

April 2008

# Research and Development

Call Cellsense TOLL FREE 1800 005 541 [cellsense.com.au](http://cellsense.com.au)



## From the CEO - Dr Anthony G Coulepis

It is indeed an exciting time for stem cell research. Stem cells are the pre-cursors of nearly all specialised cells in the body and can be encouraged to develop into specific types of cells, meaning they have the potential to treat and cure many conditions.

Stem cells derived from umbilical cord blood are known as "ethical adult stem cells". These cells are simple to collect and can be stored for long periods (more than 18 years).

## Amazing recovery attributed to umbilical cord blood stem cells

A Sacramento, USA boy suffering from an incurable condition may be living proof that umbilical cord blood stem cells can have remarkable results.

Dallas Hextell was already a miracle to his parents Cynthia and Derek, after spending three years trying to conceive.

The joy of Dallas' birth was met with gradual heartbreak as he was unable to feed from his mother. He was constantly crying and barely opening his eyes.

At only 8 months old, Dallas was diagnosed with Cerebral Palsy. At 18 months old, Dallas' physical development was closer to that of an 8 month old. He couldn't wave or clap or crawl. He didn't talk or even babble and only communicated with screams.

During her pregnancy Cynthia made the decision to privately bank her child's umbilical cord blood stem cells.

As a result of the growing awareness of the potential of stem cell based therapies, over the past several years there has been an increasing global interest in privately collecting and storing cord blood stem cells.

In Australia, less than 1% of parents store their baby's umbilical stem cells compared to 3.5% to 6% in the USA, UK and the Asia Pacific region. These figures are rapidly rising, reflecting a significant future growth expectation in Australia.

- Dr Anthony G Coulepis, CEO.

After Dallas' diagnosis, the Hextells traveled to Duke University where doctors were using cord blood as part of a clinical trial to treat a small number of children with cerebral palsy or brain damage. After speaking to some of the parents and hearing of the improvements in their child since having the stem cell transplant, the Hextells agreed to infuse Dallas' own stem cells back into his blood stream last July. The procedure took less than an hour.

Just 5 days after the procedure, Dallas said his first word "mama". That was quickly followed by laughing and learning to wave.

"That's the best feeling in the world to hear your little kid laugh," said Dallas' dad Derek. "He never laughed before."

"Before he went to Duke, we were trying to teach him to use a walker," Cynthia said. "Now he walks with no assistance at all."

Dr Nancy Synderman, NBC News' chief medical editor said, "...I think



it's an extraordinary reminder that cord blood, that stuff that is thrown away with the placenta in the emergency room as a sort of medical waste, can have extraordinary applications."

Said Cynthia, "They're like gold."

For further information on our stem cell research projects or other stem cell information, call Cellsense TOLL FREE on 1800 005 541 or visit us at [cellsense.com.au](http://cellsense.com.au)

## About Cellsense Pty Ltd

Cellsense Pty Ltd is a high growth healthcare and biotech company with a clear focus on the ethical adult stem cell sector.

Cellsense is one of the two Divisions operated under Stem Cell Healthcare Limited (SCH), which is 100% owned by ASX listed company Alexanders Securities Limited (ASX:ALE).

The Cellsense division of SCH provides services including the collection, processing and cryo-preservation of umbilical cord blood adult stem cells in Australia ([www.cellsense.com.au](http://www.cellsense.com.au)).

## The latest Umbilical Cord Blood Articles

While Embryonic Stem Cells hold the media spotlight and their use is the cause of debate, Adult Stem Cell research and therapy quietly continues to forge ahead.

In 2007, 11 stored cord blood (CB) samples were released from an American cord blood bank for autologous infusion: seven for children diagnosed with cerebral palsy, three for children with juvenile diabetes and one with a rare immune system disorder.

"Cord blood stem cells (SCs) are increasingly being used in treatments to save and enhance lives... as many as 1 in 3 individuals (in the US) could benefit over their lifetimes from applications of one's own SCs to repair or replace damaged or diseased tissue".

Full article- Cord Blood Registry  
[http://www.cordblood.com/cord\\_blood\\_news/media/press\\_release/](http://www.cordblood.com/cord_blood_news/media/press_release/)



Families and the medical community can be assured of the Cellsense commitment to quality, recognised by the National Regulatory Authority. The Therapeutic Goods Administration (TGA).

The TGA regulates the manufacture of blood products in Australia and Cellsense is fully licensed.

Our TGA Licence Number is **MI-16062006-LI-001329-11**.

Cellsense is also proud to announce that we are the **only** private cord blood company in Australia that provides a Medical Device collection kit approved by the TGA. (ARTG ID 149507).

"... only 1 in 100 infants with pre-leukemic clone in their CB eventually develop leukemia and that a second postnatal 'trigger' would be necessary for the clinical development of childhood leukemia".

"With an increasing number of families opting for private umbilical cord blood (UCB) collection and storage, there will certainly be more cases of autologous UCB transplantations in the future." "[the patient] is in complete remission 20 months after CB transplantation... the decision made by the parents to save the UCB may have increased the patient's chance of survival".

Full article- American Academy of Pediatrics  
<http://www.pediatrics.org/cgi/content/full/119/1/e296>

"UCB does contain mesenchymal stem cells (MSCs) and should not be regarded as medical waste. It can serve as an alternative source of MSCs to bone marrow".

"Most important, the proliferation and differentiation abilities of MSCs may decrease with donor age... UCB cells can be considered as 'very young' and thus, an excellent alternate source of MSCs".

Full article- American Society of Hematology  
<http://bloodjournal.hematologylibrary.org/cgi/content/full/103/5/1669>



## Progress from our Stem Cell Researchers

Since initiation of this project in 2005. The Cellsense Research Team in partnership with it's Research Partners - the Women's and Children's Research Institute (WCHRI), the Institute of Medical and Veterinary Science (IMVS) and the University of Australia (UoA) - have been developing a culture system to generate regulatory T-cells in the laboratory.

Our Team has now achieved this goal and are the first to succeed in generating human regulatory T-cells from cord blood stem cells.

Our Research Team has tested these cells in assays that determined their function as normal regulatory cells and have demonstrated their effectiveness is equivalent to naturally isolated regulatory cells from a healthy individual.

The Cellsense Research Team has now filed a US Patent on this technology and are proceeding to further optimise the system to better characterise the Treg cells. These are essential steps towards clinical application of Treg for cell therapy. This cutting edge research could not have been achieved without the support Cellsense has received from Parents, Doctors, Midwives and Hospitals.

## About the Cellsense Australia-Wide Support Network

Cellsense operates an Australia-wide network with a presence in all States and Territories. The Cellsense support and collaborative network consists of more than 1,200 Doctors and Obstetricians, over 210 Hospitals and more than 100 Healthcare Professionals who assist Cellsense as skilled cord blood collectors.

Cellsense stays with the families from first contact through every step of the process. Our qualified and informed Healthcare Specialists can be contacted with any query.

Please call us on Toll Free 1800 005 541 if you would like to receive free tickets for your patients to any of the PBC Expos in your state during 2008.