

The impact of nutrients before and during pregnancy on the health of mothers and their babies

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Pregnant woman. Credit: University of Southampton

Researchers in the United Kingdom (Southampton), Singapore and New Zealand (Auckland) from the EpiGen Global Research Consortium are

to trial the use of a combination of nutrients and probiotics before and during pregnancy in a bid to improve the health of mothers and their babies.

Researchers at the Medical Research Council Lifecourse Epidemiology Unit (MRC LEU), University of Southampton, National University of Singapore (NUS) and National University Health System (NUHS), Singapore Institute for Clinical Sciences of the Agency for Science, Technology and Research (A*STAR), and the Liggins Institute and Auckland UniServices at the University of Auckland have developed the trial in collaboration with researchers at the Nestlé Research Center.

Increasing evidence shows the mother's nutritional state as she enters [pregnancy](#) is important for the baby's development. For example, if the mother has high blood sugar levels it can predispose the baby to having increased body fat in later life. The researchers will evaluate the benefits of the nutrients to the mother and baby. They will study the effects on maintaining healthy blood sugar, vitamin and mineral levels in the mother, and the potential to promote a healthy pregnancy and healthy growth and development of the child. In addition, the study will evaluate the impact on the activity of the baby's genes (so-called "epigenetic" mechanisms).

The study will recruit 1,800 women, before they conceive, across three centres in Southampton, Singapore and Auckland. Participants will be asked to drink the nutrients twice a day before pregnancy and to continue during pregnancy. The trial's full title is: Nutritional Intervention Preconception and during Pregnancy to maintain healthy glucosE levels and offspRing health (NiPPeR).

Chief Investigator Keith Godfrey, Professor of Epidemiology and Human Development at the MRC LEU, University of Southampton, comments: "The pre-conception phase is very important to ensure

women are getting the best nutrition in preparation for their pregnancy. By starting before conception, we hope that there will be better outcomes for the mother and baby. Should significant impact on maintaining health and supporting early development be demonstrated, it could have implications for health policy and strengthen arguments for the provision of pre-conceptional nutritional advice to the general population."

Associate Professor Chong Yap Seng, Principal Investigator of the study in Singapore and Executive Director of the Singapore Institute for Clinical Sciences states, "This study can help women prepare for pregnancy by optimising their nutritional status so that their newborn babies will have the best start to life." He adds, "Through this novel study, we can glean new insights into the long-term effects of pre-conception nutrition on the health of future offspring. This has significant potential to change the way we manage prenatal care and nutrition. Greater awareness has the potential to improve public health in the long run." Associate Professor Chong is a faculty member with the NUS Yong Loo Lin School of Medicine as well as Senior Consultant with the National University Hospital under NUHS.

The study is the latest trial in the partnership between the EpiGen Global Research Consortium and the Nestlé Research Center.

"We are excited to move into this next stage of our collaboration as it harnesses the knowledge generated thus far, to study a nutritional intervention aimed at improving the health of mothers and their children. The trial may also generate new information that can be used to advise women on the optimal nutrition before and during pregnancy for a healthy pregnancy outcome, and for the future [health](#) of their babies" says Thomas Beck, Head of the Nestlé Research Center.

More information: Women in Southampton interested in taking part

are invited to join the study by contacting the NiPPeR team at the MRC Lifecourse Epidemiology Unit, University of Southampton on 0800 032 31 300800 032 31 30 FREE or email nipper@mrc.soton.ac.uk

Provided by University of Southampton

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