

# Gestational diabetes can be prevented in high-risk women

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Gestational diabetes can be prevented by a simple, individualized lifestyle intervention in high-risk women. Credit: Heikki Kainulainen

The prevalence of overweight and obesity are increasing worldwide. Up to 60 percent of women of reproductive age are overweight or obese in the developed countries. Obesity is a risk factor for pregnancy complications such as GDM, which in turn is a well-known predictor of future diabetes. Gestational diabetes and maternal obesity may also increase the offsprings' predisposition to obesity and impaired glucose regulation. Thus there is a need for effective interventions aiming at preventing GDM. The results of previous GDM prevention studies have, however, been inconsistent and the effect on GDM incidence has been minor.

The Finnish gestational diabetes prevention study (RADIEL) was conducted between 2008 and 2014 in three maternity hospitals of the Helsinki metropolitan area and in South Karelia Central Hospital in Lappeenranta.

In total 293 [women](#) with a history of GDM or a prepregnancy body mass index  $> 30$  kg/m<sup>2</sup> were enrolled at less than 20 weeks of gestation (mean 13 gestational weeks). They were randomly allocated to an [intervention group](#) (n=155) or a control group (n=138). The participants in the intervention group received individualized counseling on diet, [physical activity](#) and weight control from trained study nurses and had one group meeting with dietitian. The control group received standard antenatal care.

GDM diagnosis was based upon a 75g oral glucose tolerance test at 24-28 weeks of gestation.

**Intervention reduced incidence of gestational diabetes by 39 percent in high-risk pregnant women**

There was a significant difference in GDM between the groups. The incidence of GDM was 13.9 percent in the intervention group and 21.6 percent in the control group.

Gestational weight gain was lower in the intervention group, and women in the intervention group also increased their leisure time physical activity more and improved their dietary quality compared with the women in the [control group](#).

"A simple and individualized lifestyle intervention reduced the incidence of [gestational diabetes](#) by 39 percent in high-risk pregnant women", says Doctor Saila Koivusalo from Helsinki University Hospital.

"One possible explanation for these excellent results is the high-risk status of the women recruited to the RADIEL study. In several previous lifestyle intervention studies the women recruited were only at a modest risk to develop GDM, or consisted of a heterogeneous group of women."

In the present study the intervention was targeted at high-risk women with a history of GDM and/or BMI > 30 kg/m<sup>2</sup>.

Pregnancy is an exceptional time for lifestyle changes, and given counseling must be individualized.

"In RADIEL we considered personal preferences of the participants in the physical activity counseling, which probably helped them to engage in activities. The counseling was also modified during pregnancy when needed. For example, if antenatal contractions occurred, and the participant was unable to exercise, the counseling focused more on dietary aspects. The main idea of the lifestyle advice provided was to be easily implemented and applicable to everyday life, Dr. Koivusalo describes.

The findings of this trial are promising, and results from a follow up study are expected in 2017.

"It will be interesting to see whether our results have consequences for the later health of the mother and the child", Dr. Koivusalo says.

**More information:** Saila B. Koivusalo, Kristiina Rönö, Miira M. Klemetti, Risto P. Roine, Jaana Lindström, Maijaliisa Erkkola, Risto J. Kaaja, Maritta Pöyhönen-Alho, Aila Tiitinen, Emilia Huvinen, Sture Andersson, Hannele Laivuori, Anita Valkama, Jelena Meinilä, Hannu Kautiainen, Johan G. Eriksson, Beata Stach-Lempinen. Gestational diabetes can be prevented by lifestyle intervention. The Finnish gestational diabetes prevention study (RADIEL) - a randomized controlled trial. *Diabetes Care*, 2015; [DOI: 10.2337/dc15-0511](https://doi.org/10.2337/dc15-0511)

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