

The CordLife Mission



(From left) CordLife Group CEO Steven Fang, Neurosurgeon Dr. Keith Goh and CordLife Technical Director Dr. Andrew Wu with the Conn family

With 1 in every 500 children diagnosed with cerebral palsy¹, medical science has turned to stem cell therapy for this injury.

CordLife was pivotal in Singapore's first cerebral palsy treatment using cord blood stem cells. Georgia Conn's own cord blood unit was stored with CordLife and was successfully used in the treatment of her condition. This groundbreaking medical procedure was made possible after CordLife linked the Conns with neurosurgeon Dr. Keith Goh. Georgia is now happier and better able to concentrate better during her physiotherapy sessions.

At CordLife, we strongly believe in keeping abreast of the latest cord blood stem cell developments such as cellular therapy and

regenerative therapy so that we can provide a well-rounded service as a cord blood bank.

CordLife's highest standards of processing and storing cord blood stem cells have resulted in an earlier successful case of treatment using cord blood stem cells. In 2002, three-year-old leukaemia patient Ryan Foo was given a successful stem cell transplant using his baby sister's cord blood stem cells. Ryan's condition has been in remission and was able to attend school.

(Please read the full article and story inside)

Reference:

1 How common are the "common" neurologic disorders?
D. Hirtz, MD, D. J. Thurman, MD, MPH, K. Gwinn-Hardy, MD, M. Mohamed, MPH, A. R. Chaudhuri, PhD and R. Zalutsky, PhD
NEUROLOGY 2007;68:326-337

The CordLife Promise

CordLife Singapore Is
AA Accredited

To ensure the viability of a cord blood unit for a successful stem cell infusion or transplant, CordLife adheres to and has attained an internationally recognized accreditation from the **American Association of Blood Banks (AABB)**. This accreditation certifies that all cord blood units handled and stored with CordLife have met the highest standard in processes and quality. With this in place, the cord blood units stored with CordLife will be accepted readily by any transplant physicians around the world.



In line with international standards of storage, CordLife uses the compartmentalised cryobag to store all cord blood units. Many of the world's leading private cord blood banks that are **AABB accredited** are using the same cryobags. Today, lead clinicians around the world have determined optimal cell dose for the treatment of diseases such as leukaemia and they usually advise using the entire cord blood unit for pioneering treatments.



The CordLife Quality Guarantee assures all CordLife clients of a cord blood replacement at no cost or **US\$25,000** to defray medical costs if the cord blood loses its viability at the point of transplant.

The CordLife Advantage



We maximise transplant success through Sepax®

To enhance the transplant success of your loved one, CordLife invested in Sepax®, a 100% sterile, automated device to recover the most cells from your baby's cord blood. This technology is only available at CordLife.

Proven expertise and track record

As Singapore's first and only family cord blood bank with a successful cord blood transplant track record, you can be sure that your baby's cord blood can be used to save a loved one. This is why over 25,000 families entrusted their baby's cord blood stem cells with us.

World class innovation

In the true spirit of a Technology Pioneer, a rare and prestigious award given by the World Economic Forum, CordLife is dedicated to giving our clients the best and proven technology available to safeguard their baby's cord blood.

WORLD ECONOMIC FORUM



Technology
Pioneer
2007



Most experienced and largest network of cord blood banks in Asia Pacific

The CordLife Group remains the most experienced private cord blood bank in Asia Pacific and currently markets in 8 countries and operates 5 state-of-the-art cord blood processing and storage facilities.

Another of CordLife's Success Story

Leukaemia boy saved — by baby sister

Couple conceives baby, so her umbilical cord blood can be used to treat dying son. Eighteen months later, he is well

BY CHANG AL-LEEN and NATALIE SOH

TO GIVE their gravely ill son a chance at life, a couple here conceived a second child to save him.

Little Rachel Foo's umbilical cord blood proved a lifeline to her brother, three-year-old Ryan, who received an infusion of her stem cells after other treatment efforts had failed.

That was 18 months ago. Now five, Ryan has started kindergarten and his leukaemia is in remission, said the biotech company Cytime yesterday, which operates CordLife, a private cord-blood bank here that processed and stored the blood.

blood-related ailments, they made up their minds to have a second child to help Ryan.

