

Changes in Spina Bifida Lesion Level After Folic Acid Fortification in the US

After mandatory folic acid fortification in enriched cereal grain products began in the US in 1999, the Centers for Disease Control (CDC) was interested in determining if the severity of spina bifida cases was altered by the fortification. Six active population-based birth defects programs across the US provided data on cases of spina bifida for the prefortification period (1992-1996) and the postfortification period (1999-2016).

Varying years of data were provided by these programs. Information on spina bifida cases included both verbatim text descriptions of the spina bifida diagnoses from medical records as well as extracted spina bifida diagnostic codes. Prevalence ratios (PRs) were calculated by comparing the lesion location – severe upper-level lesions (cervical or thoracic) versus less severe lower-level lesions (lumbar or sacral) between the prefortification and postfortification periods.

A total of 2,593 cases (out of 7,816,062 live births) met the inclusion criteria for the study, including 573 cases from the prefortification period and 2,020 cases from the postfortification period. Overall the prevalence of spina bifida declined by 23% with similar reductions seen across the early, mid, and recent postfortification period compared to the prefortification period. Severe, upper-level lesions decreased by 72% from the pre- to postfortification periods, whereas the prevalence of less severe, lower-level lesions remained stable.

In conclusion, the prevalence and severity of spina bifida cases decreased after mandatory folic acid fortification in the US. However, further studies are needed to better understand the potential effect of folic acid on the severity of spina bifida.

[*Changes in Spina Bifida Lesion Level after Folic Acid Fortification in the US. Mai CT, et al. J Pediatr. 2022. PMID: 35772508](#)



Recommendation for Increasing Folic Acid

The Neural Tube Defect Prevention Program at the Greenwood Genetic Center has proposed that ***the standard preventive dose of folic acid for all women of childbearing age in South Carolina be increased to 4 mg/day during the 3 months prior to conception and the first month after conception.***

South Carolina is a high-risk state for these defects, and 4 mg/day is currently the dose recommended by the CDC for high risk pregnancies (those with a prior affected infant).

This increased dose should be used with two caveats:

- (1) The additional folic acid should be prescribed as folic acid alone rather than by increasing the number of multivitamins, as the dose of other vitamins may become excessive. This increased dose of folic acid may be used in addition to a single multivitamin with 0.4 mg folic acid per day.
- (2) If any side effects should occur, women should discontinue the 4 mg/day dose and return to the multivitamin with only 0.4 mg/day or prenatal vitamin with 0.8 mg/day alone.



Governor Declares January 2023 as Birth Defects Awareness Month

January 2023 has been designated by SC Governor Henry McMaster as Birth Defects Awareness Month in South Carolina.

As part of Birth Defects Awareness Month, billboards have been placed throughout South Carolina in an effort to increase awareness about the importance of taking a multivitamin containing folic acid to prevent birth defects of the brain and spine.

The message will be continued throughout the year through public lectures, science courses, press releases, and exhibits.

Greenwood Genetic Center

101 Gregor Mendel Circle

Greenwood, SC 29646

Thinking about having a baby?

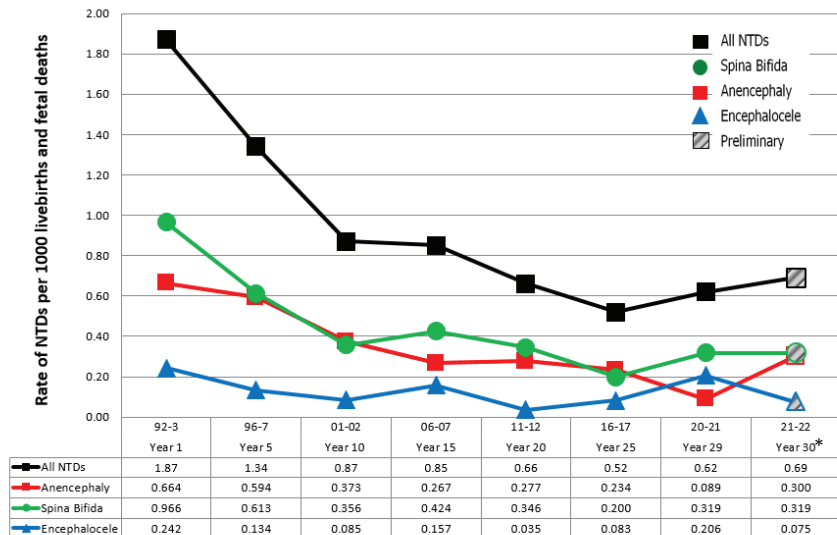


SC Department of Disabilities and Special Needs • SC Department of Health and Environmental Control • Greenwood Genetic Center

You need more **FOLIC ACID** than you think!

Call your doctor today or contact the SC Birth Defects Prevention Program
1-800-6-SOMEDAY

Neural Tube Defects in South Carolina (1992-2022)



NTDs in SC During Project Year 30

(October 1, 2021 - September 30, 2022)

Cases by type of NTD:

Spina bifida	17 (46%)
Anencephaly	5 (14%)
Encephalocele	15 (41%)

Detection method:

Ultrasound	36
Delivery	1

The case detected at delivery was a small occipital encephalocele born to a mother with late prenatal care.

Geographic Distribution

Region I (Piedmont)	10
Region II (Midlands)	14
Region III (Coastal)	13

**Year 30 data is preliminary pending final review*

Contact Us:

Staff members at the office of the South Carolina Birth Defects Prevention Program will be happy to assist your office in any way to assure that your patients have information regarding prevention of these serious birth defects. We now have literature on NTDs and NTD prevention available in English and Spanish.

Dietary recommendations with foods that are high in folic acid, along with examples of menus using this information has proven to be a very helpful tool especially with Hispanic communities. **FREE** multivitamins are also available to all physician offices and women of childbearing age.

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Contributions to support the SC Birth Defects Prevention Program may be made through the Greenwood Genetic Center Foundation at www.ggc.org/foundation or (864) 388-1813.