Vitamin D Status at Birth and Future Risk of Attention Deficit/Hyperactivity Disorder (ADHD).


Abstract
OBJECTIVE:
To investigate whether children with Attention Deficit/Hyperactivity Disorder have lower levels of Vitamin D3 at birth than matched controls.

MATERIAL:
Umbilical cord blood samples collected at birth from 202 children later diagnosed with Attention Deficit/Hyperactivity Disorder were analysed for vitamin D content and compared with 202 matched controls. 25-OH vitamin D3 was analysed by liquid chromatography tandem mass spectrometry.

RESULTS:
No differences in cord blood vitamin D concentration were found between children with Attention Deficit/Hyperactivity Disorder (median 13.0 ng/ml) and controls (median 13.5 ng/ml) (p = 0.43). In a logistic regression analysis, Attention Deficit/Hyperactivity Disorder showed a significant association with maternal age (odds ratio: 0.96, 95% confidence interval: 0.92-0.99) but not with vitamin D levels (odds ratio: 0.99, 95% confidence interval: 0.97-1.02).

CONCLUSION:
We found no difference in intrauterine vitamin D levels between children later developing Attention Deficit/Hyperactivity Disorder and matched control children. However, the statistical power of the study was too weak to detect an eventual small to medium size association between vitamin D levels and Attention Deficit/Hyperactivity Disorder.