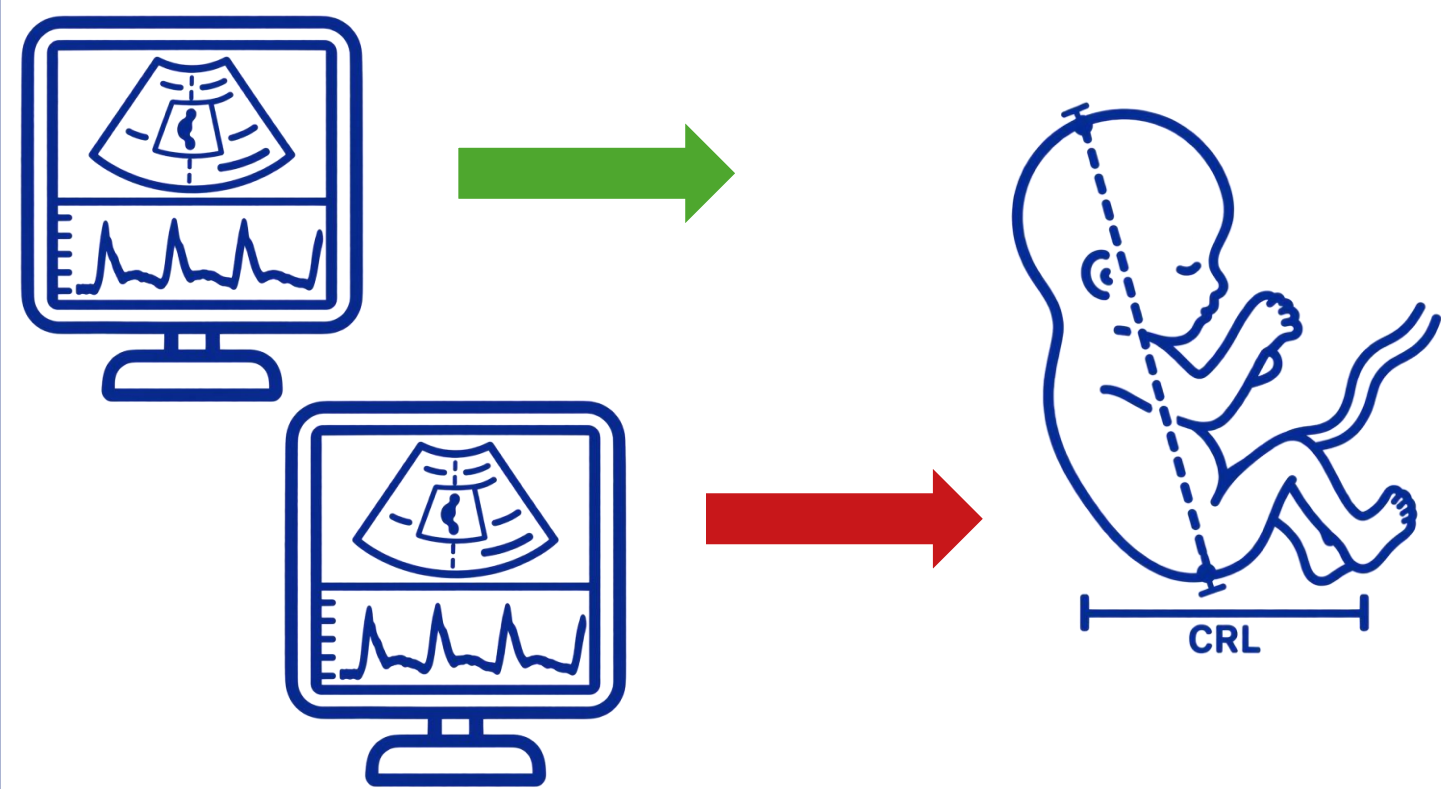


The association between periconceptional uterine artery Doppler indices and first-trimester pregnancy outcomes:
The Generation R Next study.

