**Application number/Title:** 26981 - Genetics of gestational diabetes

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**Keywords provided by the Applicant PI to describe the research project:**
Gestational diabetes, GWAS

**Application Lay Summary:**

1a: Gestational diabetes (GDM) has profound influence on future health of mother and child. The mother has approximately 50% risk of developing T2DM within 10 years and the child is born with increased adiposity rendering it prone to the development of obesity, diabetes and cardiovascular disease in adult life.

We want to identify genetic factors with influence on GDM that could be suitable for risk prediction and/or therapeutic interventions. Furthermore, we want to see if previously identified gene variants associated with type 2 diabetes, glucose metabolism, and obesity can explain variation in glucose response in pregnancy given as GDM diagnosis.

1b: By gaining new knowledge on the genetics of GDM it can be possible to identify a high risk population suited for intervention and tailored prevention strategies. Furthermore, information that could link GDM to type 2 diabetes may be of interest as early life style interventions could postpone the development of the disease.

1c: We are currently working with two Oslo based cohorts and will have GWAS data from them shortly. Our goal is to use published GWAS data to generate allelic risk scores for traits such as type 2 diabetes, glucose metabolism, and obesity. We want to see how much of genetic variation in these traits that explain glucose response after a glucose test in pregnancy. Furthermore, after performing the GWAS and analysing our two cohorts separately, we plan to do a meta-analysis which would include the UKBB.

1d: We would like access to the full cohort to sort out whether there may be

separate genes involved in development of T2DM in women and gestational diabetes) vs. men. We will then compare SNPs associated with diabetes in men vs women without GDM diagnose vs women with GDM diagnose.