

## Vitamins in the Prevention of Neural Tube Defects

Recently, a randomized, double-blind prevention trial was completed by the Medical Research Council (MRC) Vitamin Research Group to determine whether periconceptual supplementation with folic acid (one of the vitamins in the B group) or a mixture of 7 other vitamins (A, D, B1, B2, B6, C, and nicotinamide) could help to prevent neural tube defects (NTDs) such as anencephaly, spina bifida, and encephalocele. A 72% protective effect was found for folic acid supplementation; the other vitamins showed no significant effect.

It has long been suspected that diet plays a role in the causation of NTDs, which are among the most common severe congenital malformations. The possibility that folic acid might be important was raised as early as 1964.<sup>1</sup> In 1980 and 1981, 2 intervention studies<sup>2,3</sup> were published in which periconceptual vitamin supplementation was given to women who had experienced a previous NTD pregnancy and were thus at increased risk for another such pregnancy.<sup>2</sup> These 2 studies yielded somewhat equivocal results, but suggested that folic acid or other vitamin supplementation might indeed reduce the risk of recurrence. The MRC group's randomized, double-blind trial with a factorial design utilizing data from 1,195 at-risk

pregnancies from 33 centers in 7 countries removes concerns regarding a lack of randomized controls or the introduction of bias. It has thus been concluded that folic acid supplementation can now be firmly recommended for all women who have had an affected pregnancy and that public health measures should be taken to ensure that the diet of all women of childbearing age contains an adequate amount of folic acid.

Wald N, Sneddon J, Donsem J, et al. *Lancet* 1991;338:131.

### References

1. Hibbard ED, Smithells RW. *Lancet* 1965;1:1254.
2. Smithells RW, et al. *Lancet* 1980;1:339.
3. Laurence KM, et al. *Br Med J* 1981;282:1509.

**Editor's comment:** *Definitive results identifying folic acid prophylaxis as an effective preventive measure for NTDs are indeed welcome. Routine periconceptual folic acid supplementation for all women planning to conceive a child should now become standard practice, and it represents a powerful addition to the arsenal of preventive health care.*

Judith G. Hall, MD