Smart Cells service packages are all-inclusive with no hidden costs. All processing procedures are undertaken in a sterile, controlled environment by specially trained staff.

Smart Cells will give your baby a unique identification number as soon as you decide to order your collection kit from us. This number will be clearly marked on all items in your collection kit, ensuring full traceability at all times. As soon as your baby's cord blood is receipted at the laboratory, the processing will start.

When your baby's cord blood arrives at the laboratory the red blood cells and the white blood cells are separated. The white blood cells, including the stem cells and any cells of current or future therapeutic value, are stored. This is referred to as volume reduced processing or red cell depletion, which is the industry standard method used by leading transplant centres worldwide. It's also the method we're most experienced in, and it's why we were the first company in the UK to carry out transplants.

Once processing has finished and the volume reduced, the concentrated unit of cord blood stem cells is put into a dual-compartment bag, over wrapped and placed into a controlled-rate freezer where the temperature is very slowly reduced to -196°C.

Once it has reached this temperature, the sample is placed into liquid nitrogen vapour in our long term storage tank.

After we've processed your baby's cord blood, we'll write to confirm the cell count results. Your collection kit will contain all the mandatory paperwork and will also be clearly labelled with your unique ID number. The paperwork must be returned with your baby's cord blood for us to process the sample.

Our Laboratory

Our laboratory uses state of the art equipment designed to process cord blood as quickly as possible. All processing procedures are undertaken in a sterile, controlled environment by specially trained staff.

We only use our laboratories for processing, including directly associated tests, and storage of cord blood and cord tissue stem cells.

- We use the industry standard system for cord blood processing – the Biosafe Sepax system
- The facility is based close to London Heathrow airport – minimising transportation times for customers around the world
- Our Advanced Facilities Management System continually monitors the environment; it's fully alarmed and has an uninterruptible power supply in case of a mains electricity failure
- We hold a full licence from the Human Tissue Authority

HTA Human Tissue Authority

HTA Licence 22522

Our experts

Our laboratory staff are trained to the highest possible standards to ensure your baby's cord blood is processed as efficiently and quickly as possible.

Smart Cells's advisory board

Mr Peter Bowen-Simpkins

Chair – Consultant Obstetrician and Gynaecologist. Medical Director of the London Women's Clinic.

Professor Janice Rymer

Dean of Undergraduate Medicine and Professor of Gynaecology at King's College London School of Medicine.

Dr. Ann Smith

Clinical Scientist and Head of Stem Cell Laboratory, Royal Marsden NHS Foundation Trust, Surrey.

Nicola Richards LLP

Partner in a city law firm and used Smart Cells for the birth of her youngest child.

Dame Lorna Muirhead

Former President, Royal College of Midwives. In 2004, Dame Lorna received the inaugural award from the Royal College of Midwives for her lifetime achievement in Midwifery.

Our additional services

We also offer new products which are outlined below:

Smart Cells Group B Strep (GBS)

Strep testing, 5 weeks pre birth

Group B Streptococcus is the most common cause of life-threatening infections in newborn babies in the UK.

However testing for GBS is not offered routinely with the NHS. Smart Cells offers a complementary service that detects whether GBS is present in the mother.

If present, UK guidelines recommend intravenous antibiotics should be offered to prevent GBS infection in newborn babies.

Smart Cells Omega-3 DHA

Testing in third trimester

Omega-3 DHA is one of the most important Fatty Acids, essential for healthy visual and cognitive development of the baby during third trimester. It can also affect the timing of gestation, birth weight and the mother in various ways.

Smart Cells offers a testing service to assess your level of Omega-3/DHA from a blood sample. We provide a personalised recommendation for the optimal level of DHA supplementation required for your baby's development.

Smart Cells Omega-3 DHA

Testing in breast milk

Studies show that Omega-3 DHA levels play a beneficial role in a baby's growth, cognitive development and visual acuity, as well as being essential for the mother's health. The best source of Omega-3 DHA is known to come from breast milk.

At Smart Cells we offer an Omega -3 DHA testing and supplement advice service for optimal infant nutrition and your own wellbeing.

For more information on these services please call us on *+44 (0)1895 424430* or visit us at *www.smartcells.com*

Storing your baby's stem cells

How it works:

Order online:
www.smartcells.com/how-to-order

- Enter your details
- Choose your storage options
- Pay your booking fee
- Smart Cells will contact you to confirm your order within 24 hours
- Your collection kit will be despatched to you

Order by phone:
+44 (0)1895 424430

- Our Advisors will explain the facts & benefits of cord banking and offer you your storage options
- Keep your payment method handy to place your booking fee

What happens next?

Once you've booked with us, your consent documents will be sent to you. On receipt of your signed forms we will despatch your collection kit to you.

Is that it?

