

Low Maternal Vitamin D Status may Increase Risk of ADHD in Children

Source: *Vitamin D Council*



A recent study conducted by the University of Southern Denmark found that low maternal vitamin D levels were associated with a higher risk of ADHD among young children.

Attention deficit hyperactivity disorder (ADHD) is one of the most common neurobehavioral disorders that children develop. The prevalence of this condition is estimated to be 11% in the US and is on the rise.

Researchers believe that vitamin D may play a role in the development in this condition. In fact, vitamin D receptors are located throughout the brain, including areas of the brain responsible for psycho-motor function and language development in infants and children.

Although research has shown that low vitamin D levels are associated with ADHD in children, there is a lack of evidence supporting the role of maternal vitamin D status in the development of ADHD. Therefore, researchers recently aimed to investigate this relationship in a large cohort study.

The researchers included a total of 2,549 pregnant women from Denmark between 2010-2012. The participants donated the umbilical cord blood, allowing the researchers to evaluate the 25(OH)D levels of the infants at birth. When the children reached between the ages of 2-4 years, the parents completed the Child Behaviour Checklist, a tool commonly used to identify problem behavior in children.

A total of 1,233 mothers had completed the checklist, and thus, were included in the analysis. The researchers compared the children's vitamin D levels and ADHD symptoms.

Here is what they found:

- The average age of the children assessed was 2.7 years.
- The highest ADHD scores were associated with lower cord 25(OH)D levels, low maternal age and education level and smoking or alcohol consumption during pregnancy.
- Vitamin D levels above 10 ng/ml (25 nmol/l) had lower ADHD scores than those with vitamin D levels below 10 ng/ml ($p = 0.035$).
- The adjusted odds of scoring above the 90th percentile on the Child Behaviour Checklist for ADHD decreased with every 4 ng/ml (10 nmol/l) increase in cord 25(OH)D.

The researchers concluded,

“An inverse association between cord 25(OH)D and attention deficit hyperactivity disorder symptoms in toddlers was found, suggesting a protective effect of prenatal vitamin D.”