

# Kellogg's factsheet

## FOLIC ACID – essential for everybody's good health

### What is folic acid?

Folic acid is vitamin B<sub>9</sub>. It is found in fortified foods (foods with added vitamins and minerals) such as breakfast cereals and yeast extracts, and also in vitamin supplements. You may also hear the term 'folate' used to describe the naturally occurring form of B<sub>9</sub> which is found largely in vegetables, peas, beans and certain fruit<sup>1</sup>. In this factsheet we will use the term 'folic acid' to include all forms of B<sub>9</sub> - both folate and folic acid.

### Why is folic acid needed?

Like all vitamins and minerals, folic acid is essential for everyone for good health. It works with vitamin B<sub>12</sub> to make red blood cells. It is also needed for the normal function of the immune system and it helps to build and repair the genetic material (DNA) found in every cell in the body. Folic acid is especially vital during times of rapid cell division and growth such as pregnancy and infancy. Folic acid is also needed for the normal metabolism of homocysteine, an amino acid found in the blood and associated with blood vessel and bone health<sup>2</sup>. The potential role of folic acid in cardiovascular health, brain function, bone health<sup>3</sup> and reducing the risk of certain cancers<sup>4</sup> is also being investigated.

### How much folic acid is needed in your everyday diet?

Folic acid is a water-soluble vitamin which cannot be stored for long in the body so it is important to include it in your diet every day. The Recommended Daily Allowance (RDA) for folic acid for adults is 200µg (micrograms)<sup>5</sup>. The RDA is the amount you should aim to get daily from food. However, women who could become pregnant, or are pregnant, are advised to take a 400µg (micrograms) folic acid supplement daily from at least a month before conception up until the 12th week of their pregnancy.

### Which foods provide Folic acid?

Folic acid is found in the following foods:

- Fortified breakfast cereals (check for the blue folic acid logo on pack)
- Green vegetables and salad leaves such as spinach, watercress, rocket, broccoli, Brussels sprouts, kale, asparagus and garden peas
- Pulses such as chick peas, black eyed beans, baked beans, lentils etc
- Granary and wholemeal breads
- Yeast and beef extracts
- Oranges, other citrus fruit, berries, bananas
- Potatoes
- Nuts and seeds
- Liver (avoid when pregnant)



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### The importance of breakfast, and breakfast cereal

Many breakfast cereals are fortified with folic acid, and granary bread is a good source. One serving (30-40g) of a fortified breakfast cereal typically provides at least 25-50% of the daily RDA of 200µg (check the nutrition panel of the cereal box). A glass of orange juice, or sliced strawberries or banana on cereal, can boost intake further.

The National Diet and Nutrition Survey<sup>6</sup> highlighted that 11% of men and 30% of women had folic acid intakes below the recommended daily intake, so having breakfast can get more people off to a good start. Regularly consuming breakfast cereals fortified with folic acid not only boosts folic acid intake but significantly reduces levels of homocysteine in the blood<sup>7,8</sup>. Folic acid is also more readily absorbed by the body than folate, the naturally occurring form<sup>1</sup>.

### Folic acid in pregnancy

Higher intakes of folic acid are recommended at least a month prior to conception and during pregnancy to significantly reduce the risk of neural tube defects such as spina bifida<sup>1,9</sup>. Folic acid is vital from conception and in the very early days of embryonic development to ensure that the spine and nervous system develop properly. Therefore the advice is to start taking a daily 400µg folic acid supplement whenever a pregnancy may be possible. This is in addition to having a diet rich in natural folic acid.

Women with a previous pregnancy affected by a neural tube defect or with a family history of neural tube defect, or with health conditions such as diabetes or coeliac disease are advised to take 5mg per day of folic acid (5000µg) prior to conception and until the twelfth week of pregnancy. There is also evidence that folic acid may reduce the risk of having a baby born with other development problems such as a cleft lip and palate<sup>10</sup>. Since as many as half of pregnancies in the UK may not have been planned, food fortification with folic acid has been recommended to help ensure all women of child-bearing age have a good intake<sup>11</sup>.

### Folic acid and cardiovascular health

Low intakes of folic acid and a high blood level of the amino acid homocysteine have been found in populations with a high incidence of heart disease and stroke<sup>12,13,14</sup>. Studies have shown that an increased folic acid intake reduces homocysteine levels<sup>15,16</sup>. However, homocysteine may be a marker, rather than a risk factor for heart disease as more recent studies indicate that lowering raised homocysteine levels does not translate into lower rates of heart disease nor reduce the risk of a further heart attack or cardiovascular events<sup>17,18</sup>. There may be a mild benefit of lowering homocysteine level in the primary prevention of stroke in men<sup>19</sup>. At present, ensuring the RDA for folic acid is met as part of a healthy balanced diet is recommended for cardiovascular as well as general health.

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