

Why are girl babies winning in the battle for survival?

May 27 2014



Credit: Anna Langova/public domain

Sexual inequality between boys and girls starts as early as in the mother's womb – but how and why this occurs could be a key to preventing higher rates of preterm birth, stillbirth and neonatal death among boys.

A team from the University of Adelaide's Robinson Research Institute has been studying the underlying genetic and developmental reasons why

male babies generally have worse outcomes than females, with significantly increased rates of [pregnancy complications](#) and poor health outcomes for males.

The results - published today in the journal *Molecular Human Reproduction* - show that male and female babies develop in very different ways, and the placenta plays a key role in these gender differences.

"Our research has found that there are undeniable genetic and physiological differences between boys and girls that extend beyond just the development of their sexual characteristics," says senior author of the paper Professor Claire Roberts, leader of the fetal growth research priority for the Robinson Research Institute.

"We've known for some time that girls are clearly winning in the battle for survival, with markedly better outcomes for female babies for [preterm birth](#), stillbirth, [neonatal death](#), and other complications after birth, such as macrosomia (a baby that weighs more than 4-4.5kg or 8 pounds 13 ounces at birth). Male babies generally grow faster and bigger than females. This occurs in both the animal and human worlds, but until now we haven't really understood how or why," Professor Roberts says.

The researchers investigated whether the type and pattern of genes being expressed by the placenta is different for boys and girls.

They compared the genes expressed in 300 placenta samples and found that more than 140 genes were expressed differently across male and female samples.

"Our results suggest that there is a distinct sex bias in the regulation of genes in the human placenta," says lead author and University of Adelaide PhD student Sam Buckberry.

"We found that with female babies, there is much higher expression of genes involved in placental development, the maintenance of pregnancy and maternal immune tolerance.

"This suggests that girls are more likely to adopt a risk-averse strategy towards development and survival, and it goes some way to explaining the differences in male and female development in the womb," he says.

Professor Roberts says: "These findings may be important to help guide future sex-specific therapeutics for pregnant women and for babies in the neonatal nursery."

Provided by University of Adelaide

Citation: Why are girl babies winning in the battle for survival? (2014, May 27) retrieved 20 November 2023 from <https://medicalxpress.com/news/2014-05-girl-babies-survival.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.