

Secrets in small blood vessels could reveal the risks of heart disease and diabetes

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Researchers at the University of Southampton together with colleagues at King's College London have embarked on a unique study that will shed new light on the risk of heart disease and diabetes in later life.

A healthy [diet](#) for pregnant women is important for the health of the baby. Having a [poor diet](#) in pregnancy, such as one that is too high in fat, may cause problems in the offspring's later life. However, the exact mechanisms controlling the effect of diet during pregnancy on the [long-term health](#) of children are not well understood.

While other studies have investigated the impact of a mother's diet on the function of large [blood vessels](#) in her offspring, this study, led by Geraldine Clough, Professor of Vascular Physiology at the University of Southampton, is breaking new ground. By studying adult mouse offspring the researchers set out to investigate the effects of a high fat diet during a woman's pregnancy on the networks of small blood vessels - called the microcirculation – and to establish whether these networks are susceptible to damage from a poor maternal diet.

Professor Clough explains: "These small blood vessels, which are ten times smaller than a [human hair](#), provide [vital organs](#) such as the heart, brain and muscles with important nutrients and oxygen. They are known to be altered in adult diseases such as obesity and diabetes but it is not known how they are influenced by maternal diet and so this work will give further insight into how an adverse high fat diet during pregnancy can increase the risk of adult disease in offspring.

"Secondly, since this microcirculation can be easily (and non-invasively) measured in humans then our study will inform us about how we can better use such measurements to give improved advice to children, mothers and women of child bearing age."

The study is being funded by the British Heart Foundation.

Dr Shannon Amoils, Research Advisor at the BHF, comments: "We're very pleased to announce this new research award of more than £100,000, which will help us gain a greater insight into how a child's health can be affected by their mother's diet during pregnancy.

"We know that if a mother eats a healthy diet during pregnancy, the benefits for her child can continue – even into adulthood and middle age. This research in mice is looking at how the function of small blood vessels is affected by a poor [maternal diet](#). This could help explain how eating poorly in [pregnancy](#) increases the risk of cardiovascular and metabolic disease, like high blood pressure and diabetes, in the offspring in later life."

Provided by University of Southampton

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