Media Release

Pioneering WA study brings comfort for IVF children and families

Monday, 26 April 2021

A new Western Australian study examining the longer-term health outcomes of children born from IVF treatment is being heralded as a major breakthrough.

Just published in the leading medical periodical, Human Reproduction, the study has examined influences on gene regulation within the genome of children born from IVF (DNA methylation patterns).

It is estimated that approximately 1 in 25 children born in Australia, and over 8 million children and adults worldwide, have been born following assisted reproductive technologies (ART).

Lead investigator, Professor of Reproductive Medicine at UWA, Head of Fertility Services, King Edward Memorial Hospital and WIRF Research Fellow, Prof Roger Hart, said the study was largest and most detailed of its kind to-date.

“It is known that children born to women who have undergone IVF treatment are at an increased risk of congenital malformations, however their longer term health outcomes are comparatively unknown,” Prof Hart said.

The Study set out to compare various long-term health outcomes of children born from IVF treatment (The Growing Up Healthy Study), – a project which recruited 303 adolescents and young adults, conceived through ART - with similar aged, naturally conceived children, from the longitudinal Raine Study.

This particular analysis studied the DNA profiles of data from the children born from ART and compared them to children from the Western Australian pregnancy, Raine Study, who were not conceived by ART.

The study team found no difference in the epigenetic profile (DNA analysis) between children born from IVF treatment and those conceived naturally.

Professor Hart said the results were very reassuring for all IVF children, their families, and all those currently undertaking, and considering, IVF treatment.

“Certain epigenetic changes may lead to an increased predisposition to health conditions like cardiovascular disease, diabetes and cancer in later life. However, our findings suggest that for children born from IVF their longer term health outcomes should be no different to the general population.”

The study did find some differences between children born from IVF and ICSI treatment (where the sperm is injected into the egg), however this may relate to the need for the ICSI treatment in the first place (eg the health status of the father), rather than the treatment itself.

This work has been supported by the National Health and Medical Research Council.

The paper, ‘DNA methylation patterns within whole blood of adolescents born from Assisted Reproductive Technology are not different from adolescents born from natural conception’ has been published online in Human Reproduction and can be viewed here.

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Media opportunity:

Professor Roger Hart is Head of Fertility Services, King Edward Memorial Hospital and a WIRF Research Fellow. You can view his WIRF researcher profile here.

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Background:

The Women and Infants Research Foundation

The Women & Infants Research Foundation is one of Australia's leading medical research institutes dedicated to improving the health of women and infants. We focus our research and programs across three principal areas: the prevention of preterm birth, gynaecological cancers, and women's mental health.

As a world-leader in preterm birth prevention, our research and programs have directly contributed to a number of improved clinical practices and significantly improved health outcomes.

WIRF have played key foundational roles in both The Growing Up Healthy Study and The Raine Study.

The Raine Study is one of the largest successful prospective cohorts of pregnancy, childhood, adolescence and now early adulthood to be carried out anywhere in the world.

The cohort was established between 1989 and 1991 wtih an initial focus to examine the effects of repeated ultrasound imaging and placental blood flow studies during pregnancy; however, the long-term value of this unique cohort was also recognised, and the study continued into childhood, adolescence and now adulthood.