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DOI

[10.1093/eurpub/ckaf161.409](https://doi.org/10.1093/eurpub/ckaf161.409)

Publication date

2025

Document Version

Final published version

Published in

European journal of public health

Citation (APA)

Suleri, A., Bertens, L., Ahmed, I., van der Hoeven, F. D., Steegers, E., & Been, J. V. (2025). Spatial, contextual and environmental inequalities in birth outcomes. *European journal of public health*, 35(Issue Supplement_4), Article iv167. <https://doi.org/10.1093/eurpub/ckaf161.409>

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Abstract citation ID: ckaf161.409

Spatial, contextual and environmental inequalities in birth outcomes

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The first 1,000 days of life are a vital period for growth and development, with lasting effects on health and well-being. There is growing recognition of the importance of environmental and societal exposures, like the neighborhood a child is born into. This supports a 'Health in All Policies' approach, acknowledging that health is shaped by decisions beyond the healthcare sector. This study explores inequalities in perinatal health across high-risk neighborhoods in the Netherlands, as identified by the Dutch National Program on Safety and Livability (NLPV), focusing on the neighborhoods' classification rather than their health outcomes. We used nationwide data from Perined (2015-2021) to compare perinatal outcomes among residents of 20 designated NLPV focus areas to other regions ($n = 1,118,022$ births). Outcomes included perinatal mortality (death from 24 weeks gestation to 7 days after birth), small for gestational age (birthweight <10 th percentile), and preterm birth (before 37 weeks). A three-step logistic regression approach was applied: (1) comparing all focus areas combined to the rest of the country, (2) each focus area to the rest of the Netherlands, and (3) each to its municipality. Perinatal mortality (OR 1.13, 95% CI: 1.02-1.24), small for gestational age (OR 1.19, 95% CI: 1.16-1.21), and preterm birth (OR 1.09, 95% CI: 1.06-1.12) were all significantly more prevalent in designated focus areas compared to the rest of the Netherlands. Similar patterns were observed when comparing each designated focus area to other areas as well as to its corresponding municipality. Living in a high-risk neighborhood - defined by safety and livability - is associated with adverse birth outcomes. These findings highlight the need for place-based policy actions to reduce health disparities from the earliest stages of life. Future research will investigate whether local interventions in these specific neighborhoods contribute to improvements in perinatal health outcomes.

Key messages:

- Babies born in high-risk neighborhoods face significantly higher risks of perinatal mortality, preterm birth, and low birthweight, highlighting deep-rooted health inequalities.
- Place-based policies targeting neighborhood safety and livability are essential to improve early-life health outcomes and reduce disparities from the very start of life.