Cord blood is a rich source of what doctors call haematopoietic stem cells, "blank" immature cells that can become all sorts of blood cells: red, white or platelets.

These can then replace diseased cells in patients who suffer from leukaemia or severe anaemia, for example.

"We were elated when Rachel's blood was shown to be a 100-per-cent match for Ryan," said Dr Tan Ah Moy, head and senior consultant for haematology and oncology services at the KK Women's and Children's Hospital, where the transplant was performed.

An appeal through The Straits Times in Dec 2001 saw hundreds of donors come forward, said Ryan's grateful father, Mr Y Y Foo, 55, but none was suitable. She said: "The healthy cells from his sister re-populated in his bone marrow and revived his immune system, depleted

by the chemotherapy and radiation therapy used to treat the leukaemia."

The first successful cord-blood stem-cell transplant was done in France in 1988, to help a boy with a serious form of anaemia.

Here, the public Singapore Cord Blood Bank, where babies' umbilical cord blood will be processed, frozen and stored, aims to set up its facilities and start freeze-storing cord blood by the last quarter of this year. It plans to build a registry of at least 10,000 samples, to help about 100 patients a year suffering from blood disorders.

Currently, over 2,500 people have stored umbilical cord blood in two private banks here, in case they or family members have need of it in the future. Only a handful have needed to use it so far for blood-related illnesses.

Donors can be charged several thousand dollars for extraction, tests and storage.

As for Ryan, who has just started kindergarten, he is doing well now, said Mr Foo, an engineer. His mother, Wendy, 34, is a part-time accounting and clerical worker.

Although the disease cost him his sight in one eye, and he has trouble concentrating, it is nothing compared to the dark days when his life hung in the balance, Mr Foo said.

"We're still living day by day, and there's no guarantee he won't have a relapse. But our main aim is to make sure Ryan's happy, and nowadays we can more or less enjoy normal family life."

Singapore's First Cerebral Palsy treatment using a little girl's own cord blood stem cells



Singapore's only AABB accredited private cord blood bank with a successful cord blood transplant track record.

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Singapore | Australia | Hong Kong | Indonesia
India | Philippines | China | Thailand | Macau



CordLife Singapore Is
AA Accredited



Cerebral palsy baby helped by cord blood

DON'T EXPECT MIRACLES

"As a parent, you secretly hope that this will be a magical cure for your daughter and she will get up and say, 'Wow, that was a wild ride'. Of course, this was not ever going to be the case and we went into the procedure with our eyes wide open."

Mrs Louise Conn, with husband Michael and daughters Georgia (left) and six-month-old Sybilla



Infusion a first in S'pore; clinical trial planned for next year

By JUDITH TAN

AN ACCIDENT at birth 2½ years ago deprived Georgia Conn of oxygen to her brain, resulting in cerebral palsy.

The damage to the toddler's brain caused her to move involuntarily, suffer from muscle spasms and have up to 50 seizures a day. But in September, after Georgia was infused with her own cord blood in Singapore, her condition improved.

Her Australian parents, who have lived here for five years, noticed changes in her temperament and concentration. She also regained some muscle strength. Said her 35-year-old mother, Mrs Louise Conn: "These changes happened over the past 2½ months, so we are intrigued as to what might happen over the next year or so."

The procedure marked the first time that stem cells from a baby's own cord blood have been used to treat cerebral palsy here.

The 10-minute infusion was carried out by neurosurgeon Dr Keith Goh after getting the green light from the Ministry of Health (MOH).

"There were no ethical issues as the cord blood was Georgia's own. The worst that could happen was nothing. At least her body would not reject her own cells," Dr Goh said.

Georgia has made good progress since her stem cell infusion. She has better visual focus and eye contact with adults during play. She has more vocalization and tries to 'sing-a-long' by making different sounds to nursery rhymes. Georgia has improved postural and head control and is observed to be reaching more with her arms. She is also overall less frustrated or agitated with movements and exercises during therapy.

Ms. Jaclyn Tan

Consultant Occupational Therapist, OzWorks Therapy Pte. Ltd.

Mrs Conn said: "It took us more than 18 months and an enormous amount of research, mainly on the internet, to find the information about the potential for using stem cells."

At the time, the Conns thought their best option was at Duke University in North Carolina in the United States. There, a professor of paediatrics and pathology was conducting a study in which 97 children with cerebral palsy were injected with their own cord blood cells.

