Effects of antenatal diet and physical activity on maternal and fetal outcomes: individual patient data meta-analysis and health economic evaluation

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Plain English summary

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Plain English summary

Maternal obesity and excessive weight gain in pregnancy increase complications in the mother and baby. These may be reduced by diet and physical activity. It is possible that benefits are restricted to particular groups of women based on their body mass, age, number of previous children, ethnicity and underlying medical condition(s). We looked at the effects of diet and physical activity on weight gain in pregnancy and on the risk of complications in the mother and baby. We obtained anonymised data of individual participants from multiple studies, and combined them using the technique known as individual patient data meta-analysis. This was intended to allow us to identify particular groups of women who may benefit from diet and physical activity.

We established the International Weight Management in Pregnancy Collaborative Network, comprising anonymised data of 12,343 women from 36 studies. We found that diet, physical activity and mixed methods, individually and when analysed together, effectively reduced weight gain in pregnancy, possibly decreased complications in the mother and had no effect on the baby. The effects were similar in all groups of women.

We did not identify any benefit to mothers or their children when they gained weight within specific targets that are currently recommended in many countries. A mother's age and a history of previous births predicted weight gain in pregnancy.

Diet and physical activity in pregnancy reduced weight gain by 0.7 kg, and had no effect on combined complications. There were with no differences in these benefits between various groups of women. The rate of Caesarean section was reduced by the lifestyle intervention compared with usual care.

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