

You are what your grandmother ate: Intergenerational impacts of prenatal nourishment

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A study published online in *The FASEB Journal* shows that parents' own prenatal environment has a detectable impact on their children's weight. Mothers who were malnourished in the womb tend to produce smaller babies, while a father's malnourishment in utero results in his offspring being smaller by the time they are 2 years old. The findings come from an experiment of nature in rural Gambia that ruled out confounding socioeconomic factors that could influence babies' growth across generations.

"Nutritional interventions such as dietary supplementation programs in poor populations are frequently undermined by an apparent absence of immediate impact," said Andrew M. Prentice, Ph.D., , professor within the MRC Unit The Gambia and MRC International Nutrition Group at the London School of Hygiene and Tropical Medicine in London. "This study shows that it may take several generations to eliminate growth failure and stunting because of these intergenerational influences."

Researchers exploited an experiment of nature in rural Gambia, where a single annual rainy season creates a harvest and a hungry season. Mothers for whom the latter part of pregnancy is in the hungry season tend to have smaller babies. The knowledge that mothers and fathers born in the hungry season were nutritionally stressed in utero allowed researchers to study how parents' own fetal nutrition affects the growth of their offspring. With a Gambian cohort of infants born between 1972

and 2011, the team used 31 multiple regression to test whether parental season of birth predicted offspring birth weight, length, and/or height by the time they were 2 years old.

"Here we have an unfortunate climatological situation being productively mined for hopeful future intervention" said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*.

Provided by Federation of American Societies for Experimental Biology

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