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**Title of project:** Screening for gestational diabetes: Is implementation of new criteria justified in a Danish population?

## **ABSTRACT**

This study will evaluate the consequences of implementing new international criteria for screening and diagnosis of gestational diabetes mellitus (GDM) in Denmark.

**Background:** In 2013, WHO recommended a new international uniformly applicable screening procedure for GDM with universal screening and lower diagnostic thresholds. These recommendations were based on studies showing associations between the maternal blood glucose level and adverse outcomes for both mother and child at glycemic values below those of the original diagnostic thresholds. International studies have shown diverging repercussions on the prevalence of GDM when implementing the new procedure, indicating that the new recommendations may not be uniformly applicable. In the Danish population the prevalence of GDM has been estimated to increase from 3 % to 40 % as a result of new diagnostic thresholds. Additionally, implementing universal screening in Denmark means that 60,000 women yearly should be offered screening in contrast to the current Danish selective procedure that only screens women with preceding risk factors. Both universal screening and the new diagnostic thresholds will have major consequences for the Danish healthcare system, the Danish health economy and not least, the individual woman.

**Study design:** In this prospective observational longitudinal single center cohort study, we will perform GDM screening on all pregnant women scheduled to give birth at Nordsjællands Hospital, Hillerød, regardless of ethnic origin. Women < 18 years of age, with pre-existing diabetes or severe mental disease are excluded. Inclusion will continue until a total of 1,650 women are included. The GDM screening will be performed between week 24-28 of pregnancy using a two-hour 75 g oral glucose tolerance test with three blood samples as recommended by WHO.

**Outcomes:** The prevalence of GDM and the cost-effectiveness of four different screening scenarios will be evaluated. The four scenarios are constructed from combinations of selective vs universal screening and Danish vs WHO diagnostic thresholds.

**Impact:** The results will be used to identify a model for structured screening and diagnosis of GDM in Denmark that medicalise the fewest patients with the greatest possible health benefits within a realistic financial framework.