

Abstract – Original Research

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Title of Presentation:

Maternal Self-Reported Folic Acid Supplementation is Confirmed by Folate Biomarkers in the Screening for Pregnancy Endpoints (SCOPE) Study

1. Brief description/abstract for the content of the poster presentation

Introduction:

The World Health Organisation recommends folic acid (FA) supplementation peri-conceptionally for the prevention of neural tube defects, and to continue throughout pregnancy for best outcomes. In New Zealand (NZ), FA supplements are recommended peri-conceptionally and up to the end of the first trimester. There is limited data on the folate status of pregnant women in NZ and its association with FA supplementation intake.

Objectives:

The aim of this study was to describe the folate status of pregnant women at 15 ± 1 weeks' gestation and

examine its association with reported FA supplementation uptake and dose.

Methodology:

Participants (healthy nulliparous women with singleton pregnancy) (n=1921) from the NZ sample of the Screening for Pregnancy Endpoints international pregnancy cohort study were interviewed at 15 ± 1 weeks' gestation by trained research midwives, who collected sociodemographic, dietary and vitamin supplementation information. Participants provided dietary supplements for verification of FA dose. Non-fasting blood samples were collected. Plasma folate was analysed via microbiological assay. Ethical approval was obtained (NZ ethics committee AKX/02/00/364). All women provided written informed consent.

Results:

Plasma folate was measured on 98% of the cohort. Mean (\pm SE) plasma folate was significantly higher in women reporting FA supplement uptake (n=1408; 73%) compared to women reporting no FA supplementation (n=513; 27%): $54.6\text{nmol/L} \pm 1.5$ vs $35.1\text{nmol/L} \pm 1.6$ respectively ($p < 0.001$). Plasma folate (nmol/L) and reported FA dose ($\mu\text{g/day}$) were significantly positively correlated ($r = 0.42$; $p < 0.05$). This association remained significant after controlling for sociodemographic, lifestyle factors and multivitamin uptake ($\beta = 0.0003$, $t = 15.97$, $p < 0.001$).

Conclusion:

FA supplementation (uptake and dose) was significantly associated with plasma folate at 15 ± 1 weeks' gestation. This finding suggests that self-reported FA supplementation uptake and dose, along with verification of supplementation, is a reliable measure of FA supplementation intake in this study group.

2. Please give two to three key references (published by you or others) which can be used to inform future work:

- 1) World Health Organization, 2016. *WHO recommendations on antenatal care for a positive pregnancy experience*. World Health Organization.
- 2) www.scopestudy.net
- 3) Bulloch RE, Lovell AL, Jordan VMB, McCowan LME, Thompson JMD, Wall CR. Maternal folic acid supplementation for the prevention of preeclampsia: A systematic review and meta-analysis. *Paediatr Perinat Epidemiol*. 2018;00:1–12. <https://doi.org/10.1111/ppe.12476>

10 Please identify, where possible, up to three specific key messages that participants will take away from your poster presentation to inform their future practice.

1. Maternal folic acid supplementation is recommended by the World Health Organisation peri-conceptionally and throughout pregnancy for best outcomes.
2. Epidemiological studies commonly rely on maternal self-report to assess supplementation intake in pregnancy, as biomarkers are not routinely measured.
3. We analysed plasma folate levels in New Zealand pregnant women in their early second trimester, and found that self-reported folic acid supplementation (uptake and dose) was confirmed by maternal plasma folate levels. This suggests that self-report with verification of supplementation is a good proxy measure of maternal folic acid supplement intake in this sample.