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# Effectiveness of third-trimester ultrasound screening in the prediction of small for gestational age neonates: a retrospective cohort study

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### Introduction

The aim of this retrospective cohort study is to evaluate the effectiveness of third-trimester ultrasound screening at a median gestational age of 33 weeks' gestation (IC 32.71;33.85) to predict fetal birthweight and detect small for gestational age (SGA) neonates below the 10<sup>th</sup> percentile ( $\leq P10$ ).

### Material and Methods

Between March 2020 and December 2022, 1,317 third-trimester routine growth scans were performed at a median gestational age of 33 weeks, in a tertiary University hospital in Liège, Belgium. We compared the estimated fetal weight (EFW) at the third-trimester routine growth scan with the corresponding fetal birthweight.

### Results

101 fetuses out of 1,317 (7.7%) had a birthweight  $\leq P10$ . 53 fetuses (4%) were diagnosed antenatally with an EFW  $\leq P10$ . 35 of these 53 fetuses had a corresponding birthweight  $\leq P10$ , whereas the remaining 18 newborns had a birthweight within the normal range. Therefore, this screening strategy for SGA  $\leq P10$  during the third-trimester routine growth scan showed a sensitivity of 34.7% and a specificity of 98.6%. The positive predictive value of this screening strategy is 66% and the corresponding negative predictive value is 95% with a positive likelihood ratio of 24.4.

### Conclusion

In our cohort, a routine third-trimester ultrasound screening performed by experimented sonographers at a median gestational age of 33 weeks showed a poor sensitivity to predict SGA  $\leq P10$  at birth.

	Birthweight $\leq 10^{\text{th}}$ percentile	Birthweight $> 10^{\text{th}}$ percentile
Estimated fetal weight $\leq 10^{\text{th}}$ percentile	35	18
Estimated fetal weight $> 10^{\text{th}}$ percentile	66	1251

Table 1: Performance of the screening strategy

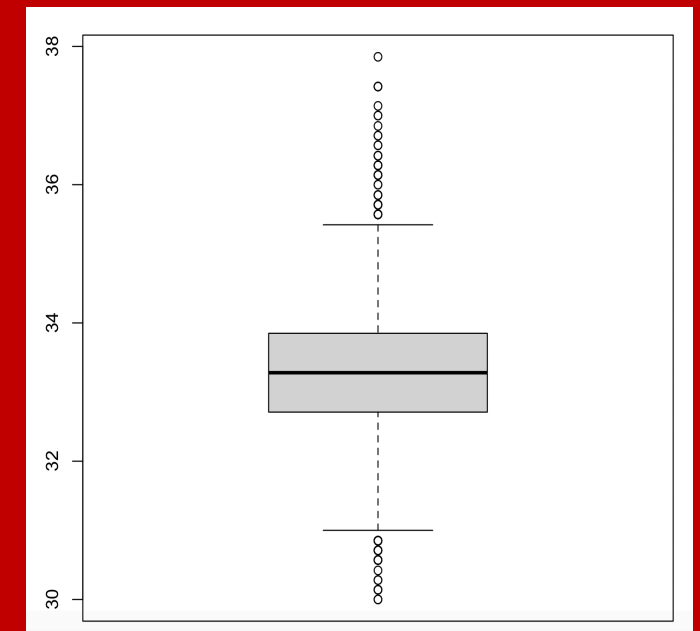


Figure 1: Timing of the third-trimester routine growth scan ( weeks )