

# FOLIC ACID

Tablets

## Composition

Each tablet contains folic acid 5 mg.

## Action

Folic acid is a member of the vitamin B group and is the substrate for the production of tetrahydrofolate by enzymatic reduction *in vivo*. Tetrahydrofolate is a coenzyme for various metabolic pathways including purine and pyrimidine nucleotide synthesis, and ultimately DNA synthesis. It is also involved in some amino acid conversions, and in the formation and utilization of formate. It is involved in the maturation of all rapidly proliferating tissues particularly those of bone marrow and gastrointestinal tract. Folic acid deficiency develops from inadequate dietary intake through malnutrition or malabsorption, or may result from increased utilization in pregnancy or conditions such as haemolytic anaemia. Folate deficiency is also an adverse side effect of chemotherapeutic agents that function as foliate antagonists by interfering with foliate metabolism.

Conclusive evidence that folic acid therapy when taken as a supplement by women during the periconceptional period significantly reduces the incidence of fetal neural tube defects was established by a multinational, multicentre, controlled clinical study organized by the Medical Research Council in the United Kingdom. In the final report of this study published in 1991, investigators concluded that a daily supplement of folic acid would be beneficial to all women planning a pregnancy.

## Pharmacokinetics

Orally administered folic acid is rapidly absorbed mainly from the wall of the proximal small intestine as the 5-methyltetrahydrofolate metabolite. This metabolite is extensively bound to plasma proteins in the portal circulation.

Folic acid is rapidly absorbed from normal diets and is widely distributed in body tissues with the liver as the principal storage site. Folate is also distributed in breast milk. There is an enterohepatic circulation for foliate; approximately 4 to 5 micrograms is excreted in the urine daily. Urinary levels of excreted foliate are a function of dose.

## Indications

1. Folic Acid 5 mg tablets are indicated for the treatment of megaloblastic anaemia when foliate deficiency is identified as the exclusive cause. Folate deficiency is a consequence of inadequate dietary intake, malabsorption, or increased utilization in conditions such as pregnancy, lactation, haemolytic anaemia, hyperthyroidism, exfoliative dermatitis, and chronic infection.
2. Folic Acid 5 mg tablets are also indicated for prophylaxis of foliate deficiency resulting from renal dialysis, pregnancy and lactation when the mother is malnourished, and chronic haemolytic states such as thalassemia major or sickle-cell anaemia.

## Contraindications

- Hypersensitivity to folic acid.
- Megaloblastic anaemia resulting from cyanocobalamin (Vitamin B<sub>12</sub>) deficiency should not be treated with folic acid as the neurological defects of vitamin B<sub>12</sub> deficiency will not be alleviated, and may become irreversible.
- Caution is advised in patients who may have foliate-dependant tumors.

## Precautions

Folic acid should never be administered for the treatment of undiagnosed megaloblastic anaemia without first excluding vitamin B<sub>12</sub> deficiency as the cause. The hematopoietic response to folic acid therapy may be misinterpreted as an improvement in the condition of vitamin B<sub>12</sub> deficient patients, but irreversible neurological lesions may develop as a consequence of masking the true deficiency state.

Patients receiving concurrent administration of diphenylhydantoin and folic acid should be monitored for possible loss of seizure control.

Folic acid does not correct foliate deficiency due to dihydrofoliate reductase inhibitors, such as methotrexate. Folic acid should be used for this purpose. Folic acid should not be added to multivitamin preparations as it may lower the concentration of vitamin B<sub>12</sub> in the blood.

### **Use in Pregnancy**

#### *Category A*

Folic acid crosses the placenta, however adequate and well controlled studies in humans have shown that therapeutically acceptable doses of folic acid may be safely administered to pregnant women.

### **Nursing Mothers**

Folic acid is excreted in breast milk, but problems in humans have not been documented with intake of normal daily requirements.

### **Drug Interactions**

- Folic acid may interact with antacids that contain aluminum or magnesium, antibiotics and cholestyramine, sulphonamides including sulphasalazine and zinc supplements.
- Folate depletion is a side effect of foliate antagonists such as 5-fluorouracil, methotrexate, trimethoprim, pyrimethamine, and sulphonamides. Potentially severe deficiencies may be treated with calcium folinate therapy.
- The requirements for folic acid may be increased in patients receiving analgesics, anticonvulsant particularly hydantoin and carbamaepine, oestrogens and oral contraceptives.
- Chronic alcoholism decreases the absorption of folic acid. Abstinence from alcohol will partially reverse this effect.

### **Dosage and Administration**

#### **Folate-deficient megaloblastic anaemia**

*Adults:* An initial dosage of 10-20 mg folic acid daily for 14 days is recommended or until a hematopoietic response has been obtained. The daily maintenance dose is 2.5-10 mg.

*Children:* 5-15 mg daily according to the severity of the deficiency.

#### **Prophylaxis of foliate deficiency**

1 tablet (5 mg) taken daily or weekly may be necessary in chronic haemolytic cases such as thalassemia major or sickle-cell anaemia, depending on the diet and rate of hemolysis.

#### **Expected pregnancy**

5 mg taken daily for 4 weeks before conception and during the first trimester of pregnancy for women who are at risk of having a pregnancy affected by neural tube defects.

### **Presentation**

#### **Folic Acid 5 mg tablets**

Box of 30 tablets