

media release

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World-First – Youngest child undergoes own cord blood reinfusion to determine potential to prevent type 1 diabetes

A 20-month old Australian girl has been reinfused with her own umbilical cord blood to determine whether it will delay or prevent the onset of type 1 diabetes.

For the CORD study (Cord Reinfusion in Diabetes), which is being conducted through the Kids Research Institute at The Children's Hospital at Westmead, Lucy, is now the youngest child - from more than 100 children currently being screened – who has undergone this investigational treatment.

Led by Professor Maria Craig, the CORD study is investigating the hypothesis that administering cord blood to children with a family history of type 1 diabetes delays or prevents the onset of this life-long condition. The study is being funded as part of Cell Care's clinical trial support program.

Since the study commenced recruitment participants have been monitored to see whether they develop antibodies, which indicate a high likelihood of developing diabetes. Lucy's cord blood was stored in the hope that in the future it could help her seven-year old sister, Ava, who has type 1 diabetes. Lucy's cord blood was stored with Cell Care cord blood bank at birth. Lucy has now shown positive antibodies, which means she is at high risk of developing type 1 diabetes also. She has recently been reinfused with her own cord blood cells at the Children's Hospital at Westmead to test whether this treatment can prevent this.

Cord blood is rich in important and unique immune cells, known as regulatory T-cells, as well as stem cells. For this reason, the cells found in cord blood are considered promising in improving the treatment of many diseases, including type 1 diabetes, heart disease, stroke, and neurological disorders.

"There is no prevention or cure for type 1 diabetes - a condition that requires life-long management. This is an important step in the advancement of this trial that is looking specifically to prevent or delay the onset type 1 diabetes. We are hopeful this study will provide potential solutions to this chronic condition," said Professor Craig.

"Ongoing follow-up with Lucy will now occur every 3-6 months for the next three years to monitor her response to the cord blood reinfusion," added Professor Craig.

Currently Australia has one of the highest rates of type 1 diabetes in the world with approximately 130,000 people living with the conditionⁱ and 2,000 new cases diagnosed each year. The onset of type 1 diabetes is often at an early age, thus is one of the most common chronic diseases amongst children. A family history of type 1 diabetes is associated with an increased risk of developing the disease compared with the general population.ⁱⁱ

The CORD study at The Children’s Hospital at Westmead is potentially ground-breaking research in preventing the onset of type 1 diabetes.

About the CORD Study

The research arm of The Children’s Hospital at Westmead, Kids Research institute’s CORD study is investigating young children (aged 1-15 years) whose own cord blood has been stored in a private cord blood bank and have a close relative with type 1 diabetes – such as a parent or sibling. The study approach was developed by a team of leading local researchers in paediatrics, diabetes, immunology and haematology. It is being funded by a grant from Australia’s largest private cord blood bank, Cell Care Australia.

The study is expected to take five years to complete.

More about type 1 diabetesⁱ

Type 1 diabetes can occur at any age, although most cases develop amongst children, teenagers and young adults. Those with the condition often need to conduct 6 to 8 finger pricks a day to monitor their blood glucose levels and are treated with insulin injections or an insulin pump.ⁱ

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