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An investigation into a healthy pregnancy lifestyle programme and its impact on maternal dietary intake

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Pregnancy related comorbidities are continuing to increase despite potential opportunities for health improvement through lifestyle modifications⁽¹⁾. Optimising nutritional intake during pregnancy is a key component to improving maternal and fetal health yet, UK midwives report a lack of knowledge, awareness and confidence to enable sufficient education on optimal maternal nutrition⁽²⁾.

Aim: To assess if a healthy pregnancy lifestyle programme influences maternal dietary intake.

Women (n = 15) with an uncomplicated pregnancy, aged >18 years old and <30 weeks gestation within Merseyside were recruited from a 6-week healthy pregnancy lifestyle programme, that included healthy eating advice. Dietary data from 3-day food diaries, were collected at baseline, on completion of the 6-week programme and at 12 weeks. Nutritics software was used to analyse dietary information, calculating the mean energy and nutrient intake for each participant, from each day and comparing these values to Dietary Reference Values (DRV)⁽³⁾ for pregnancy. Specific nutrients: carbohydrates, protein, fat, saturated fatty acid (SFA), sugar, iron, calcium and iodine were chosen for analysis, based on their key role during pregnancy. Ethical approval was given by Edge Hill University (ETH2021-0224) and the Health Research Authority (ID: 306095). Data (mean ± SD) underwent a one-way ANOVA to explore significant differences between timepoints.

Throughout the 12-week period, mean energy intake did not significantly change ($P = 0.346$). There was also no change in the percentage of dietary carbohydrate, protein and fat intake ($P > 0.05$). Dietary intake of SFA did not change from baseline to the 12 weeks (27.79 ± 6.75 to 23.58 ± 8.31 g, $P = 0.79$). At baseline, intakes of iron (mg) (12.47 ± 11.80) were < RNI of 14.8 mg and remained too low at 12 week (10.76 ± 5.67 $P = 0.69$). Calcium intake significantly increased approximately 2-fold between baseline and 12 weeks (476.12 ± 166.88 to 811.00 ± 317.70 mg, $P = 0.024$). This increase was clinically relevant as by 12 weeks, participants met the DRV recommendations (700mg). Dietary intake of sugar ($P = 0.15$) and iodine ($P = 0.71$) did not significantly change at any time point.

Dietary intakes show minimal improvement during and after participating in the healthy pregnancy lifestyle programme with the exception of a significant improvement in calcium intake. The increase in calcium can help reduce the risk of hypertension and impaired bone health during pregnancy and the postnatal period. However, iron intakes were low at baseline and did not improve over time, despite healthy eating advice. **Conclusion:** This healthy pregnancy lifestyle programme resulted in improved calcium intake however, only maintained participant's typical dietary intake. Further work is needed to determine how nutrient intake could be improved, particularly iron.

References

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