

Diet and exercise do not reduce the risk of gestational diabetes

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The assumption that minimizing weight gain in obese pregnant women is advantageous for avoiding gestational diabetes has not been borne out. This was shown by a study conducted by MedUni Vienna's Division of

Endocrinology and Metabolism. Indeed, it might even be detrimental to the mother and the unborn child to restrict carbohydrate intake during pregnancy. These results have recently been published in the leading journal *Diabetes Care*.

Gestational diabetes manifests during pregnancy and, in most cases, disappears again—at least temporarily—immediately after the birth. It is assumed that in Austria, as in the rest of Europe, every seventh pregnant woman is affected by it. Unfortunately, no [accurate data](#) are available, because the maternity card (Mutter-Kind-Pass) data that are collected countrywide are not yet centrally evaluated. Estimates suggest that approximately one third of the women affected are also obese.

One of the major risk factors is obesity in the mother-to-be. The recommended pregnancy-related [weight gain](#) for [obese women](#) is 5—9 kg but many women greatly exceed these recommendations. In order to explore the possibilities and indicators for avoiding [gestational diabetes](#) in obese women, nutritional lifestyle interventions involving 436 women were evaluated as part of the EU DALI project (Vitamin D and Lifestyle Intervention for Gestational Diabetes), in which the Division of Endocrinology and Metabolism, led by endocrinologist Alexandra Kautzky-Willer, played a major role.

The project involved coaching a group of obese pregnant women to change their diet and to comply with five lifestyle measures: to reduce their intake of soft drinks, to reduce their intake of rapidly absorbed carbohydrates and fat and to increase their intake of protein and dietary fiber. The [control group](#) made no changes to their eating habits. A second group of women did regular physical activity and received corresponding advice. The control group took no physical exercise.

Although the weight gain of those women who followed the dietary advice was smaller, they also displayed higher fasting blood glucose

levels and a higher level of substances in the blood resulting from increased fat breakdown, such as fatty acids and ketones. This also correlated with reduced carbohydrate intake. Higher levels of free fatty acids were also found in the blood of the new-born babies. No changes were found in these metabolic markers in the other groups. However, according to the study, increased physical exercise was just as unsuccessful in preventing gestational diabetes as vitamin D supplementation.

In summary, it can be concluded that nutritional interventions have a significant influence upon maternal and infant metabolism. However, the advantage of smaller weight gain by restricting carbohydrates in obese pregnant women simultaneously results in increased fat breakdown and the associated release of free [fatty acids](#) into the blood of both mother and baby. The consequences of this are not yet clear and need to be further investigated.

Says Kautzky-Willer: "Gestational diabetes is the main risk factor for type II diabetes in women following childbirth and also increases the child's risk via fetal programming. The development of preventive measures both during and after pregnancy is an important goal in the fight to combat the [diabetes](#) epidemic. It could be that low-carb diets are not ideal for pregnant women."

Endocrinologist and co-author of the study, Jürgen Harreiter, adds: "The evidence for an ideal weight gain during pregnancy is still not definitive, particularly in the case of obese [women](#), and requires further studies."

More information: Jürgen Harreiter et al. Nutritional Lifestyle Intervention in Obese Pregnant Women, Including Lower Carbohydrate Intake, Is Associated With Increased Maternal Free Fatty Acids, 3- β -Hydroxybutyrate, and Fasting Glucose Concentrations: A Secondary Factorial Analysis of the European Multicenter, Randomized Controlled

DALI Lifestyle Intervention Trial, *Diabetes Care* (2019). [DOI: 10.2337/dc19-0418](https://doi.org/10.2337/dc19-0418)

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