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## **Marginal maternal vitamin B12 status increases the risk of offspring with spina bifida.**

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### **Abstract**

#### **Objective**

The purpose of this study was to investigate B vitamins and homocysteine as risk factor for offspring with spina bifida.

#### **Study Design**

Blood samples from 45 mothers and their children with spina bifida and from 83 control mothers and their children were obtained to determine the levels of serum and red blood cell folate, serum vitamin B(12), whole blood vitamin B(6), and total plasma homocysteine.

#### **Results**

In the case mothers, the vitamin B(12) concentration was 21% lower (95% CI, 8%-33%) compared with control mothers. Unlike folate, vitamin B(6,) and homocysteine, a vitamin B(12) concentration of  $\leq 185$  pmol/L was associated with a 3.5-fold (95% CI, 1.3- 8.9) spina bifida risk. In children, no differences in folate, vitamin B(6), vitamin B(12), and homocysteine concentrations were observed after adjustment for the child's age.

#### **Conclusion**

A marginal maternal vitamin B(12) status increases the risk of an offspring with spina bifida.

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