

# Boy babies at greater risk of pregnancy complications

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New research led by the University of Adelaide has confirmed that boy babies are much more likely to experience potentially life-threatening outcomes at birth than girls.

The research, which investigated data of more than 574,000 South Australian births over a 30-year period (1981-2011), is the first population-based study of its kind in Australia to confirm the presence of [differences](#) in birth outcomes based on the sex of the baby.

The research team - involving the University of Adelaide's Robinson Research Institute, the University of Groningen in The Netherlands, and the Pregnancy Outcome Unit of SA Health - evaluated the relationship between the babies' sex and adverse outcomes, such as [pre-term birth](#), [pregnancy](#)-induced high blood pressure disorders, and [gestational diabetes mellitus](#).

The results will be published online today in the journal *PLOS ONE*.

"The major conclusion of our study is that the evidence is there and it is very clear: the sex of the baby has a direct association with [pregnancy outcomes](#)," says research leader and senior author Professor Claire Roberts, from the University's Robinson Research Institute.

**The study found that:**

- Boys are more likely to be born spontaneously pre-term. Boys show a 27% higher risk for a pre-term birth between 20-24 weeks' gestation, 24% higher risk for a pre-term birth between 30-33 weeks, and 17% higher risk for pre-term birth between 34-36 weeks.
- Mothers carrying boys are 4% more likely to suffer gestational diabetes.
- Mothers carrying boys are 7.5% more likely to suffer pre-eclampsia at term.
- However, pregnant women carrying a girl have a 22% higher risk for early onset pre-eclampsia requiring a pre-term delivery.

Lead author Dr Petra Verburg from the University of Groningen, also currently based at the University of Adelaide's Robinson Research Institute, says: "Our results indicate there may be a need for specific interventions tailored to male and female babies, to prevent [adverse outcomes](#) for both child and mother. We're investigating other factors that may predict pregnancy complications, taking fetal sex into account."

Professor Roberts and her colleagues have previously published on sex differences in the expression of 142 genes in the placenta from normal pregnancies.

"The placenta is critical for pregnancy success," Professor Roberts says. "We believe that sex differences in placental function may explain the differences we're seeing in outcomes for newborn boys and girls, and their mothers.

"The next step is to understand the consequence of these differences and how they influence the path to pregnancy complications."

**More information:** Petra E. Verburg et al, Sexual Dimorphism in Adverse Pregnancy Outcomes - A Retrospective Australian Population

Study 1981-2011, *PLOS ONE* (2016). [DOI: 10.1371/journal.pone.0158807](https://doi.org/10.1371/journal.pone.0158807)

Provided by University of Adelaide

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