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Conclusion

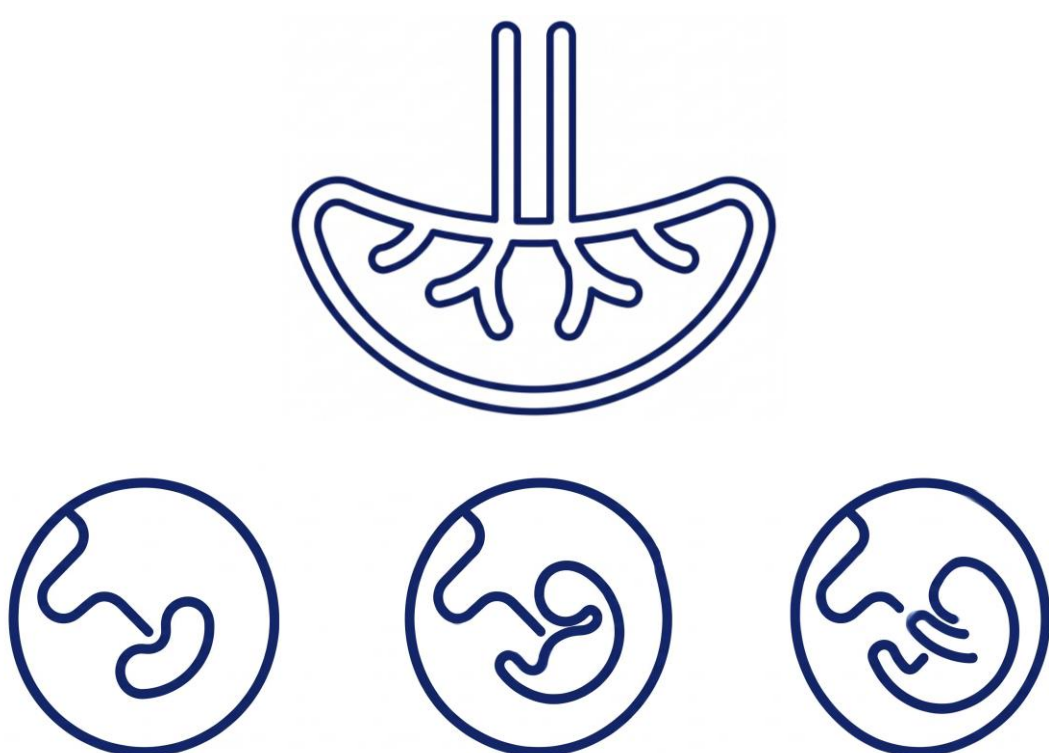


No statistically significant associations were found between periconceptional uterine artery Doppler indices and embryonic growth trajectories.

Preconceptional uterine artery Doppler indices tended to have a positive association with 3D Crown-Rump-Length.
First-trimester uterine artery Doppler indices tended to have a negative association with 3D Crown-Rump-Length.

Introduction

Placenta-related pregnancy complications likely originate in the periconception period, alongside maternal hemodynamic adaptation and embryonic growth and development.
Uterine artery Doppler indices reflect vascular adaptation and are associated with pregnancy loss, fetal-growth restriction and pre-eclampsia.
Research on early maternal hemodynamic adaptation and first-trimester pregnancy outcomes is limited.

