Folic acid fortification of flour

Position statement

Key messages

• In the UK between 700 and 900 pregnancies each year are affected by neural tube defects that can cause severe disabilities.

• Folate plays an important role in foetal development. It reduces the risk of neural tube defects in babies.

• Folate is only available from the food we eat. Promotion of folic acid supplements before, and in the early stages of pregnancy has not changed the incidence of neural tube defects.

• Mandatory folic acid fortification of bread flour could prevent approximately 150 of these cases.

Understanding the issue

What is folate/folic acid?

Folate is a B vitamin which is essential for cell production and maintenance, and foetal development. Adequate folate intake by pregnant women reduces the risk of neural tube defects in their babies.

Folate is only available from dietary sources. Meat and green vegetables (such as spinach and peas) are rich sources of folate. However, storage and cooking can affect these markedly. Folic acid, a synthetic form of folate, is used in supplements and for the fortification of foods such as cereals and cereal products, important sources of folate in the UK.[1]

People in the poorest socio-economic circumstances have a lower intake of folate, compared with the more affluent.[1] The most recent data from the UK do not show any improvement. Notably, three out of every four women of child-bearing age in the UK (75%, but 79% in Wales 81% in Scotland, 83% in Northern Ireland) do not have the folate concentration levels recommended by the World Health Organisation (WHO) to minimise the risk of a pregnancy affected by a neural tube defect (see Box 1 Folate in pregnancy).[1,3]

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Box 1. Folate in pregnancy

Adequate folate levels are essential during pregnancy as this is a time of rapid growth. Development of the foetal neural tube (precursor to the brain and spinal column) occurs early in pregnancy, when women may be unaware they are pregnant. Malformations of the neural tube result in defects such as spina bifida (incomplete closure of the lower spine), which causes poor mobility as well as reduced bladder and bowel control, or anencephaly (a large portion of the brain and skull is missing), which is a condition that is incompatible with life. Neural tube defects are associated with considerable psychological and economic costs.[4]

Folic acid supplementation in pregnancy

Folic acid supplementation before conception and throughout the first three months of pregnancy reduces the risk of neural tube defects by up to 72%.[7,8] Women should have a daily intake of at least 0.4mg folate prior to conceiving and during the first twelve weeks of pregnancy. Women who are at increased risk of having a pregnancy affected by a neural tube defect (for example, women who have had a previous affected pregnancy, take medication for epilepsy or have diabetes) are recommended to take 5mg per day. As it is difficult to obtain this level from food alone, folic acid supplements are recommended in the UK.[8,9] Folic acid supplements are widely available for purchase and are available free for pregnant women registered with the 'Healthy Start' scheme. They are not, however, used universally, which can widen health inequalities.

In the latest UK Infant Feeding Survey the majority of women reported having taken folic acid supplements at some point during their pregnancy. However, fewer than four in ten (37%) said that they had taken it prior to conception.[10] This is, perhaps, a reflection of the unplanned nature of many pregnancies.

Certain population sub-groups (such as young women and certain ethnic minority groups) are more likely to be folate deficient and are less likely to take folic acid supplements or consume sufficient folate from dietary sources.[10]

Folic acid safety

Folic acid supplementation has been extensively used and studied across the world and is found to be safe.[7, 8, 13-16]

Mandatory folic acid fortification

Folic acid fortification is the addition of a small amount of folic acid to certain food products. Currently in the UK, some foods, such as breakfast cereals, have been fortified voluntarily. However, voluntary fortification has not made a discernible difference to the rates of neural tube defects.[4] In 2006, the Scientific Advisory Committee for Nutrition (SACN) recommended the mandatory folic acid fortification of flour.[17] This advice was reiterated in 2015.[3]

Mandatory folic acid fortification of flour or bread flour has been introduced in a number of countries, including the USA, Canada and Australia. The prevalence of neural tube defects in these countries has reduced by 19-55% since such fortification was introduced.[15] Mandatory folic acid fortification has been shown to be an easy, effective, safe and very cost-effective way to deliver folate to women during a crucial period of pregnancy.[8,16,18] Mandatory fortification would be a valuable way to reach the population sub-groups who have the lowest levels of folate and are least likely to take folic acid supplements, thus contributing to the reduction of health inequalities.[12] It is estimated that, in the UK, between 700 and 900 pregnancies each year are affected by neural tube defects. Research suggests that mandatory folic acid fortification could prevent approximately 150 of these.[8]

Action

In the UK, the continuing incidence of pregnancies affected by neural tube defects and evidence of poor population folate levels is in contrast to the reduction in the prevalence of pregnancies affected by neural tube defects in countries that have introduced mandatory folic acid fortification. Therefore, the Faculty of Public Health shares SACN's view and believe that there is a strong evidence base for taking effective measures to improve folate status in the UK population, particularly women of child bearing age.

We will work with partners to support the introduction of mandatory folic acid fortification of flour in the UK countries, and consider how pre-existing folic acid supplementation and voluntary fortification programmes will be modified to reduce risk of overprovision.

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