

# IMPROVED: A multicentre clinical study to develop a predictive blood test for pre-eclampsia – Improved Pregnancy Outcomes via Early Detection

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# IMPROVED

**The main goal of IMPROVED is to develop a clinically robust predictive blood test for pre-eclampsia, using innovative technologies and utilising novel metabolite and protein biomarkers.**

**Pre-eclampsia, fetal growth restriction and spontaneous preterm birth** are the major complications of late pregnancy. They are leading causes of illness and death in mothers and newborn babies. All three conditions can have lifelong consequences for the child. The child may have problems with brain development that can result in mild learning difficulties through to severe disabilities. Being born growth restricted predisposes the child to high blood pressure, heart attacks and diabetes as an adult. The social consequences and lifelong economic costs resulting from these conditions are enormous.

**Prevention of these health problems is of paramount importance to future mothers, fathers and children.**

**By offering first time mothers** accurate risk assessment for pre-eclampsia, personalised approach will radically impact the provision of antenatal care, both in Europe and the rest of the world. It will result in a reduction of clinical complications of the leading cause of maternal death in Europe.

#### **Biobank**

Establishing a high calibre biobank, augmented by accurate clinical metadata, will enable the development of screening tests and will also provide a vital resource for pregnancy researchers across Europe.

#### **The study will**

- Recruit 5000 first time pregnant women.
- Establish a high calibre biobank.
- Determine whether prototype predictive assays and algorithms translate to the clinical environment.
- Assess potential synergy of a combined metabolomic and proteomic approach.
- Progress regulatory approval and development of the selected test into the clinical arena.

#### **Participating centers**

- Karolinska Institutet, Karolinska University Hospital-Huddinge, Sweden
- Erasmus Medical Centre Rotterdam, Netherlands
- University of Liverpool, UK
- Keele University, UK
- University of Bonn, Germany
- University of Cologne, Germany
- University College Cork, Ireland

#### **Publication**

Study protocol: A multi-centre phase IIa clinical study of predictive testing for preeclampsia: improved pregnancy outcomes via early detection (IMPROVED). BMC Pregnancy and Childbirth 2013, 13:226.



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