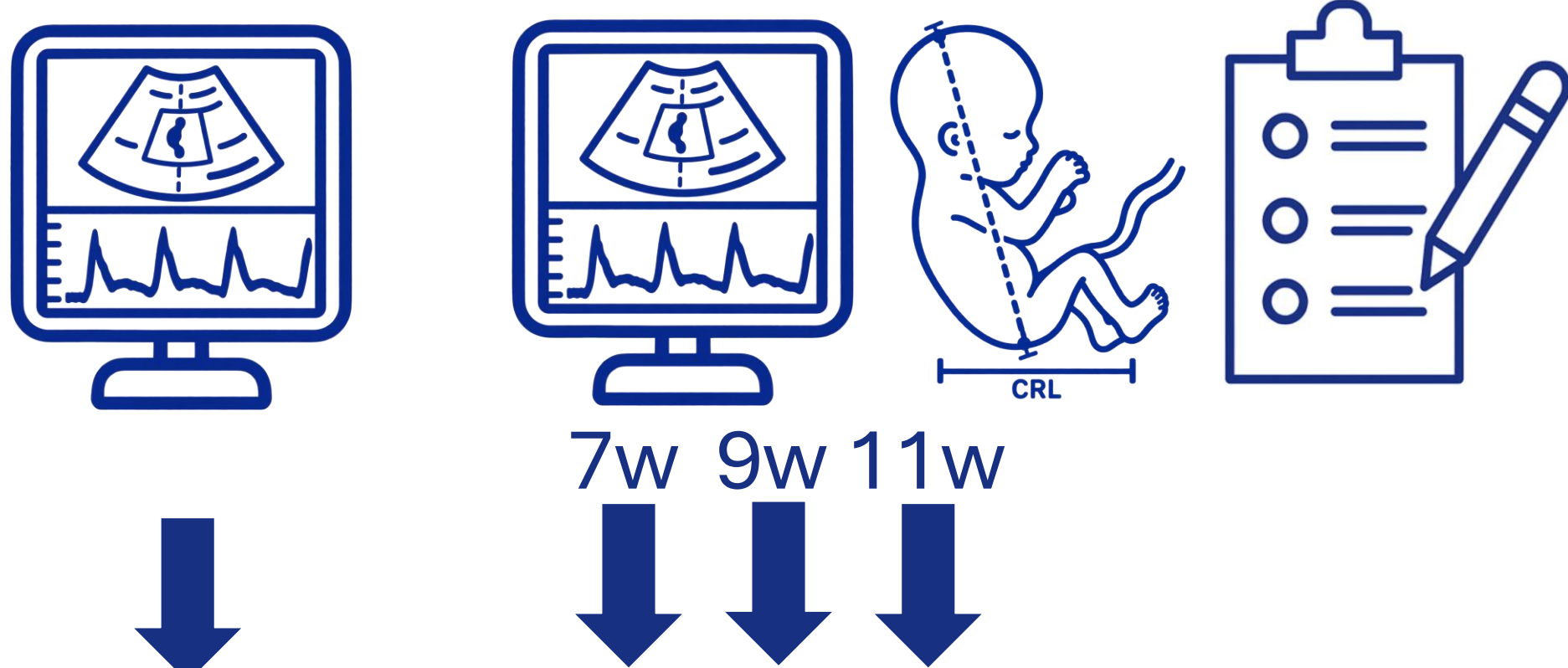


Objective: To examine the association of periconceptional uterine artery Doppler indices with first-trimester pregnancy outcomes reflected by embryonic growth and ongoing pregnancy.

Methods

Exposure:

Uterine artery
Pulsatility Index
Resistance Index



Outcomes:

Crown-Rump-Length
2D and 3D

Ongoing pregnancy
>24w GA



Participants:
4036 pregnancies

Analytic sample:
569 pregnancies

Statistics: Logistic regression and linear mixed models.

Results

Figure 1 – Effect estimates of preconceptional uterine artery Doppler indices on 3D CRL* (n = 44)

