

Mother's diet influences baby's allergies -- new research

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A possible link between what a mother eats during pregnancy and the risk of her child developing allergies has been identified in new research published in this month's *The Journal of Physiology*.

The research found that if a mother's [diet](#) contains a certain group of [polyunsaturated fatty acids](#) (PUFAs) – such as those found in fish, walnut oil or flaxseed – the baby's gut develops differently. The PUFAs are thought to improve how gut immune cells respond to bacteria and foreign substances, making the baby less likely to suffer from allergies.

Until now, several clinical trials have shown that fish and walnut oil supplementation in pregnant women reduces the risk of [allergy](#) in their children, but the mechanism was unknown.

"There is intense research interest in maternal diet during [pregnancy](#). In the western diet, the group of polyunsaturated [fatty acids](#) that we have shown to help gut function are actually disappearing – our dietary intake of fish and nut oils is being replaced by corn oils which contain a different kind of fatty acid". Said Dr Gaëlle Boudry, of the INRA research institute in Rennes, France.

"Our study identifies that a certain group of polyunsaturated fatty acids – known as n-3PUFAs – causes a change in how a baby's gut develops, which in turn might change how the gut immune system develops. These changes are likely to reduce the risk of developing allergies in later life."

The team found that supplementing a mother's diet with n-3PUFA caused the new-born's gut to become more permeable. A more permeable gut enables bacteria and new substances to pass through the lining of the gut into the bloodstream more easily. These new substances then trigger the baby's immune response and the production of antibodies.

"The end result is that the baby's immune system may develop and mature faster – leading to better immune function and less likelihood of suffering allergies," added Dr Boudry.

This research adds to previous studies which have shown that an intake of n-3 PUFAs during pregnancy increases gestational length and maturation of the central nervous system of a baby and that their performance on mental tasks also seemed to be improved in childhood.

"Other studies have found that a diet containing fish or walnut oil during pregnancy may make your baby smarter – our research adds to this, suggesting such supplements also accelerate the development of a healthy [immune system](#) to ward off food allergies."

In terms of next steps, the team's findings were based on piglets so research will continue to see if they translate to humans. The porcine intestine is an excellent model of the human gut however, so they are hopeful that the findings can be extrapolated. The team also plans to investigate whether the apparent [gut](#) function-boosting effects of n-3PUFA that they have identified in new-borns extends into later life.

Provided by Wiley

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