Mrs Conn and her husband Michael, 37, got in touch with CordLife, a private cord blood bank at which Georgia's had been banked at birth. It was after CordLife put them in touch with Dr Goh that they realised the infusion could be carried out here.

Eighty per cent of Georgia's banked cord blood was used for the \$10,000 infusion - a payment the Conns felt was "worth its weight in gold".

Dr Goh has since applied to MOH to conduct clinical trials on using cord blood stem cells in the treatment of cerebral palsy here. "The type of trial I am looking at involves about 10 cases. I hope to start the trial early next year. Three children with cerebral palsy have come forward to be treated," he said.

Dr William Hwang, medical director of Singapore's only public cord blood bank, said a current Duke University study found that the infusion of such cord blood cells shortly after birth will facilitate cellular repair of perinatal brain injury, reducing the incidence and severity of cerebral palsy.

"Our neonatologists at public hospitals are seeking grant funding and obtaining approval from the Institutional Review Board to conduct an extension of the Duke trial," he said.

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Rich stem-cell source

BLOOD from the umbilical cord is collected and stored in cryogenic tanks soon after a baby is born. It is a rich source of stem cells - immature cells that can develop into a wide range of blood cells. They can be used to replace those ravaged by diseases like cancer and anaemia.

More than 80 diseases can be treated with cord blood and the number is growing rapidly. They include sickle cell anaemia, thalassaemia, leukaemia, metabolic storage disorders which cause the brain and nerves to deteriorate, and genetic disorders that hamper the ability to fight infection.

New areas where research into cord blood stem cells is currently being done include brain injury, juvenile diabetes, amyotrophic lateral sclerosis or Lou Gehrig's disease, cerebral palsy, congenital heart defects, hearing loss, liver disease and spinal cord injury.

The Heartwarming Story of Georgia Conn

As related by Louise Conn, mother of Georgia

When we felt it was the right time to start a family, we had already been living in Singapore for about a year. We knew that the Singapore medical system has a very good international reputation and it was the right place for us to be starting this adventure. My pregnancy was very easy, uncomplicated, and we had no reason to believe that our daughter, Georgia, would be in any way unhealthy at birth, or at any time in the future.

We had seen the brochures for CordLife and cord blood banking in general at our obstetrician's office, so towards the end of the pregnancy, we did a bit of research into what cord blood banking was, and the potential that it had.

About one week before Georgia was due, we signed up to bank our baby's cord blood with CordLife - never in a million years thinking that we would ever need to use it. We signed up because we liked the potential that cord blood had to help cure diseases like leukaemia, and felt that during Georgia's lifetime, there could be such changes and developments in science, that it would be a fantastic safety net for her, if she should ever fall ill. We truly hoped that she would never need to use it, but it was a nice little insurance policy tucked away.

Georgia's birth journey started well, but during the next hours of that journey, things went very wrong. She was stuck in the birth canal with no oxygen for a prolonged period, so she was suffocating. The lack of oxygen caused her body to start to shut down. The area of the body at the greatest risk with lack of oxygen is the brain, so during the last minutes of the labour, Georgia suffered an acute and extensive hypoxic brain injury.

We had no idea what was going on - and this certainly was not a scenario we had envisaged before going into labour. She was resuscitated after birth, and it took a further seven days to stabilise her. We did a MRI scan then, which revealed the extent of the brain injury. We were then told of her diagnosis of Cerebral Palsy.

Michael and I knew very little about Cerebral Palsy, having never been close to anyone with it. Cerebral Palsy is in essence, a general term for a brain injury. Babies can suffer from Cerebral Palsy due to an event before birth (eg. mother in a car crash, baby suffering from an in-utero event such as a stroke or heart attack, mother suffering from lack of oxygen etc), lack of oxygen during the actual labour and baby's birth, or due to an injury after birth and in early childhood (eg. near drowning, suffering a head injury from a fall etc). And sometimes, there does not seem to be a reason that the doctors can pinpoint why a child has Cerebral Palsy.

Cerebral Palsy is a disorder that affects control of movement and posture, and manifests itself in a number of ways, from high muscle spasticity making the child very stiff, low muscle tone making the child very floppy, involuntary movements of limbs and facial muscles, or lack of movement in

limbs and the face. It can be a combination of all of these. Symptoms vary greatly in severity from poor muscle co-ordination to quadriplegia. Every child is very different. Whatever the child's state, it is extremely devastating for both the child and his/her whole extended family.

