

# Scientific Advisory Committee on Nutrition

---

**14<sup>th</sup> MEETING OF THE SUBGROUP ON MATERNAL AND CHILD NUTRITION**  
**8 September 2010, Conference Room 4, Aviation House, 125 Kingsway, London,**  
**WC2B 6NH**

## **DRAFT MINUTES**

### **Attendees:**

Dr Anthony Williams (Chair)  
Professor Alan Jackson  
Dr Ann Prentice  
Dr Stella Walsh  
Professor Tim Key  
Professor Peter Aggett  
Dr Sian Robinson  
Dr Ken Ong  
Professor David Coggon (agenda items 1 & 2)  
Dr Rebecca Dearman (agenda items 1 & 2)  
Dr Tony Akobeng (agenda items 1 & 2)

### **Secretariat:**

Dr Sheela Reddy (DH)  
Rachel Marklew (DH)  
Lisa Miles (DH)  
Rachel Elsom (FSA)

### **Observers:**

Dr Alison Tedstone (FSA)  
Francesca Entwistle (DH)  
Judith John (Welsh Assembly)  
Sue Hattersley (FSA) (agenda items 1 & 2)  
Dr Joelle Buck (FSA) (agenda items 1, 2 & 4)  
Sarah Hardy (FSA) (agenda items 1 & 2)  
Rachel White (FSA)  
Helen Scott

### **Chair's Introduction**

1. The Chair welcomed Members to the 14<sup>th</sup> meeting of the Subgroup on Maternal and Child Nutrition. Apologies were received from members Professor Annie Anderson and Dr Robert Fraser. Apologies were also received from observers Dr Naresh Chada

(Northern Ireland) and Susan Sky (Welsh Assembly). The Chair welcomed Judith John who was attending in place of Susan Sky.

2. The Chair also noted apologies from Dr Fiona Bisset from the Scottish Government, who had originally registered an interest in attending the meeting. The Chair informed Members that Ruth Campbell, Scottish Observer for the Subgroup, had now moved on from her position as Infant Feeding Coordinator for the Scottish Government and that the intention was for Ruth's replacement to attend once appointed.
3. The Chair then welcomed Professor David Coggon and Dr Rebecca Dearman from the Committee on Toxicity (COT), and Dr Tony Akobeng, Consultant in Paediatric Gastroenterology from Royal Manchester Children's Hospital, who had been invited to join the meeting for agenda item 2. Dr Joelle Buck, Sue Hattersley and Sarah Hardy from the FSA Allergy team had also joined for this discussion.
4. The Chair invited Members to declare or update any conflicts of interest. Dr Ken Ong informed Members that he had received consultancy fees (donated to a University research account) and is in receipt of research project funding from Mead Johnson Nutrition.

#### **AGENDA ITEM 1 – Minutes of last meeting**

5. Members were invited to comment on the minutes of the previous meeting on 5<sup>th</sup> May 2010 (SMCN/10/min01). The following amendments were agreed:
  - Paragraph 11 (and subsequent Action point) – amend to ‘women’s reproductive health’
  - Paragraph 12 – amend Dr Sian Robinson’s affiliation to MRC Epidemiology *Resource* Centre, and also amend *Dr* Edward Wozniak
  - Paragraph 15, bullet point 4 – amend to ‘The report needs to acknowledge evidence collected from developing countries, but could recognise that these studies often involve correction of nutritional deficiency states through intervention’

- Page 7 – amend second bullet to ‘A point should be made that some risk factors for chronic disease are modifiable in later life’ and the fourth bullet to ‘A reference to the contribution of early life factors that affect vulnerability to later environmental risk factors should be added’
  - Paragraph 19 – amend ‘HP’ to ‘health professionals’
  - Paragraph 23 – give full name for NDNS i.e. National and Diet Nutrition Survey
6. Pending the above corrections, the minutes were agreed as a correct record of the meeting.

### **Matters arising**

7. Dr Sheela Reddy reported the progress on matters arising from the previous meeting. It was noted that Professor Angus Walls had offered some text for the early nutrition report, and that this had been tabled as a separate paper under agenda item 3.