Yes for now. Keep your collection kit ready with your hospital bag until the day of delivery.

On the day

Take the kit with you to the hospital. If you've booked a phlebotomist, call to inform them that your labour is commencing, and call again in your last stages of dilation. After the birth, the cord samples and maternal blood are collected by the attending physician or phlebotomist, who will sign the paperwork which is packed in to the kit.

The kit is sealed and handed back to you. Call us to request collection as soon as it's convenient. We will then arrange for a courier to collect your kit. We'll let you know that it's arrived safely at our laboratory, and you'll be called again once the sample has been processed.

Upon successful storage you'll be sent a certificate and the sample will be stored for 25 years.

Frequently Asked Questions

How long have we been operating?

Smart Cells was founded in 2000 and has been collecting and storing samples ever since.

What happens if we go out of business?

Establishments licensed by the HTA are legally required to ensure that in the event of activities ceasing, any tissues/cells and records are transferred to another HTA licensed establishment.

You should ensure that your chosen cord blood establishment has an agreement in place with another HTA licensed establishment for the safe storage of the sample in the event of them closing down. Smart Cells currently has this agreement in place with Vindon Scientific PLC.

Why do we only store for 25 years?

Smart Cells offers a storage plan that enables you to pay up front to store your samples for 25 years.

There is currently no evidence to suggest that the health of your stem cells will deteriorate after 25 years and experts believe that your baby's stem cells will be viable indefinitely.

At the end of your contract you will be given the option of extending your storage term or discarding the sample.

How can the cells be used in the future?

A stem cell transplant is the infusion of healthy stem cells into your body. Stem cell transplants can help your body make enough healthy white blood cells, red blood cells or platelets, and reduce your risk of life-threatening infections, anaemia and bleeding. Stem cell transplants are used to treat people whose stem cells have been damaged by disease or the treatment of a disease.

Do I have to pay to use the sample later or for transportation?

No additional costs will be incurred for the transportation of the sample at any time for therapeutic use.

Does it matter if the birth is a Caesarean section or natural?

No. If you have a Caesarean the collection can take place after the delivery of the placenta, as it would with a natural birth. Either birthing scenario is fine for the collection of cord blood and cord tissue stem cells.

Who collects the samples?

The collection must be performed by a trained and licensed healthcare professional. This could be a private obstetrician or midwife or an assigned phlebotomist.

The Human Tissue Authority (HTA) requires the person who performs the collection to be appropriately trained in the Smart Cells collection process and hold a valid Third Party Agreement to do so.

Smart Cells can arrange for a fully trained and qualified medical professional to carry out the collection at your birth.

For general enquiries, or to order your stem cell collection kit, please contact us:

Telephone *+44 (0)1895 424430*
Email *uk@smartcells.com*
Online *www.smartcells.com*

Our Prices

CORD BLOOD
Booking fee: £195 Final balance: £1500

CORD BLOOD | including phlebotomist
Booking fee: £295 Final balance: £1700

CORD BLOOD & TISSUE
Booking fee: £295 Final balance: £1850

CORD BLOOD & TISSUE | including phlebotomist
Booking fee: £395 Final balance: £2050

- Booking fee provides stem cell collection kit and phlebotomist booking, if required
- Final balance provides courier fees, all tests, processing fees and 25 years storage fees
- All prices include VAT

Other payment plans may be available – including 12 and 24 month payment packages. Please call our customer services line for further information on: *+44 (0)1895 424430*

Our Partner

Borne
Translating Research into Healthy New Life

Smart Cells is proud to be a Founding Donor to Borne, a collaboration between the Chelsea and Westminster Health Charity and the world class maternity team at Chelsea & Westminster Hospital. Premature birth is responsible for over 70% of long term disabilities and deaths in newborn babies. Borne is the first initiative aiming to use groundbreaking research into treatments and education to prevent disability and death in childbirth and improve the lifelong health of mothers and babies.

Led by Professor Mark Johnson, Consultant Obstetrician and Chair of Clinical Obstetrics, Imperial College London, Borne's aim is to translate this research into healthy new life by developing a greater understanding of the causes of premature birth, how to prevent it and developing treatments to protect the unborn child.

Borne is investing in 3 critical areas:

- Pioneering research to understand how to prevent premature birth, heart disease in pregnancy and treatments to prevent cerebral palsy
- Supporting and training maternity teams in high, middle and low income countries
- Developing new innovations that tackle the greatest risks to mothers and newborns and preventing unnecessary complications in childbirth

To find out more about Borne, please visit *www.borne.org.uk* or email *info@borne.org.uk*

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+44 (0) 1895 424430

Unit 7 Chancerygate, Horton Close,
West Drayton, Middlesex UB7 8EW
uk@smartcells.com | www.smartcells.com