Abstract


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BACKGROUND: Maternal prenatal folate status has been linked to neurodevelopmental disorders, but the association with child emotional and behavioral problems is unclear.

OBJECTIVES: We assessed the association of maternal folate status during pregnancy with child emotional and behavioral problems. Also, we examined whether any association between folate status and child problems is a consequence of maternal folic acid supplement use or variation in maternal MTHFR genotype.

DESIGN: Within a population-based cohort, we measured maternal plasma folate concentrations in early pregnancy and assessed folic acid supplement use by questionnaire. Mothers of European descent were genotyped for the MTHFR 677 C→T polymorphism. Child emotional and behavioral problems were assessed with the Child Behavior Checklist at 3 y in 3209 children.

RESULTS: Children of mothers with prenatal folate deficiency were at higher risk of emotional problems (OR: 1.57; 95% CI: 1.03, 2.38) but not behavioral problems (OR: 1.00; 95% CI: 0.64, 1.56) after adjustment for confounders. A higher risk of emotional problems was also found in children whose mothers started using folic acid supplements late or did not use supplements at all (OR: 1.45; 95% CI: 1.14, 1.84) than in children whose mothers started periconceptionally. However, low plasma folate concentrations only partly explained this association (OR: 1.38; 95% CI: 1.08, 1.78). Although related to plasma folate concentrations, maternal MTHFR genotype did not explain the association of folate status with offspring emotional problems.

CONCLUSION: Low maternal folate status during early pregnancy is associated with a higher risk of emotional problems in the offspring.

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