

### **The Role of Child Diets in the Association between Pre-pregnancy Diets and Childhood Behavioral Problems: A Mediation Analysis**

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**Objectives:** To quantify the mediating role of childhood diets in the association between maternal diets before pregnancy and offspring behavioral problems.

**Methods:** This study included 1448 mother-child pairs from the Australian longitudinal study on women's health and its sub-study mothers and their children's health. The healthy eating index score was constructed using a semi-quantitative and validated 101-item food-frequency questionnaire. Childhood behavioral problems were assessed using the strengths and difficulties questionnaire. Three dietary patterns were identified using principal component analysis to explore childhood dietary patterns (high fats and sugar; prudent diets; and

diary). A causal inference framework for mediation analysis was used to quantify the mediating role of childhood diets in the association between pre-pregnancy diets and the risk of offspring behavioral problems.

**Results:** We found a 20% of the total effect of the poor adherence to pre-pregnancy diet quality on the risk of offspring behavioral problems was mediated through childhood high consumptions of fats and sugar. No clear mediating effect through prudent, and dairy childhood diets was observed.

**Conclusions:** This study suggests that childhood high fats and sugar consumption may contribute to the total effects of the pre-pregnancy diets on the risk of childhood behavioral problems.

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