

Vitamin D levels in pregnant women could be linked to some learning disabilities in children

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Learning disabilities are more common in children who were conceived between January and March – the time of year when there is insufficient sunlight to produce vitamin D – according to a new study led by the University of Glasgow.

The study, which is published in the *American Journal of Epidemiology*, was written in [collaboration](#) with [researchers](#) from the University of Cambridge, the NHS and the Scottish Government. It found that 8.9% of [children](#) who had been conceived between January and March had learning disabilities. In contrast only 7.6% who had been conceived between July and September had learning disabilities.

The overall difference was due to autism, intellectual difficulties and learning difficulties such as dyslexia. There were no seasonal patterns for other causes of learning difficulties such as visual or hearing problems, or physical illness.

Although the researchers did not measure Vitamin D levels in this particular study, the authors have suggested that it is "the most plausible explanation for the trend".

The first three months of pregnancy are an important [time](#) for brain development.

In the UK, there is insufficient sunlight in January to March for pregnant mothers to produce vitamin D. Previous experiments have shown that a lack of vitamin D can impair brain development.

Professor Jill Pell, Director of the Institute of Health and Wellbeing, said: "The results of this study show that if we could get rid of the seasonal variation, we could prevent 11% of cases of learning disabilities."

The children in this study were born prior to the 2012 guidelines suggesting that all pregnant women should take vitamin D supplements, in order to prevent other conditions such as rickets.

Professor Pell said: "It is important that pregnant women follow the advice to take vitamin D supplements and also that they start supplements as early in pregnancy as possible; ideally when they are trying to get pregnant."

The research linked health and education data collected routinely from across Scotland in order to study more than 800,000 children who attended Scottish schools between 2006 and 2011.

Children with learning [disabilities](#) need life-long support from family, the health service and education sector.

Professor Gordon Smith, Head, Department of Obstetrics and Gynaecology, Cambridge University, said: "If vitamin D levels do indeed explain the seasonal fluctuations observed in this study, we would hope that widespread compliance with the advice would lead to loss of this variation, and would have a downward effect on overall rates of special educational needs.

"Although the current study did not directly measure vitamin D, it

remains perhaps the most plausible explanation for the trend. Hence, these findings underline the importance of health professionals recommending vitamin D, and the importance of women complying with the treatment to optimise their chances of a healthy child."

The authors noted that an increased risk of flu infections early in pregnancy could also be a factor in the statistical variation, as January to March are the peak months for flu.

More information: Month of conception and learning disabilities: A record-linkage study of 801,592 children. *American Journal of Epidemiology*. [dx.doi.org/10.17863/CAM.1275](https://doi.org/10.17863/CAM.1275)

Provided by University of Glasgow

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