Nutritional Aspects of Folic Acid

Training Module Revised June 2006

Kentucky
UNBRIDLED SPIRIT™

Folic Acid Supplement

- Synthetic B vitamin
- Form that is best absorbed by the body
- Most stable form of the vitamin

Folate

- Natural B vitamin
- Named for “foliage” due to discovery in leafy greens
- Found in fruits, vegetables, and fortified grains
- Needs to be converted to a folic acid form prior to utilization by the body
- Heat sensitive

Functions of Folic Acid

- Required for DNA and RNA production
  - used for purine and pyrimidine formation
  - coenzyme for glycine
  - coenzyme for phenylalanine to tyrosine
- Involved in the synthesis of S-adenosylmethionine (antidepressant that raises blood serotonin levels)

Functions of Folic Acid

- Prevention of cardiovascular disease through the decreased levels of homocysteine in the blood
- Prevention of uterine, cervical, lung, stomach, esophageal and colon cancer
- Prevention of periodontal disease

Folic Acid in Pregnancy

- Needed for RBC production
- Prevention of NTD's
- May also prevent???
  - Cleft lip and cleft palate
  - Congenital heart defects
  - Limb-reduction defects
  - Urinary tract defects

How to Get Folic Acid

- Vitamin supplement
- Food sources

Folic Acid Supplementation

- **All women of childbearing age**
- 0.4 mg (400 mcg) everyday
- Women who have had a previous child with a NTD

– 4 mg everyday starting three months prior to conception and continuing through the first three months of the pregnancy.

“Best” Food Sources

- Fortified cereals, grains and flours
- asparagus
- spinach
- Brussels sprouts
- black-eyed peas
- black beans
- soybeans
- liver

“Good” food Sources

- Lima beans
- Collard greens
- Broccoli
- Romaine lettuce
- Orange juice
- Wild rice
- Peanuts
- Peas
- Sweet potatoes
- Beets
- Oranges
- Oatmeal
- Sunflower seeds

Dietary Recommendations

1992 US Public Health Service

- All women of childbearing age take 400 micrograms of folic acid

1998 Institute of Medicine

- All women capable of becoming pregnant should on a daily basis:
  - take 400 micrograms of synthetic folic acid
  - eat a varied diet

Food Fortification

- Enriched flours

  150 mcg per 100g flour
- Enriched rice

  154 mcg per 100g rice
- Enriched bread

  96 mcg per 100 g of bread
- Enriched cereals

  100 to 400 mcg per 100g cereal

Is Food Fortification Enough?

NO!

Why Take Folic Acid

- If a woman consumes 400 micrograms of folic acid daily…

Up to 70% of Neural Tube Defects Can Be Prevented