Georgia cried almost all the time when she was younger. She had terrible reflux. Her body was constantly spasming. She had seizures - up to 50 a day. She wouldn't sleep. She was in a huge amount of pain, and was in general a very difficult baby. She was not able to travel in a car seat or a pram, which meant leaving the house become difficult. As new parents, this was all extremely physically and mentally distressing to watch your child in pain and not be able to do anything to help.

We started taking her to a paediatric physiotherapist from the age of 4 weeks, and found out more of what the diagnosis of Cerebral Palsy would mean for Georgia and us as a family. Some doctors told us not to hold out much hope that Georgia would ever be independent, ever be able to walk or talk, or do anything much.

Naturally, as parents, there is no way you are going to accept that for your child's future.

We have looked into countless therapy options. From the traditional route of physiotherapy, occupational therapy, visiting neurologists, ophthalmologists, speech therapists, gastroenterologists and orthopaedic specialists, through to the more alternative paths of cranial sacral therapy, hyperbaric oxygen therapy, Glenn Doman therapy technique, myofascial tissue massage, hydrotherapy, and the list goes on and on.

We were, and still are, constantly doing what every parent does for their child, by looking for ways to help improve Georgia's ability and general quality of life. What we have done so far has significantly helped her, but we also had something that not many parents have; their own child's stem cells.

We knew we had Georgia's cord blood banked. It took us over 18 months and an enormous amount of research, mainly on the internet, to find information about the potential for using stem cells, the risks - if any, and especially using a child's own cord blood, to help Cerebral Palsy children. It seemed that the best place for us to go to explore the option of using Georgia's cord blood was in the United States, at Duke University in North Carolina. This University, and Dr Joanne Kurtzberg in particular, seemed to be the place where parents were taking their children, and all were reporting varying degrees of improvement in their children post infusion.

The infusion itself is a very simple procedure, a day in the hospital, the infusion only takes about 30 minutes. It seemed a long way to go for such a simple process. We got in contact with CordLife to see if it was possible to transport Georgia's cord blood stem cells over to the United States. It was possible but complex and time sensitive. It seemed like our only alternative.

Then CordLife put us in contact with Dr Keith Goh, to discuss our plans further. Keith felt very strongly that the infusion should be able to be done here in Singapore. He championed our cause through the hospital system and the Ministry of Health, and finally on the 8th of September this year, Georgia received her own cord blood stem cells. No international journeys and new medical teams. The infusion was done 10 minutes and in one day.

Of course you as a parent are secretly hoping that this will magically cure your daughter, and she will get up and say to you, "Wow, that was a wild ride". Of course this was not ever going to be the case, and we went into the procedure with our eyes open, knowing that this was just part of the therapy journey for Georgia. What it has the potential to do, however, is make her therapy journey significantly easier.

Since she had the stem cells, we have noticed changes in Georgia's temperament, concentration and engagement, use of vocalisation, her muscle strength and renewed energy for life and all her exercises. These changes have happened over the past 2 and a half months, so we are very intrigued as to what might happen over the next year or so. And it is not just us as parents with rose-coloured glasses who have noticed. Georgia's therapists and neurologists have also noted changes in her.

Georgia is a very happy, bright and engaging child, who loves music, games and jokes, and activities such as swimming. While her little friends are on play dates and starting ballet classes, Georgia is busily working very hard learning the basic human movements, and to do what comes naturally to most children.

We truly feel that we have used Georgia's stem cells at the right time and for all the right reasons. There was no downside for us trying it. They were not going to make Georgia ill, or make her condition any worse. We, like the many other parents around the world who are trying stem cell technology, are seeing results. And, we like all those other parents, will continue to consider stem cells as part of Georgia's future therapy program.

Any expenditure was well spent. We have been very blessed to be surrounded by many friends and family here and in Australia, who have given generously to help us with all of Georgia's therapy.

We would categorically encourage all parents to bank their child's cord blood. You just have no idea if, when or how they may be used in the future.

We would like to take this opportunity to publicly thank Dr Keith Goh, CordLife and all our friends and family for their support in Georgia's journey so far, and specifically to CordLife and Dr Goh, enabling a cord blood infusion here in Singapore.

