

# Female diet alters the nutrient composition of fluid in the womb

19 February 2015



Scientists at the University of Southampton's Faculty of Medicine have discovered that maternal diet affects the nutrient composition of fluid in the womb of women and thus may aid in the development of nutritional interventions to support the very earliest stages of pregnancy.

The research carried out by Dr Alexandra Kermack, Dr Ying Cheong, Professor Nick Macklon and Dr Franchesca Houghton and published online in *Human Reproduction*, showed that the concentrations of [amino acids](#) in the uterine fluid of non-pregnant women were affected by diet: a less [healthy diet](#) was associated with altered concentrations of amino acids compared to those with a healthy diet.

Dr Franchesca Houghton, Associate Professor at the University of Southampton, was the senior author of the paper. She comments "This is the first report showing that diet can alter the [nutrient composition](#) of human uterine fluid, which nurtures the early embryo. Since we know that the environment in which an early embryo develops is

important for future health, recognising that it can be altered by diet is of great significance.

"In this study, we concentrated on amino acids as these have many important roles for example as building blocks of protein, as a source of energy and antioxidants. At this stage, our findings are not trying to give dietary advice to women but further research is now required to determine the impact of diet around the time of conception, on the uterine environment and [embryo development](#)."

The research was funded by the MRC, the National Institute for Health Research and the University of Southampton.

**More information:** "Amino acid composition of human uterine fluid: association with age, lifestyle and gynaecological pathology", by Alexandra J Kermack et al. [DOI: 10.1093/humrep/dev00](https://doi.org/10.1093/humrep/dev00)

Provided by University of Southampton

APA citation: Female diet alters the nutrient composition of fluid in the womb (2015, February 19)  
retrieved 21 May 2021 from <https://medicalxpress.com/news/2015-02-female-diet-nutrient-composition-fluid.html>

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