COrd Reinfusion in Diabetes (CORD) Pilot Study – Fact Sheet

About the CORD Study

The Children's Hospital at Westmead is conducting the Cord blood Reinfusion in Diabetes (CORD) Pilot Study to find out if cord blood can prevent or delay the development of type 1 diabetes in children at risk of developing the condition.

Type 1 diabetes results from an autoimmune process which leads to the destruction of insulin-producing cells in the pancreas. The study will assess whether unique cells found in cord blood can prevent or delay the immune destruction in the pancreas and protect a child from developing the disease.

The CORD study is recruiting high risk children (those who have a close relative with type 1 Diabetes), who have their cord blood stored in a private cord blood bank.

There are two phases in the pilot study:

1. Screening Phase: Eligible children will have blood taken every 6 to 12 months to detect the presence of early markers of type 1 diabetes, known as antibodies

2. Treatment and Follow-up Phase: Children who test positive for 2 or more of antibodies during the Screening Phase will undergo tests and assessments to see if they can receive treatment with their own cord blood. These children will then be followed for 3 years.

The study is being led by Professor Maria Craig, a Paediatric Endocrinologist at The Children's Hospital at Westmead in New South Wales. The study is funded by Cell Care, Australia's largest private cord blood bank.

About type 1 diabetes

Type 1 diabetes results when harmful T cells (known as auto-reactive T cells) destroy insulin-producing β-cells in the pancreas. Antibodies to the insulin-producing cells can often be detected before type 1 diabetes is diagnosed. This autoimmune process can however, be prevented by another type of T cell known as a regulatory T cell (or Tregs).

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 require treatment with insulin injections or an insulin pump.

Diabetes can lead to a number of health complications when a person has lived with the condition long-term. It is the leading cause of non-traumatic lower limb amputation and end stage kidney disease. It is also associated with eye disease – particularly diabetic retinopathy, which can also be present in children and adolescents with type 1 diabetes.

About Cord Blood

Cord blood is the blood that remains in a baby's umbilical cord and placenta after the baby has been born and the umbilical cord has been cut.

Cord blood contains a diverse mixture of cells. It is a particularly rich source of stem cells which have the ability to develop into the many different blood cell types comprising the blood and immune system. Cord blood is increasingly being used for blood transplants in place of bone marrow to treat certain cancers.

Cord blood is also a source of regulatory T-cells which are important in controlling the immune system and which may have therapeutic potential in the treatment of auto-immune disorders. The cells found in cord blood are considered promising treatments for many diseases, including heart disease, stroke, diabetes and neurological disorders such as cerebral palsy.

About Cord Blood Collection

Cord blood banking is the process of collecting the blood from the umbilical cord immediately after birth and cryogenically storing it for potential medical uses.

The process is a simple, painless one and only takes a few minutes following birth. The cord blood is collected into a sterile collection bag.

After the cord blood has been collected, it is transported to a processing laboratory where it is tested. The unwanted plasma is then removed and the remaining cells are cryogenically stored. Tests have shown that cells remain viable through this process, and the evidence suggests they can be stored indefinitely and thawed back into healthy potent cells when needed.

More Information

For further information about the CORD Study, please contact the CORD Study Coordinator/Nurse at The Children's Hospital at Westmead:

Email: SCHN-CHW-CORD@health.nsw.gov.au
Phone: (02) 9845 3512

More information about cord blood collection and storage can be accessed at www.cellcareaustralia.com.