Nutrition Fact Sheet

Up-to-date nutrition information
for the health care professional

Folate and the Prevention of Neural Tube Defects

Top 10 facts about folic acid that your female patients of childbearing age should know

1. **Neural tube defects (NTD) are common and serious birth defects that can affect any baby.** NTDs occur very early in pregnancy and affect the brain and spinal cord. The most common NTD is spina bifida, or "open spine." Mild cases may cause only partial paralysis or problems with bowel or bladder control. Severe cases can result in brain damage, stillbirth or infant death.

2. **Many NTDs are preventable.** Up to 70% of NTDs can be prevented if female adolescents and women who can become pregnant consume 400 micrograms (mcg) of folic acid daily at least a month prior to conception and during the first trimester of pregnancy.

3. **Folic acid is a B vitamin that is necessary for DNA synthesis.** DNA is required for rapid cell division and organ/tissue formation that occurs in a developing baby.

4. Folic acid can only help prevent NTDs during the first weeks of pregnancy, usually before a woman even knows she's pregnant. **Since 50 percent of pregnancies are unplanned, all women who are sexually active and of child-bearing age should consume folic acid every day**.

5. **Two thirds of women in the United States report consuming insufficient levels of folic acid.** There are three ways to get enough folic acid:
   - Take a vitamin supplement containing 400 mcg folic acid daily.
   - Eat a fortified breakfast cereal daily which contains 100% of the recommended daily value for folic acid.
   - Increase consumption of folate-rich foods and foods fortified with folic acid.

6. **Foods that are rich in folate (the natural form of folic acid) include:**
   - fortified breakfast cereals; enriched grain products (check labels);
   - legumes such as pinto beans, navy beans, kidney beans, lentils and garbanzo beans;
   - orange juice;
   - green vegetables**.**

7. **A woman who has had a prior NTD-affected pregnancy is at high risk for recurrence and should see a physician before planning another pregnancy.** Such a woman will need a prescription for a higher dosage of folic acid (4.0 milligrams is recommended).

8. **Women at higher risk for NTD-affected pregnancies are those who:**
   - have insulin dependent diabetes;
   - use anti-seizure medication;
   - are obese (BMI > 30);
   - were exposed to high temperatures in early pregnancy (i.e., prolonged high fevers and hot-tub use);
   - have a poor diet (deficient in high quality protein and with limited fruits and vegetables).

9. Other potential health benefits of folic acid intake include reducing risks related to heart disease, stroke and some kinds of cancer. **Risk of other birth defects (facial clefts, heart problems, limb abnormalities) may be lowered also.**

10. Health care professionals should use the Wisconsin Division of Public Health publication ***Folate and Eating Right for Women of Childbearing Age*** (PPH 4725 English and PPH 4725S Spanish) to provide nutrition guidance to their female patients. This publication may be ordered by sending a DMT-25 requisition form to the Division of Public Health, Nutrition Section, P.O. Box 2659, Madison WI 53701-2659. The DMT-25 requisition form may be obtained by calling (608) 266-9824.

State of Wisconsin Department of Health Services
Division of Public Health
WIC & Nutrition Section
P-40034 (01/2001)
Telephone: (608) 266-9824

Professional Reading and Resources List

Reading:

Gates GE, Tawni WH. (1999) Folate intake and supplement use in women of childbearing age. Family Economics and Nutrition Review. Volume12.

Vozenilek GP. (1999) What they don't know could hurt them: increasing public awareness of folic acid and neural tube defects**.** *Journal of the American Dietetic Association*. Volume 99, pages 20-23.

Petrini JR, Damus K, Johnston RB, Mattison DR. (1999) Knowledge and use of folic acid by women of childbearing age-United States 1995-1998. *Morbidity and Mortality Weekly Report*. Volume 48(16).

Daly Hine RJ. (1996) What practitioners need to know about folic acid. *Journal of the American Dietetic Association*. Volume 96(5), pages 451-452.

LE, Kirke PN, Molloy A, Weir DG, Scott JM. (1995) Folate levels and neural tube defects. *Journal of the American Medical Associatio*n. Volume 274, pages 1698-1702.

Shaw GM, Schaffer D, Velie EM, et al. (1995) Periconceptional vitamin use, dietary folate, and the occurrences of neural tube defects. *Epidemiology*. Volume 6, pages 219-226.

Werler MM, Shapiro S, Mitchell AA. (1995) Periconceptional folic acid exposure and risk of occurrent neural tube defects. *Journal of the American Medical Association*. Volume 269 (10), pages 1257-1261.

Resources:

American Academy of Pediatrics**:** **www.aap.org** 141 North west Point Blvd., Elk Grove, IL 60007, (847) 228-5005

American Dietetic Association**:** **www.eatright.org** 216 West Jackson Blvd., Chicago, IL 60606-6995, (800) 366-1655

American Society for Nutritional Sciences**:** **www.faseb.org** 9650 Rockville Pike, Bethesda, MD 20814-3998, (301) 530-7050

Centers for Disease Control and Prevention, National Center for Environmental Health, Birth Defects and Developmental Disabilities**:** **www.cdc.gov** 4770 Buford Highway NE, Mailstop F-45, Atlanta, GA 30341, (770) 488-7160

March of Dimes Birth Defects Foundation, Resource Center: **www.modimes.org** 1275 Mamaroneck Avenue, White Plains, NY 10605, (914) 997-4748/4720

Maternal & Child Health Bureau, Health Resources & Services Administration**:** **http://nhic-nt.health.org/Scripts/Entry.cfm?HRCode=HR0066** Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857, (301) 443-2170.

Spina Bifida Association of American: **www.spba.org** 4590 MacArthur Blvd, NW, Suite 250, Washington, DC 20007, (800) 621-3141.

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