



## CONSIDERATION OF NUTRITIONAL REQUIREMENTS IN MULTIPLE PREGNANCIES

May 2008

1. The Scientific Advisory Committee on Nutrition (SACN) Subgroup on Maternal and Child Nutrition (SMCN) was asked on 10 March 2008 to advise the Department of Health on whether women with multiple pregnancies should be advised to consume more food than women with singleton pregnancy. The advice was sought to inform a debate on 25 March 2008 on the Health and Social Care Bill, which will implement the provision of a Health in Pregnancy grant to all pregnant women from April 2009. The grant will provide financial support for expectant mothers ordinarily resident in the UK, to help with the costs of a healthy lifestyle, including diet, in the later stages of pregnancy.
2. The Twins and Multiple Births Association (TAMBA), an NGO supporting families experiencing multiple birth, had requested that women with multiple pregnancies should be entitled to extra payment in the Health in Pregnancy grant and Healthy Start Scheme currently in operation. In support of this request TAMBA asserted that such mothers need to eat more food to meet additional nutritional demands.
3. In light of the urgency, members of SMCN with particular expertise in this area were consulted and specifically asked to consider the supporting evidence provided by TAMBA. The statement represents the assessment of this evidence and not a full risk assessment based on all available evidence.

### ***SACN's assessment of the evidence provided by TAMBA***

4. The papers provided by TAMBA included two reviews and two original studies originating from the same North American institution<sup>1,2,3,4</sup>
5. *Original studies.* One paper described the effect of an intervention designed to increase weight gain in pregnancy amongst women participating in a cohort

<sup>1</sup> Luke *et al* (2003) Specialized prenatal care and maternal and infant outcomes in twin pregnancy. *Am J Obstet Gynecol* 189(4), 934-938

<sup>2</sup> Luke *et al* (2003) Body Mass Index – Specific Weight Gains Associated with Optimal Birth Weights in Twin Pregnancies. *The Journal of Reproductive Medicine* 48(4), 217-224

<sup>3</sup> Luke (2005) Nutrition in Multiple Gestations. *Clinics in Perinatology* 32. 403-429

<sup>4</sup> Luke (2005) Nutrition in Multiple Gestation. *Seminars in Perinatology* 29(5), 349-354

study<sup>1</sup>. The intervention was not randomly allocated and the "programme" and "non-programme" groups were clearly not equivalent. The "programme" women were older, had more private health insurance (less likely to be on "Medicaid"), and were much less likely to smoke. All these differences were strongly statistically significant, and likely independently to be associated with better pregnancy outcome. It should also be noted that the "programme" delivered a package of interventions, some of which were not nutritional, making it difficult to attribute causally any benefit to dietary change.

6. The second paper, also published in 2003, shared the same first author and attempted to correlate "optimal fetal growth and birth weight" with weight gain in pregnancy<sup>2</sup>. Women were recruited from four North American University centres and there appeared to be overlap with the cohort described in the first paper<sup>1</sup>. The main problem with this work was attribution of causality to the link between increased pregnancy weight gain and improved perinatal outcome. Whilst these factors may be associated, there is no empirical evidence from well nourished populations to support the hypothesis that increasing nutrient intakes among women showing low weight gain in pregnancy achieves better pregnancy outcomes. Women who are anticipating a healthy pregnancy outcome tend to have larger babies, greater amniotic fluid volume and larger placentas than women with a failing pregnancy where intrauterine growth retardation, whatever its cause, is associated with lower than expected maternal weight gain.
7. *Reviews* The remaining two papers are reviews by the same author<sup>3,4</sup> and do not add information of relevance.

### ***Conclusion***

8. The Committee therefore highlights obvious limitations to the evidence provided. The case for this specific nutritional intervention should be based on totality of evidence that includes observational studies and well-designed randomised controlled trials such as those we understand are underway.
9. There is currently no evidence from well-controlled studies that maternal dietary intake constrains fetal growth in populations such as those of the UK and the United States. This statement applies to both singleton and multiple pregnancy. The Committee concluded that the evidence provided does not support the assertion that women deliberately increasing their nutritional intakes beyond current recommendations for pregnancy can improve the outcome.