

DIETARY PATTERNS PRIOR TO PREGNANCY AND ASSOCIATIONS WITH PREGNANCY COMPLICATIONS



BACKGROUND

While diet prior to and during pregnancy may have implications for the health of both mother and baby, few studies have explored pre-pregnancy diet and its relationship with pregnancy outcomes. There is evidence to suggest that patterns of diet are relatively stable and have been shown to track from prior to during pregnancy. Therefore, it is likely that establishing healthy eating behaviours prior to becoming pregnant could be a key target for intervention to improve pregnancy health. Diet has often been examined by relationships between single nutrients or foods, e.g., fat, carbohydrate, or red meat, and a particular health outcome (e.g., disease or weight gain). Whilst this is useful for hypothesizing the mechanism for the diet–disease relationship it does not account for the complexity of human dietary behaviours where foods, and therefore nutrients, are often consumed in combination. Dietary pattern analysis detects groups of foods that tend to cluster (i.e., consumed together) and their combined effect on the risk for diseases or their effect in disease progression can be determined.

THE STUDY

THE OBJECTIVES OF THIS STUDY WERE TO:

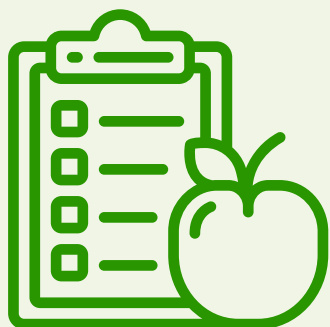
1. Derive pre-pregnancy dietary patterns for women enrolled in a prospective cohort study (Alberta Pregnancy Outcomes and Nutrition; APrON) in the province of Alberta, Canada.
2. Describe associations between dietary patterns and socio-demographic characteristics.
3. Describe associations between dietary patterns and pregnancy complications.

Upon enrolment into APrON (median age of gestation, 17 weeks), women (n = 1545) completed a validated 142-item food frequency questionnaire recording food and beverages consumed “in the 12 months prior to pregnancy”. Other assessments included pre-pregnancy body mass index (BMI), gestational weight gain, gestational hypertension, gestational diabetes, and socio-demographic characteristics. Dietary patterns were derived using principal components analysis.

FINDINGS

DIETARY PATTERNS

- Four dietary patterns were retained, accounting for 22.9% of the variation in the overall diet.
- Dietary patterns were named “**healthy**,” “**meat and refined carbohydrates**,” “**beans, cheese and salad**,” or “**tea and coffee**.”



SOCIODEMOGRAPHIC ASSOCIATIONS

- Those with higher levels of education, and who reported being more physically active prior to pregnancy tended to have higher “**healthy**” pattern scores.
- Women with higher levels of education had lower “**meat and refined carbohydrate**” pattern scores.
- The “**bean, cheese and salad**” pattern score was positively associated with higher household income, and having a higher total physical activity score prior to pregnancy.
- Those women who were older, tended to have higher “**tea and coffee**” pattern scores.

PREGNANCY COMPLICATIONS

- Higher “**healthy**” pattern scores prior to pregnancy were associated with lower odds of developing gestational hypertension during pregnancy independent of confounders including pre-pregnancy BMI status.



CONCLUSION

This study adds to the growing evidence that preconception diet and lifestyle is crucial for the optimal health of the mother, and possibly her offspring, and needs to be the focus for future health interventions. Diet prior to pregnancy is an important target for interventions and may reduce the likelihood of developing complications such as gestational hypertension.

Jarman, M., Mathe, N., Ramazani, F., Robson, P. J., Johnson, S.T., Bell, R.C., APrON and ENRICH Team. (2018). Dietary Patterns Prior to Pregnancy and Associations with Pregnancy Complications. *Nutrients*, 10(7): 914.



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