

Low-birth-weight children are particularly vulnerable to environmental influences

September 30 2014

Low birth weight children are more vulnerable to environmental influences than infants born with normal weight. When brought up with a great deal of sensitivity, they will be able to catch up in school, but on average they will not become better students than normal birth weight children. This result, provided by an international psychologist team, has confirmed the so-called diathesis-stress model of development for low birth weight populations. The researchers report their findings in the *Journal of Child Psychology and Psychiatry*.

Theories on how environmental factors affect development

Psychological theories assume that some [children](#) are more susceptible to [environmental influences](#) than others – regardless if those influences are positive or negative. Unlike the diathesis-stress model, the new differential susceptibility model assumes that children who are particularly susceptible will outperform less susceptible children under optimal environmental conditions, even though their increased susceptibility may be due to a risk factor such as difficult temperament. Together with colleagues from the UK and the USA, Dr Julia Jäkel from the work unit Developmental Psychology at the Ruhr-Universität Bochum analysed which of these two models best represents [low birth weight](#) children's development.

Data of 922 children analysed

In their analysis, the researchers studied 922 children with a birth weight between 600 and 5140 grams. The data were derived from the Bavarian Longitudinal Study. The study team had assessed maternal sensitivity via standardised behaviour observations of mother-child interactions at age six years. At age eight, all children underwent a series of standardised tests assessing their mathematic, reading and writing competencies. The researchers compared the academic performance of children with a very low birth weight, i.e. less than 1500 grams, resp. low birth weight (1500 to 2499 grams), with the performance of children with a normal [birth weight](#) of at least 2500 grams.

Makes evolutionary sense

The differential susceptibility model has an evolutionary background. "Even if all parents in one generation would raise their children in a completely wrong way, every individual child would develop differently, because some of them would not be affected by bad parenting," says Dr Julia Jäkel. "This is what ensures the survival of our species."

More information: J. Jäkel, M. Pluess, J. Belsky, D. Wolke (2014): Effects of maternal sensitivity on low birth weight children's academic achievement: a test of differential susceptibility vs. diathesis stress, *Journal of Child Psychology and Psychiatry*, [DOI: 10.1111/jcpp.12331](https://doi.org/10.1111/jcpp.12331)

Provided by Ruhr-Universitaet-Bochum

Citation: Low-birth-weight children are particularly vulnerable to environmental influences (2014, September 30) retrieved 19 April 2024 from <https://medicalxpress.com/news/2014-09-low-birth-weight-children-vulnerable-environmental.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.