Concurrent Session 14: Folate

Preventing neural tube defects in Australia and New Zealand with folic acid: predicted effectiveness of mandatory fortification compared with supplementation
CM Skeaff, TJ Green
Department of Human Nutrition, University of Otago, Dunedin, New Zealand

Background – Folic acid taken before conception and through early pregnancy reduces the risk of neural tube defects. The amount of folic acid (400 µg/d) proven in randomised control trials to prevent neural tube defects far exceeds that readily obtained by eating foods naturally rich in folate. Therefore, population strategies to reduce rates of neural tube defects require either the addition of folic acid to foods that are consumed regularly by women of child-bearing age or increasing the proportion of women who take folic acid supplements during the critical period. Food Standards Australia New Zealand has recently proposed (P295) to mandate the addition of folic acid (230-280 µg/100 g) to bread-making flour and estimate this will increase mean intake of folic acid in the target population by 100 µg/d in Australia and 131 µg/d in New Zealand.

Review – Mandatory fortification has the advantage that it reaches most women regardless of education or socio-economic backgrounds, it suffers because the need to minimise high folic acid intakes in young or old people limits the level of fortificant (µg folic acid/100 g food) to an amount where only a small percentage of women receive 400 µg/d. Supplementation, on the other hand, has the advantage that it provides folic acid at the correct dose and time directly to – and only to – the target population. The disadvantage is that almost half of pregnancies are unplanned. Overseas experience shows that in regions with high rates of neural tube defects and low folate status, increased population intakes of folic acid reduce neural tube defect rates dramatically. However, in regions where neural tube defect rates are low and folate status is high the effect of increasing population intakes of folic acid is uncertain. The rates of neural tube defects in Australia and New Zealand rank low by international comparison. Furthermore, a population-based sample of Dunedin woman (18-45 y) suggests high folate status in New Zealand. These conditions are likely to influence the effectiveness of mandatory folic acid fortification or supplementation programmes.