

Preterm children at increased risk of having maths problems

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Researchers have found that preterm children are at an increased risk of having general cognitive and mathematic problems.

The new study by the University of Warwick and Ruhr-University Bochum, published in the *Journal of Pediatrics*, sought to understand the relationship between [preterm birth](#) and dyscalculia.

Dyscalculia, a learning disorder which involves frequent problems with everyday arithmetic tasks, is diagnosed when children do worse in maths than would be expected based on their general intelligence.

Study co-author Professor Dieter Wolke from the University of Warwick explained, "Mathematic impairment is not the same as dyscalculia. A child with both low IQ and low mathematic abilities can

have general mathematic impairment without suffering from dyscalculia".

The study's results, which looked at 922 children between the ages of seven and nine, showed that there is no direct correlation between preterm births and dyscalculia. However, the authors showed that being small-for-[gestational-age](#) is an indicator of whether a child is likely to have dyscalculia.

Children who are born very preterm, before 32 weeks, of gestational age have a 39.4% chance of having general mathematic impairment compared to 14.9% of those born at term (39 to 41 weeks), which translates into a significantly increased odds ratio of 3.22 (after controlling for child sex, socioeconomic background and small-for-gestational-age birth).

In contrast, very [preterm children](#)'s risk of being diagnosed with dyscalculia was with an odds ratio of 1.62 (22.6%) compared with term controls (13.7%) not significantly increased.

"What this study has shown is that preterm children are not at an increased risk of having dyscalculia, but their risk may be increased if they were born small for gestational age", says Professor Wolke.

Dr Julia Jaekel from the Ruhr-University Bochum, co-author of the study, points out that "In general, preterm and small-for-gestational-age children often have mathematic problems and, even if they are not diagnosed with dyscalculia, they may need special help in school to not be left behind academically.

Through the right support teachers and parents can help their children understand the problem and learn ways to improve their maths skills. Just as dyslexia doesn't mean that children won't be able to read and

write to a high standard, being diagnosed with [dyscalculia](#) may not stop a child from gaining a strong understanding of mathematics.

"Teachers should be aware of these children's problems and need to work on ways of math instruction that help preterm children deal with the high cognitive workload and integration of information required for mathematic tasks in school", says Prof Wolke.

More information: The study, Preterm Birth and Dyscalculia, is published by the *Journal of Pediatrics*: [www.jpeds.com/article/S0022-34... \(14\)00097-3/abstract](http://www.jpeds.com/article/S0022-34... (14)00097-3/abstract)

Provided by University of Warwick

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