We hope that in the months and years to come, we have some great news to report on Georgia's development.

Louise Conn

The first thing I noticed after one week post stem cell infusion was how Georgia became much calmer. As weeks went on, I could notice her being happier and more alert and trying to vocalize more with the people around her.

Physically, I have noticed that her general tone has gone down, giving her a bit more control with certain movements of the upper and lower extremities. Her postural control in sitting has improved and she is able to maintain a sitting position with some support on her hands for short periods of time. Her head control has improved as well as her ability to maintain her head in midline with some chin tuck in order to focus on the activity at hand. I also see changes with her endurance level in a positive way.

Being happier, Georgia is showing more interest to interact with her environment.

Ms. Diane Paulin

Paediatric Physiotherapist

As appeared in LianHe ZaoBao on 3 December 2009

用自体脐带血治脑麻痹症 我国完成首起脐带血干细胞移植疗程

脑神经专科医生认为, 这种仍处于临床试验阶段的疗法, 有望改善大脑性麻痹症病人的身体机能和发育进展, 为提高病人生活质量带来一线希望。

林慧慧 报道

尝试通过移植干细胞修复受损脑细胞组织, 本地出现首个移植自体脐带血干细胞治疗大脑性麻痹症的病例。

脑神经专科医生认为, 这种仍处于临床试验阶段的疗法可能有望改善大脑性麻痹症病人的身体机能和发育进展, 为提高病人生活质量带来一线希望。

今年两岁半的女童乔治娅·康恩(Georgia Conn)刚在今年9月8日完成移植自体脐带血干细胞疗程, 不到30分钟的程序跟一般静脉输血量无异, 只需住院一天, 医药费大约1万元。

由于这种使用在大脑性麻痹症病人(cerebral palsy)的干细胞疗法仍在试验阶段, 究竟它对改善病情有多大功效医学界还没有明确定论。

不过, 据她母亲路易斯(35岁, 家庭主妇)透露, 完成这项获得卫生部批准的疗程后, 乔治娅的情绪变得较稳定, 注意力以及控制发声的能力都获得改善。



原籍澳洲, 现是新加坡永久居民的法国巴黎银行董事麦克·康恩夫妇是在进行了长达一年的资料收集后, 才决定让患有大脑性麻痹症大女儿乔治娅尝试干细胞移植疗程。完成疗程后, 乔治娅的情绪变得较稳定, 注意力以及控制发声的能力都获得改善。

在进行疗程之前, 乔治娅经常有肌肉痉挛问题。

以前乔治娅根本无法安坐在婴儿安全车座或手推车, 妈妈路易丝说, 她现在甚至能自己开车带乔治娅到植物园散步。

这对一般家长来说可能是平常不过的事, 但对我们来说, 以前根本无法做到。

乔治娅使用的是她出世时存放在私人脐带血库康盛人生(CordLife)的脐带血。

负责为她进行脐带血干细胞移植疗程的, 是当年为伊朗连体姐妹进行分体手术、修复受损细胞, 所以将干细胞疗法运用在脑神经受损病人身上, 相信

有望给这些病人带来一线希望, 改善他们的生活质量。

脐带血含有丰富造血干细胞, 干细胞在特定条件下, 能分化成不同功能细胞。

新加坡公共脐带血库发言人在回答本报询问时透露, 它自2004年成立至上个月30日, 已经发放脐带血进行39个干细胞移植手术。

美国欧洲多所医院和研究机构仍在进行通过移植干细胞治疗大脑性麻痹症病人的临床试验, 而正在对97名病人展开临床试验研究的美国杜克大学克兹伯教授(Dr. Joanne Kurtzberg), 可

谓这领域的先驱。

吴有晶医生指出, 以乔治娅的情况来说, 她可能需要进行两次到三次的干细胞移植疗程, 不过由于她只剩下20%脐带血, 所以她唯有寄望医学界尽快找出培植脐带血干细胞的方法, 以便有更多干细胞供移植。

乔治娅是因为出世时受困在母亲产道太久, 导致脑缺氧受损而患上大脑性麻痹症。

这种因大脑中枢神经系统受损导致智力和肌肉控制出现障碍的疾病, 至今仍无药可医。

据估计, 每500个新生儿中就有一个患大脑性麻痹症。