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## The absence of a relation between the periconceptional use of vitamins and neural-tube defects. National Institute of Child Health and Human Development Neural Tube Defects Study Group.

Mills JL, Rhoads GG, Simpson JL, Cunningham GC, Conley MR, Lassman MR, Walden ME, Depp OR, Hoffman HJ.

# Source

National Institute of Child Health and Human Development, Bethesda, MD 20892. Abstract

Whether taking multivitamins or folate around the time of conception can reduce a woman's risk of having a child with a **neural-tube** defect is controversial. To investigate this question, we examined the **periconceptional** use of vitamin supplements by women who had a conceptus with a **neural-tube** defect (n = 571), women who had had a stillbirth or a conceptus with another malformation (n =546), and women who had had a normal conceptus (n = 573). Women with conceptuses with neural-tube defects were identified either prenatally or postnatally and were matched to control mothers for gestational age. To minimize recall bias, we interviewed nearly all the women within five months of the diagnosis of a birth defect or the birth of the infant (mean, 84 days); information on vitamin use was obtained by an interviewer who was unaware of the outcome of pregnancy. The rate of **periconceptional** multivitamin use among the mothers of infants with **neural-tube defects** (15.8 percent) was not significantly different from the rate among mothers in either the abnormal or the normal control group (14.1 percent and 15.9 percent, respectively). After adjustment for potential confounding factors, the odds ratio for having an infant with a neural-tube defect among women classified as having had full supplementation with multivitamins was 0.95 as compared with the mothers of the abnormal infants (95 percent confidence interval, 0.78 to 1.14) and 1.00 as compared with the mothers of normal infants (95 percent confidence interval, 0.83 to 1.20). There were no differences among the groups in the use of folate supplements. The adjusted odds ratio for having an infant with a **neural-tube** defect among those receiving the recommended daily allowance of folate was 0.97 as compared with the mothers of abnormal infants (95 percent confidence interval, 0.79 to 1.18) and 0.98 as compared with the mothers of normal infants (95 percent confidence interval, 0.80 to 1.20). We conclude that the **periconceptional** use of multivitamins or folatecontaining supplements by American women does not decrease the risk of having an infant with a neural-tube defect.

## **Comment in**

- <u>N Engl J Med. 1989 Aug 17;321(7):464-6.</u>
- <u>N Engl J Med. 1990 Apr 12;322(15):1082-4.</u>

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#### ORIGINAL ARTICLE ARCHIVE

# The Absence of a Relation between the Periconceptional Use of Vitamins and Neural-Tube Defects

James L. Mills, M.D., M.S., George G. Rhoads, M.D., M.P.H., Joe Leigh Simpson, M.D., George C. Cunningham, M.D., Mary R. Conley, M.A., Melinda R. Lassman, M.A., M.S., Margaret E. Walden, B.A., O. Richard Depp, M.D., Howard J. Hoffman, M.A., and National Institute of Child Health and Human Development Neural Tube Defects Study Group\* N Engl J Med 1989; 321:430-435 August 17, 1989

#### Abstract

Whether taking multivitamins or folate around the time of conception can reduce a woman's risk of having a child with a neural-tube defect is controversial. To investigate this question, we examined the periconceptional use of vitamin supplements by women who had a conceptus with a neural-tube defect (n = 571), women who had had a stillbirth or a conceptus with another malformation (n = 546), and women who had had a normal conceptus (n = 573). Women with conceptuses with neural-tube defects were identified either prenatally or postnatally and were matched to control mothers for gestational age. To minimize recall bias, we interviewed nearly all the women within five months of the diagnosis of a birth defect or the birth of the infant (mean, 84 days); information on vitamin use was obtained by an interviewer who was unaware of the outcome of pregnancy.

The rate of periconceptional multivitamin use among the mothers of infants with neural-tube defects (15.8 percent) was not significantly different from the rate among mothers in either the abnormal or the normal control group (14.1 percent and 15.9 percent, respectively). After adjustment for potential confounding factors, the odds ratio for having an infant with a neural-tube defect among women classified

#### MEDIA IN THIS ARTICLE



Social and Demographic Characteristics of the Mothers, According to Study Group.\*

#### TABLE 2



Use of Multivitamin Supplements and Fortified Cereals by the Mothers, According to Study Group.\*