

NTD NEWSLETTER

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ISOLATED NTDS CONTINUE TO OCCUR IN THE ERA OF FOLIC ACID FORTIFICATION

Three decades ago South Carolina had twice the national average of neural tube defects (NTDs). The pioneering research of Dick Smithells in the 1980s and the confirmatory studies of the UK's Medical Research Council and Andrew Czeizel in the early 1990s made it clear that enhanced folic acid intake prior to conception would lower the occurrence and recurrence rates of NTDs.

On the basis of these findings, South Carolina began a Neural Tube Defect Prevention Program in 1992, initially following the CDC's recommendations for the use of folic acid supplementation and later by promoting the fortification of cereal grain flours with folic acid (see boxes below). These efforts resulted in a 60-70% reduction in these severe defects of the spine and brain.

1991 - 1992

USPHS Recommendation for Folic Acid Supplementation to reduce NTDs

- *All women (ages 13 – 45) capable of becoming pregnant should consume 400 µg (0.4 mg) of folic acid daily, preferably in the form of a supplement*
- *Women with previous NTD pregnancy should consume 400 µg (0.4 mg) of folic acid until trying to become pregnant and then take 4 mg at least 3 months prior to actively trying to conceive*

1998

FDA Mandate to fortify cereal grain flours

Enriched cereal grain flours are to be fortified with folic acid (140mcg per 100g of milled flour) by January 1998.

The Prevention Program has recently conducted a survey of the types of neural tube defects that continue to occur in the present era of folic acid fortification. The majority (three-fourths), of NTDs continue to be isolated defects, presumably the type of defect most amenable to folic acid prevention.

This finding brings into question whether the dose of folic acid (400 mcg/day) is adequate to prevent all folic acid preventable NTDs. Although 4000mcg of folic acid was utilized in the Medical Research Council's NTD recurrence study without reported adverse effects and is currently the Center of Disease Control and Prevention's recommendation for recurrence, increasing the daily dose of folic acid for all women childbearing age must be weighed against potential side effects. On the other hand, some have suggested that the risk of side effects is overstated and that the concept of a tolerable upper intake level of folic acid should be abandoned. (Wald et al. Public Health Reviews 39:2, 2018)

GOVERNOR DECLARES JANUARY BIRTH DEFECTS AWARENESS MONTH

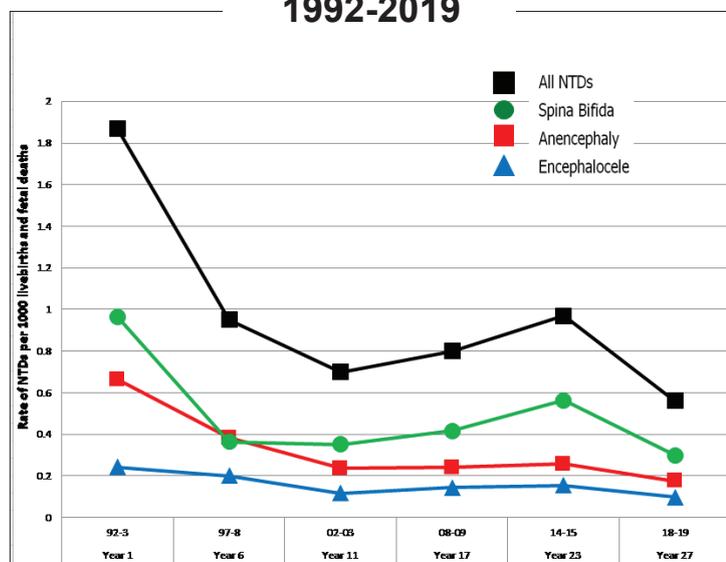
January 2020 has been designated by SC Governor Henry McMaster as Birth Defects Awareness Month. As part of Birth Defects Awareness Month, billboards have been placed throughout South Carolina in efforts to increase awareness about the importance of taking a multivitamin containing folic acid to prevent birth defects of the brain and spine. The message will be continued during the subsequent months through public lectures, science courses, press releases and exhibits.

A daily multivitamin with folic acid improves your health now – prevents birth defects later.

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

1-800-6-SOMEDAY

Neural Tube Defects in South Carolina 1992-2019



NTDs in SC during 2019 (Project year 27)

Thirty-two cases of neural tube defects were identified in South Carolina in 2019

Cases by type of NTD:

Spina bifida was more common than anencephaly accounting for 56% of cases.

Spina bifida	18 (56%)
Anencephaly	9 (28%)
Encephalocele	5 (16%)

Detection method:

The majority of NTDs were detected by ultrasound during the early part of pregnancy.

Ultrasound	27
Quad screen	1
Delivery	4

Distribution of cases by geographic region:

Region I (Piedmont)	12
Region II (Midlands)	9
Region III (Coastal)	11

Contact Us:

SC Birth Defects Prevention Program staff will be happy to assist your office in any way to ensure that your patients have information regarding prevention of these serious defects. We also have patient literature available in Spanish. A dietary guideline with foods that are high in folic acid along with examples of menus using this information has proven to be a very helpful tool for Hispanic patients.

Jane H. Dean, RN
Statewide Program Coordinator
1-800-676-6332 or (864) 941-8138 or jane@ggc.org

The Greenwood Genetic Center (GGC)

is a nonprofit institute organized to provide clinical genetic services and laboratory testing, to develop educational programs and materials, and to conduct research in the field of medical genetics. This newsletter is provided as an educational service to the health care community by GGC. For further information about the clinical and laboratory services available through the GGC please contact:

Clinical Services: 1-888-GGC-GENE
 (864) 941-8100 Greenwood
 (843) 588-4363 Charleston
 (803) 799-5390 Columbia
 (843) 664-2983 Florence
 (864) 250-7944 Greenville

Fetal Examination (864) 388-1700
 (864) 388-1707 (fax)

Laboratories 1-800-473-9411
 (864) 941-8110



SC Birth Defects Prevention Program Partners

Greenwood Genetic Center - Jane Dean, RN (Coordinator)
 (864) 941-8138, 1-800-676-6332

Shriners Hospitals for Children (Greenville) - Myelodysplasia Services
 (864) 271-3444

SC Department of Disabilities and Special Needs
 (803) 898-9789

SC DHEC - SC Birth Defects Surveillance Program - Vinita Oberoi Leedom
 (803) 898-0771