

Limiting polyunsaturated fatty acid levels in pregnancy may influence body fat of children, researchers find

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Atlantic mackerel is high in omega 3. The higher the diet of level of n-3 (omega 3) the less fat and more muscle and bone in the baby.

(Medical Xpress)—Southampton researchers have demonstrated that mothers who have higher levels of n-6 polyunsaturated fatty acids (PUFAs), which are found in cooking oils and nuts, during pregnancy have fatter children.

The study, carried out by the Medical Research Council (MRC) Lifecourse Epidemiology Unit, University of Southampton, assessed the fat and muscle mass of 293 boys and girls at four and six years, who are part of the Southampton Women's Survey (SWS), a large prospective mother-offspring cohort.

Their assessments were compared to the concentrations of PUFAs which were measured in blood samples collected from their mothers during [pregnancy](#).

The study, published in the January edition of *Journal of Clinical Endocrinology and Metabolism*, found that children who were born to mothers who had had greater levels of n-6 PUFAs during pregnancy had greater [fat mass](#).

Dr Nicholas Harvey, Senior Lecturer at the MRC Lifecourse Epidemiology Unit, University of Southampton, who led the research with Dr Rebecca Moon, Clinical Research Fellow, comments: "Obesity is a rising problem in this country and there have been very few studies of mother's fatty acid levels during pregnancy and offspring fat mass. These results suggest that alterations to [maternal diet](#) during pregnancy to reduce n-6 PUFAs intake might have a beneficial effect on the body composition of the developing child."

Results from the study also showed weaker associations between a mother's levels of n-3 PUFAs, more commonly known as omega 3 and found in [fish oil](#), and muscle mass in their offspring – the higher the level of n-3 the less fat and more muscle and bone in the baby.

This could suggest that a pregnancy supplementation strategy would be beneficial. However Dr Moon says: "n-6 and n-3 PUFAs seem to act in opposite directions on fat mass; previous trials have attempted to use n-3 supplementation to reduce fat mass, but our results suggest that such an approach might work best when combined with a reduction in dietary n-6 intake."

Professor Cyrus Cooper, Professor of Rheumatology and Director of the MRC Lifecourse Epidemiology Unit, University of Southampton adds: "This study forms part of a larger programme of research at the MRC Lifecourse Epidemiology Unit and University of Southampton in which we are seeking to understand how factors such as diet and lifestyle in the mother during pregnancy, and of the child in early life, influence a child's body composition and bone development. This work should help us to design interventions aimed at optimising [body composition](#) in childhood and later

adulthood and thus improve the health of future generations."

More information: A copy of the paper: "Maternal plasma polyunsaturated fatty acid status in late pregnancy is associated with offspring body composition in childhood," is available at jcem.endojournals.org/content/98/1/299.abstract

Provided by University of Southampton

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