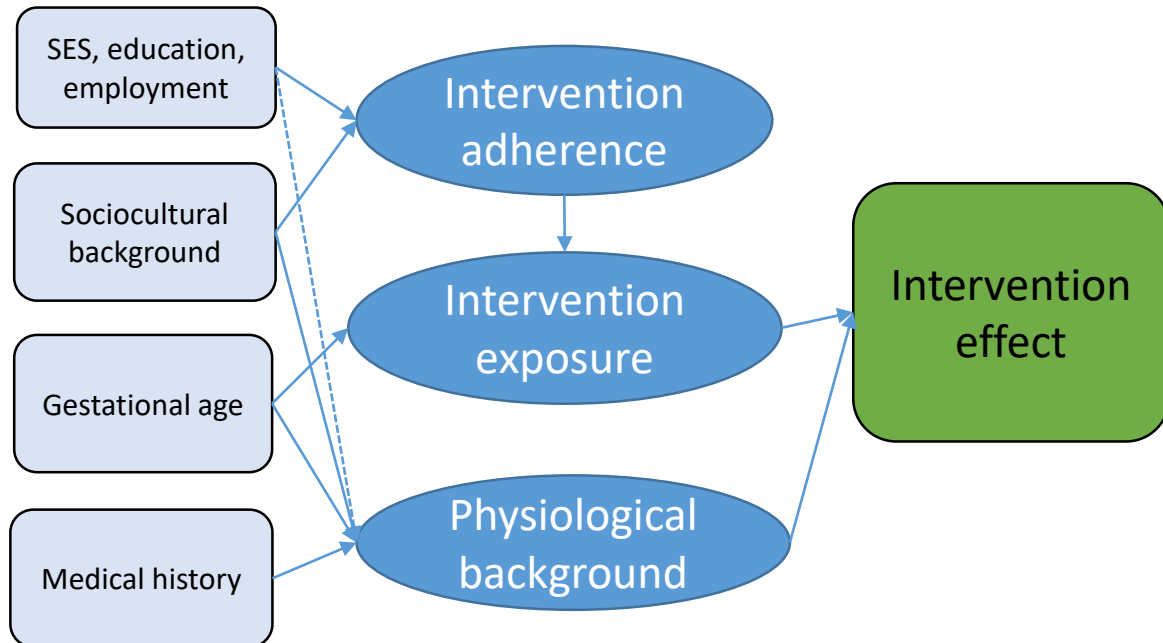


# CRE HiPP BITE

## Brokering Innovation Through Evidence

A bite-sized summary of a piece of research in preconception and pregnancy health, presented by Dr Siew Lim, Senior Research Fellow and HiPPP EMR-C Generating Impact Stream Co-Lead



This systematic review was commissioned by the American Diabetes Association/European Association for the Study of Diabetes Precision Medicine in Diabetes (ADA/EASD PMDI) GDM prevention working group.

### Preventing gestational diabetes mellitus (GDM): A systematic review and meta-analysis of participant characteristics to inform precision medicine

#### BACKGROUND

- Precision prevention involves using information relating to a person's unique biological, social and environmental context to determine their responses to interventions for preventing diseases.
- However, intervention effects according to individual characteristics for the prevention of GDM have not been systematically investigated.
- This study aimed to systematically evaluate the participant characteristics associated with GDM prevention.

## This research addressed the question: Does prevention of GDM work similarly for everyone?

### METHODOLOGY

- The MEDLINE, EMBASE, and Pubmed databases were searched to identify relevant lifestyle (diet, physical activity or both), metformin, myoinositol/inositol and probiotics interventions.
- From 10,347 studies, 116 were included in the systematic review and meta-analysis.

### FINDINGS

- Physical activity was more effective in GDM reduction in participants with a normal BMI, compared to those with an obese BMI (17 studies).
- Diet and physical activity interventions were more effective in reducing risk for GDM in participants without polycystic ovary syndrome (PCOS), than for those with PCOS (59 studies).
- Diet and physical activity interventions were more effective in reducing risk for GDM in participants without a history of GDM, than for those with an unspecified history (59 studies).
- Metformin interventions were more effective in participants with PCOS than for those with unspecified status (13 studies), or when commenced in preconception rather than during pregnancy (13 studies).

This research is currently under review and forms part of the Consensus Report for the ADA/EASD Precision Medicine in Diabetes GDM prevention working group, due to be released in Oct 2023.

## RECOMMENDATIONS FOR PRACTICE

In terms of GDM prevention, women with PCOS may benefit more from metformin interventions than those without this trait. Additionally, women with normal BMI may benefit more from physical activity interventions than those with obese BMI .

Future research to predict GDM prevention through interventions should (1) include trials commencing in preconception and (2) provide results stratified by participant characteristics, including social and environmental factors, clinical traits and other novel risk factors.

### What is CRE HiPP

The Centre of Research Excellence in Health in Preconception and Pregnancy (CRE HiPP) is an innovative, passionate, multi-disciplinary team of researchers, clinicians, students and consumers.

We aim to refine and implement health promotion, lifestyle improvement and obesity prevention, strategically targeting women preconception and during pregnancy, to improve the health of women and the next generation.

Find out more about CRE HiPP at our website: [hipp.org.au](http://hipp.org.au).

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