

Pregnancy, birth and neonatal outcomes associated with reduced fetal movements: A systematic review and meta-analysis of non-randomised studies

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Abstract

Background Several studies exploring the associations of reduced fetal movements (RFM) with adverse perinatal outcomes have been published in recent years. **Objectives** To synthesise the evidence on pregnancy, birth and neonatal outcomes in women who presented with RFM to ascertain associations between RFM and pregnancy outcomes. **Search Strategy** PubMed, EMBASE, CINAHL complete, Maternity and Infant Care, PsycINFO, and Science Citation Index databases were searched from inception dates to 8th July 2021 **Selection Criteria** Non-randomised studies involving pregnant women [?]24 weeks' gestation, who presented with a primary complaint of RFM compared to women who did not present with RFM were included. **Data Collection and Analysis** Two authors independently extracted data and assessed risk of bias using the Quality in Prognosis Studies (QUIPS) tool. Data were meta-analysed using a random-effects model and presented as Odds Ratios (OR) or Standard Mean Differences (SMD) with 95% Confidence Intervals (CI). **Main Results** Thirty-nine studies were included. Women with RFM were more likely to have a stillbirth (OR 3.44, 95% CI 2.02-5.88) and small for gestational age (OR 1.36, 95% CI 1.15-1.61) when compared with women who did not have RFM. Associations were also found for induction of labour, instrumental birth and caesarean section but not for preterm birth (OR 0.92, 95% CI 0.71-1.19) or neonatal death (OR 0.99; 95% CI 0.51-1.91). **Conclusion** RFM are associated with increased odds of stillbirth and small for gestational age, induction of labour, instrumental birth and caesarean section but not neonatal death.

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Conflict of Interest Declaration

There are no conflicts of interest to declare

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Contribution to authorship

LC, LG and VS conceived the study. LC conducted the database searches and imported the citations into Covidence. LC, LG and VS screened and selected studies for inclusion, extracted data and assessed risk of bias using the Quality in Prognosis Studies tool. LC led the meta-analysis and manuscript writing. LG and VS contributed to the critical revision of the manuscript. All authors reviewed and approved the final manuscript.

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Figure 1 PRISMA Flow Chart.docx available at <https://authorea.com/users/473590/articles/563749-pregnancy-birth-and-neonatal-outcomes-associated-with-reduced-fetal-movements-a-systematic-review-and-meta-analysis-of-non-randomised-studies>

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Figure 2 Quality of included studies.docx available at <https://authorea.com/users/473590/articles/563749-pregnancy-birth-and-neonatal-outcomes-associated-with-reduced-fetal-movements-a-systematic-review-and-meta-analysis-of-non-randomised-studies>

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Figure 3 Association between RFM and adverse primary outcomes.docx available at <https://authorea.com/users/473590/articles/563749-pregnancy-birth-and-neonatal-outcomes-associated-with-reduced-fetal-movements-a-systematic-review-and-meta-analysis-of-non-randomised-studies>

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