

## Folic Acid and Neural Tube Defects

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**Functional Sub group** Clinical/ Patient Services - Maternity

**Summary** Provision of folate - folic acid supplementation for pregnant women and prevention of neural tube defects.

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**Applies to** Area Health Services/Chief Executive Governed Statutory Health Corporation, Board Governed Statutory Health Corporations, Affiliated Health Organisations, Community Health Centres, Divisions of General Practice, NSW Dept of Health, Private Hospitals and Day Procedure Centres, Public Health Units, Public Hospitals

**Distributed to** Public Health System, Community Health Centres, Divisions of General Practice, Health Professional Associations and Related Organisations, NSW Department of Health, Public Health Units, Public Hospitals, Private Hospitals and Day Procedure Centres, Tertiary Education Institutes

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**Compliance with this policy directive is mandatory.**

**CIRCULAR**

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**FOLIC ACID AND NEURAL TUBE DEFECTS****GENERAL**

The Department of Health supports the recommendations made by National Health and Medical Research Council for prevention of neural tube defects through folic acid intake.

About 400 children born each year in Australia are affected by neural tube defects. Most infants are either stillborn or die early in life. The remainder usually have lifelong physical and often intellectual disability.

Recent evidence has confirmed that the majority of neural tube defects may be prevented by appropriate intake of folic acid, a water soluble vitamin, found in many fruits (particularly oranges, berries and bananas), leafy green vegetables, cereals and legumes.

Women who have had one infant with a neural tube defect have a significantly increased risk of recurrence (40-50 per thousand compared with 2 per thousand for all births). A randomised controlled trial conducted by the Medical Research Council of the United Kingdom demonstrated a 72% reduction in risk of recurrence by periconceptional (ie. before and after conception) folic acid supplementation. Other epidemiological research shows that primary occurrences of neural tube defects may be prevented by folic acid either by diet or as a supplement.

**WARNING**

There is no empirical evidence suggesting adverse effects associated with folic acid supplementation among healthy persons, although there are potential problems in specific groups. Subacute combined degeneration of the cord may be precipitated by folic acid supplementation in people who are vitamin B<sub>12</sub> deficient. There is also the theoretical risk of loss of anticonvulsant control in epileptics on anticonvulsants who take folic acid in high doses.

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## RECOMMENDATIONS

### 1 **All women planning a pregnancy or likely to become pregnant:**

- 1.1 Should be offered advice about folate in the diet, and encouraged to increase their dietary intake of folate-rich foods, particularly in the month before and in the first three months of pregnancy.

In addition:

### 2 **Low risk women (no family history of neural tube defects, not on anticonvulsants):**

- 2.1 Should be offered periconceptual folic acid supplementation (0.5mg daily). Generally, periconceptual supplementation with other vitamins is not necessary. When supplements are used the potential risks of vitamin overdose should be considered. In particular, large therapeutic doses of vitamin A may predispose to birth defects.

### 3 **Women with close family history of neural tube defects (eg they or their partner has spina bifida, they have already had an affected child, they have a sibling or other close relative with a neural tube defect):**

- 3.1 Should be referred for genetic counselling;
- 3.2 Should be advised to take periconceptual folic acid supplementation (5mg daily);
- 3.3 Should continue to be offered prenatal diagnosis with alpha fetoprotein estimation and tertiary level ultrasound, by an operator experienced in anatomical scans, at 16-18 weeks gestation. Although the risk of recurrence is significantly reduced if folic acid supplementation is used appropriately, there is a residual risk of about 1% in women taking supplements who have had a previously affected infant.

### 4 **Women on anticonvulsant drugs:**

- 4.1 Should take folic acid supplementation only under the supervision of and close monitoring by their physician.
- 4.2 Because of the increased risk of neural tube defects in the offspring of women taking some anticonvulsants (notably sodium valproate), these women should also be counselled and offered prenatal diagnosis, as outlined in 3.3.

J Wyn Owen  
**Director-General**