

Folic Acid: Past, Present and Future

**Satellite Conference
Wednesday, January 26, 2005
2:00-4:00 p.m. (Central Time)**

Produced by the Alabama Department of Public Health
Video Communications Division

Faculty

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Faculty

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Objectives

- Understand the function of folic acid and its importance to several biochemical reactions.
- Understand the relationship between preconception folic acid supplementation and the reduced incidence of several birth defects.
- Discuss why there is not a greater reduction in spina bifida and anencephaly.

Objectives

- Know the dosage for folic acid supplementation for women of reproductive age recommended by the Centers for Disease Control and Prevention, American Academy of Pediatrics, March of Dimes, American College of Obstetrics and Gynecology, the American Society of Human Genetics and the Institute of Medicine.

Objectives

- Discuss the rationale behind recommending a specific folic acid dosage.
- Discuss food and supplemental sources of folic acid.
- Be able to explain the other beneficial effects of folic acid supplementation, such as a reduction in the incidence of colon cancer and the prevention of cardiovascular disease.

Neural Tube Defects

- What are neural tube defects?
- What is the benefit of folic acid?
- What are the current recommendations for use of folic acid to prevent neural tube defects?
- What has been the impact of folic acid in reducing neural tube defects?

Neural Tube Defects

- Birth defect that results from failure of closure of the neural tube at any level.
- The specific birth defect is named according to the anatomic location of the lesion.
 - Anencephaly
 - Encephalocele
 - Spina bifida

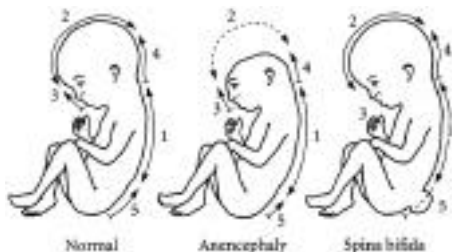
Anencephaly



Spina Bifida



Neural Tube Closure

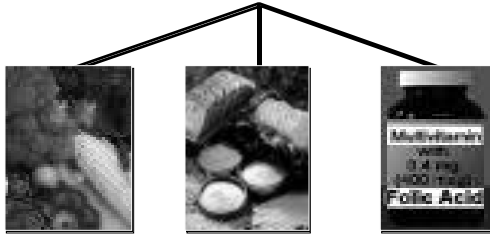


From: DIAS and PARTINGTON, Neurosurg Focus 16 (2):Article 1, 2004

Key Message

- Closure of the neural tube occurs very early during gestation between day 19 – 27 post-ovulation.

Folic Acid Sources



Randomized Clinical Trial, United Kingdom, MRC

Recurrence of NTDs

Folic Acid	1.0%	(6/593)
No Folic Acid	3.5%	(21/602)

RR = 0.29, 95 IC (0.12-0.71)

Lancet 199 1;338: 13 1-7, 153-4

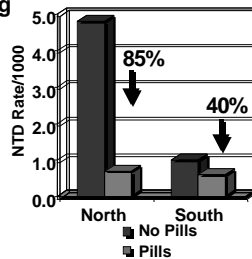
MRC = Medical Research Council, UK

Folic Acid Dose = 4 mg/day

China Folic Acid Community Intervention

(Good Compliance)

Intervention = 400 mcg folic acid supplement daily



U.S. Public Health Service 1992 Folic Acid Recommendation



- 400 µg daily for women capable of becoming pregnant to reduce the risk of having a pregnancy affected with a neural tube defect

- 4mg daily at least one month before pregnancy, if there is family history or previous affected pregnancy

FDA Actions to Prevent Spina Bifida and Anencephaly

- Ordered that all products made with “enriched” grain products contain additional folic acid.
- Approved the use of health claims on products that contain significant amounts of folic acid.

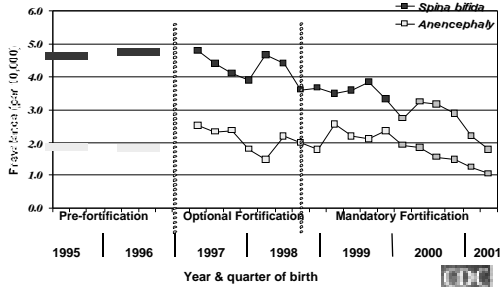


NCFA Actions to Reduce Spina Bifida and Anencephaly

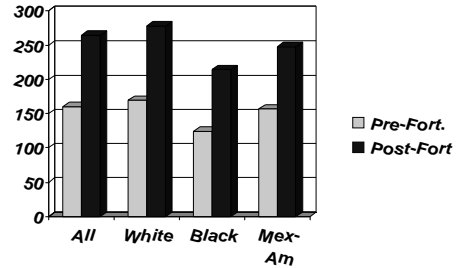
- Launched a national education campaign in January 1999.
- Provides messages and materials.
- Shares materials and plans with partners.



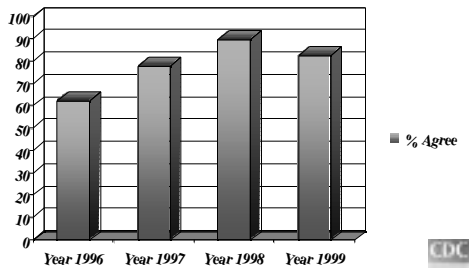
Prevalence of spina bifida and anencephaly among all 24 participating surveillance programs



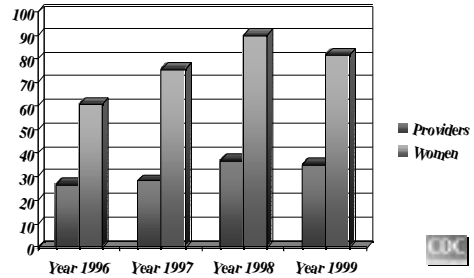
Median RBC Folate, Women 15-44, US, NHANES, 1988-1994 & 1999-2000



Women who WOULD take folic acid if health care provider recommended it



Women who WOULD take folic acid if health care provider recommended it and providers that do recommend it...



Summary

- Every visit to health care provider should be a folic acid visit.
- All women should consume at least 400 µg of folic acid daily.
- Women who have a pregnancy resulting in an NTD should consume 4 mg daily, at least one month prior to conception.