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Diet and exercise does not prevent gestational diabetes in obese women

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A diet and exercise regime for high-risk obese pregnant women, whilst effective in promoting a healthy lifestyle, does not prevent gestational diabetes, finds a study led by King's College London. The findings, published in the *Lancet Diabetes and Endocrinology*, suggest that programmes promoting healthy behaviours are unlikely to be effective in preventing diabetes in obese women; instead, resources should be directed towards better screening and treatment, including the use of a more stringent threshold for diagnosis.

Obesity rates are highest in developed countries, affecting 25% of women in the UK and 34% of women in the US. Obesity is a risk factor for complications in pregnancy, especially gestational diabetes and large-for-gestational-age delivery (LGA). Previous studies have suggested that lifestyle intervention programmes might help reduce the risk of gestational diabetes in obese pregnant women, but this is first large-scale trial to test the effect of an intensive intervention in the UK and the world.

The randomised UPBEAT study, funded by the National Institute for Health Research, recruited over 1,500 women from eight inner-city antenatal services providing care to multi-ethnic (including White, Black and Asian) populations of generally high socioeconomic deprivation across the UK.

Half the women (772) were placed in a control group given standard antenatal care and advice, whilst the other half (783) were assigned to

eight, weekly, health trainer-led sessions. Participants were given a handbook with recommended foods, recipes and physical activity along with a DVD of an exercise regime safe for pregnancy, a pedometer and a log book for recording their weekly goals. Exercise focused on increasing the amount of walking at a moderate intensity, and the women were advised to adopt a healthier diet by swapping carb-rich foods for those with a lower glycaemic index and limiting saturated fat intake.

All the women took a standard oral glucose tolerance test, but researchers used more stringent WHO-recommended criteria (also known as IADSPG criteria) to diagnose gestational diabetes and implement treatment accordingly.

Overall, 332 (26%) of all participants were diagnosed with gestational diabetes, but the study found no significant difference between the standard and intervention groups. LGA infants made up 9% of the whole trial cohort, but no difference was observed between standard and intervention groups.

However, the intervention led to other changes in the intervention group such a lower glycaemic load and fat intake along with higher levels of activity which were associated with reductions in pregnancy weight gain (average weight was one pound or half a kilo lower in intervention group) and reduced adiposity (body fat).

Furthermore, researchers predicted that 17% of children would be LGA, but found levels to be closer to normal population levels (typically around 10%) which they believe to be due to the greater number of women diagnosed and treated for gestational diabetes using the WHO guidelines.

Professor Lucilla Poston, lead author from the Division of Women's Health at King's College London, says: 'Our study shows that an

intensive diet and exercise regime alone cannot help reduce the risk of developing gestational diabetes in obese women.

'However, using a more stringent diagnostic test for gestational diabetes meant we picked up more cases. We believe the greater number of women treated as a result of this test may explain why our study found a lower than anticipated incidence of LGA infants in all women. This has implications for the diagnosis of gestational diabetes in the UK as NICE have recently decided against adoption of the WHO (IADPSG) criteria.

'Whilst the intervention did not prevent gestational diabetes, the UPBEAT study provides a new and effective strategy to improve diet and physical activity in obese pregnant women adoptable in a UK healthcare setting. We are now following the mothers and children from this cohort to see whether changes in the mothers' diet and activity are sustained and have an effect on their health and that of their offspring.'

Provided by King's College London