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New generis - an ongoing subproject in the Norwegian mother and child cohort study (MoBa).

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Background: The impact of small quantities of both beneficial and harmful compounds in the maternal diet (e.g. flavonoids, environmental contaminants or substances generated from cooking food) on fetal development and child health is largely unknown. MoBa, a large pregnancy cohort aiming to include fathers, 100 000 women and their children, will enable the study of multiple diet – health relationships as well as gene-environment interactions. Several MoBa sub-projects are taking place within NewGeneris, an EU-funded integrated project within the European Union's 6th framework program (016320-2).

Objectives: The aim of NewGeneris is to develop and apply biomarkers in relation to dietary exposures and childhood disease. In WP9, we will specifically investigate if maternal exposure to dietary compounds results in fetal exposure which may lead to increased risk of immune disorders, infections and cancer later in childhood.

Methods: We will follow 200 MoBa mothers and their children from birth until the age of 3-4 years, starting in March 2007. During this period health data for the children will be collected. A food frequency questionnaire (FFQ) including 320 questions and answered by the mothers in mid-pregnancy will allow us to estimate mothers' exposure to the various compounds of interest. Analysis on biomarkers that may predict genotoxic and immunotoxic risks will be performed on cord blood and blood samples from mothers.

Results: The FFQ has been validated and overall, there is good agreement between reference- and test method for nutrients and non-nutrients, like flavonoids. Exposure data from the FFQ will be compared to the biomarker-analysis on blood samples and the children's health data.