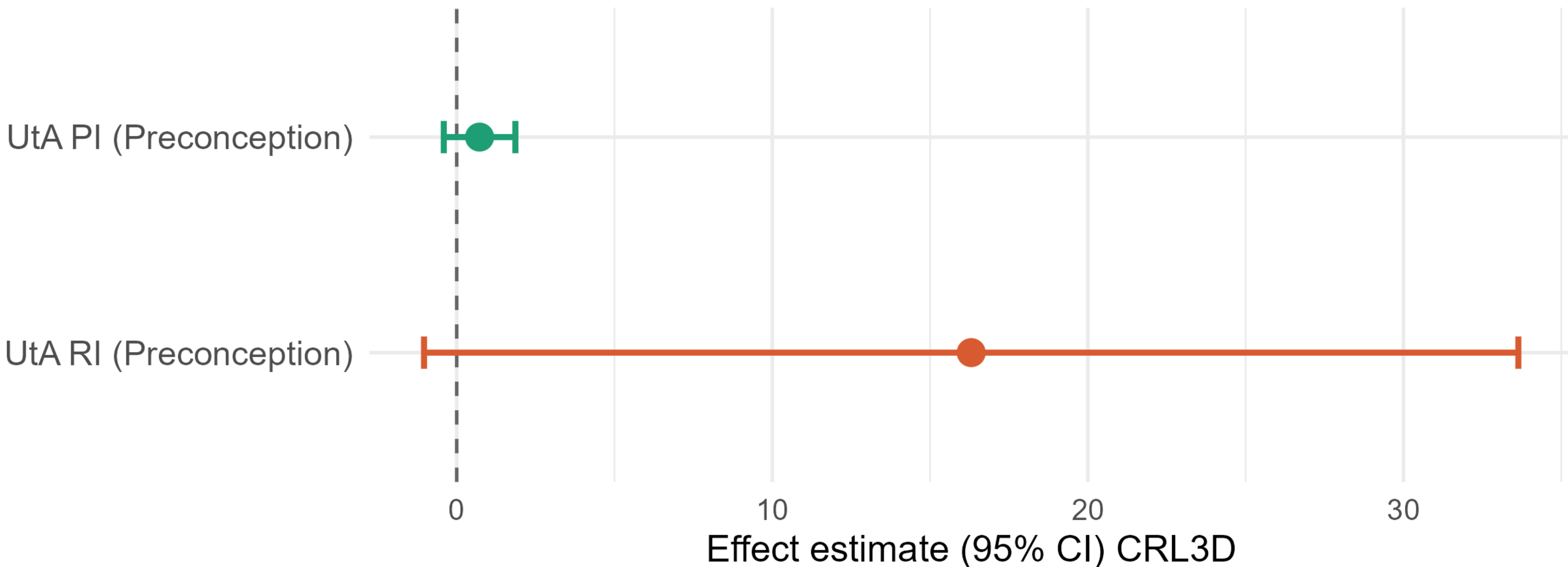
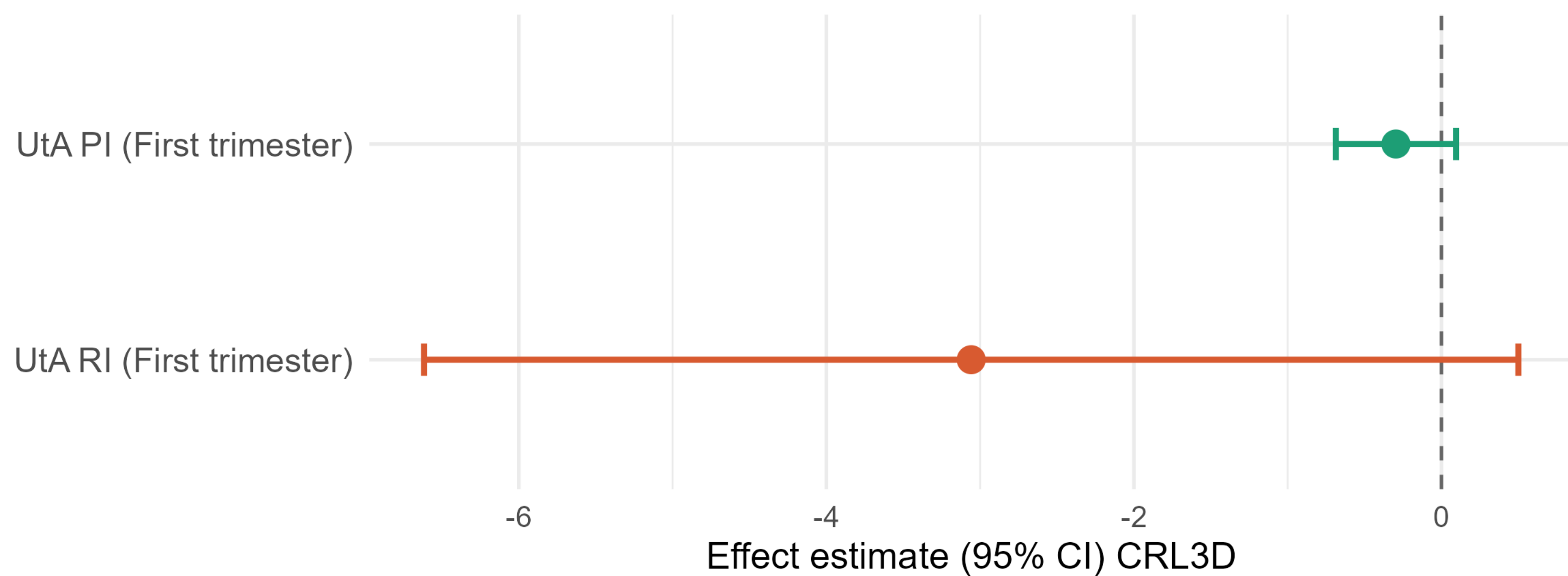


Figure 2 – Effect estimates of first trimester uterine artery Doppler indices on 3D CRL* (n = 287)



**Model adjusted for age, BMI, parity, ethnicity, education, smoking, folic acid, systemic and diastolic blood pressure, conception mode, fetal sex*

- ➔ UtA-PI and UtA-RI and 2D CRL were not statistically significant but had a similar tendency.
- ➔ No statistically significant associations were found for preconceptional UtA-PI and UtA-RI and ongoing pregnancy beyond 24 weeks GA.

****** UtA-PI = Uterine artery pulsatility index; UtA-RI = Uterine artery resistance index; GA = gestational age; CRL = Crown-Rump-Length