



Nutrition Society Congress 2024, 2–5 July 2024

## An examination of factors that influence infant growth in the first weeks of life

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Childhood obesity is a serious public health concern worldwide. One in five children are overweight or obese in Ireland<sup>1</sup>. Suboptimal growth, either in pregnancy or infancy, can increase the risk of obesity in childhood<sup>2</sup>. National policy fails to recognise early life exposures as potential contributors to Ireland's obesity epidemic. This research examines the impact of 'Labour and Birth', 'Birth Weight Status', and 'Maternal BMI' on infant growth in the first weeks of life.

This research is a secondary analysis of data collected as part of the WellFed study, a randomised placebo-controlled trial investigating the effect of a maternal dietary supplement comprised of a milk protein hydrolysate and yeast beta-glucan (Wellmune®) (LS-23-07-O'Sullivan). The supplement does not influence the present findings. Mother and infant anthropometrics were measured during two study visits, at approximately 4 and 8-weeks postpartum. Participants completed a series of questionnaires to obtain basic demographic, birth and lifestyle data. Infant weight and length percentiles were calculated using the UK-WHO 0-2 years: weight-for-age percentiles and the UK-WHO 0-2 Years: length-for-age percentiles for both males and females. Statistical analysis was performed using IBM SPSS Statistics (version 27).

Data from 51 mother-infant dyads show infants delivered via cesarean section weighed less at the 4-week ( $4.1 \pm 0.4$  vs  $4.5 \pm 0.5$  kg,  $p = 0.015$ ) and 8-week follow-up ( $5.1 \pm 0.5$  vs  $5.5 \pm 0.6$  kg,  $p = 0.021$ ) and were shorter at the 8-week follow-up ( $56.3 \pm 1.9$  vs  $57.7 \pm 2.0$  cm,  $p = 0.030$ ) compared to infants born vaginally. Infants born following induction were significantly heavier at the 8-week follow-up compared to those not-induced ( $5.8 \pm 0.7$  vs  $5.2 \pm 0.5$  kg,  $p = 0.006$ ). In this cohort, 40% of infants were classified as large-for-gestational-age (LGA). Across the 8-week study period, 50% of LGA infants dropped two or more growth percentiles.

Observations from this study highlight a high prevalence of LGA infants in this cohort which raises concern for the national prevalence of LGA infants in Ireland. Interventions during labour and birth were shown to influence infant growth in this study. These findings highlight the need for further investigation into the relationship between early life exposures and growth during infancy and childhood. Implementing healthcare policies focusing on reducing the number of elective birthing procedures performed and targeting obesity amongst women of reproductive age are possible measures that can be implemented to help tackle the obesity crisis in Ireland.

### Acknowledgments

The authors would like to acknowledge the funders Food for Health Ireland, Grant no: TC201800025, and all participants who took part in the WellFed study.

### References

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