### **AGENDA ITEM 2 – Timing of introduction of gluten into the infant diet (SMCN/10/06)**

8. Professor David Coggon, Chair of the Committee on Toxicity of Chemicals in Foods, Consumer Products and the Environment (COT), Dr Rebecca Dearman, member of COT, and Dr Tony Akobeng, a paediatric gastroenterologist from Royal Manchester Children’s Hospital joined the meeting for this item. Sue Hattersley, Dr Joelle Buck and Sarah Hardy from the Food Allergy Branch of the Food Standards Agency also joined the discussion.
9. The Chair summarised the European Food Safety Authority (EFSA) Scientific Opinion which was published in December 2009 (Annex 1 of paper SMCN/10/06). The EFSA Opinion concludes that the introduction of complementary food into the diets of healthy term infants in the EU between 4 and 6 months of age is safe and does not pose a risk for adverse health effects. Further specific conclusions were drawn on timing of the introduction of gluten into the infant diet and risk of development of coeliac disease and type 1 diabetes mellitus (T1DM):

“Based on the available evidence on autoimmune diseases the Panel notes that the early (<4 months) introduction of gluten might increase the risk of coeliac disease and type 1 diabetes mellitus, whilst the introduction of gluten between 4 and 6 months whilst still breastfeeding might decrease the risk of coeliac disease and T1DM (EFSA 2009)

“Presently available data on the risk of coeliac disease and type 1 diabetes mellitus support the timing of the introduction of gluten containing food (preferably while still breast-feeding) not later than 6 months of age” (EFSA 2009)

10. The EFSA Opinion conflicts with current policy advice given by the Department of Health (DH, England). DH recommends exclusive breastfeeding for around the first six months of an infant's life. Infant formula is the recommended breastmilk substitute when mothers do not breastfeed or choose to supplement breastfeeding. Solid foods should be introduced at around six months, and breastfeeding should continue beyond six months alongside appropriate types and amounts of solid foods. There is further advice that mothers who choose to introduce solid foods before 6 months should avoid giving commonly allergenic foods such as peanuts, nuts, seeds, egg, cows' milk, soya, wheat (and other cereals that contain gluten such as rye and barley), fish and shellfish before the infant has reached 6 completed months of age. This originates from the Committee on Medical Aspects of Food Policy (COMA) 1994 report 'Weaning and the weaning diet'.

11. The content of agenda paper SMCN/10/06 was outlined by the Chair; the EFSA Opinion, the key scientific papers cited by EFSA on coeliac disease and T1DM and a formal note of the COT discussion that took place on this topic on 4<sup>th</sup> May were provided as annexes. SMCN had already had an initial discussion on the EFSA statement at its last meeting on 5th May 2010 and the Chair explained that the Committee was now being asked to discuss the evidence on the relationship, if any, between age of introduction of gluten into the infant diet and the subsequent risk of type 1 diabetes and coeliac disease. The Committee was asked to take account of the views of the COT and reach joint conclusions to be published as a statement. Four questions were posed by agenda paper SMCN/10/06 to facilitate discussion.

12. At its meeting on 4th May 2010, the COT discussed the evidence cited by EFSA in support of its conclusions on timing of introduction of gluten and risk of coeliac disease and T1DM. The COT Chair summarised the COT discussion and the conclusions it had drawn by highlighting the following points:

- The systematic review of observational studies by Akobeng *et al.* (2006), which was considered to be of good quality, reported an association between increased duration of breastfeeding and a decreased risk of developing coeliac disease, and also reported that infants who were breastfed at the time gluten was introduced were at reduced risk of coeliac disease. However, it was not clear to COT whether the studies had assessed duration of any or of exclusive breastfeeding, and the studies included in the Akobeng review provided no evidence regarding the effect of timing (age) and dose of first exposure to gluten and disease risk. The studies included were all of case-control design, and may have been subject to differential recall bias.
- The two Swedish studies of time trends in coeliac disease among Swedish children (Carlsson *et al.*, 2006, and Ivarsson *et al.*, 2000) reported significant changes in the incidence of coeliac disease temporally related to changes in national recommendations about the timing of introduction to gluten into the infant diet (firstly a sharp rise in incidence when recommendations were introduced to postpone introduction of gluten from 4 months to 6 months of age, and then a sharp decline in incidence around the time when recommendations changed back to advise introduction of gluten from 4 months of age alongside breastfeeding). However, the COT observed that the sharp decline in coeliac disease incidence did not fit exactly with the timing of changes in feeding recommendations, suggesting that the change in incidence may not have been linked with the change in recommendations.
- The Norris *et al.*, (2005) (DAISY study) was considered by the COT to have provided useful evidence and to be of strong design. Children exposed to foods containing gluten in the first 3 months of life were at increased risk of developing coeliac disease autoantibodies and biopsy-confirmed coeliac disease compared to a reference group first exposed at 4-6 months; those not exposed to gluten until their 7th month or later were at a slightly increased risk of biopsy-confirmed coeliac disease compared with

the reference group. However, the COT noted that these findings had been reported from only a single study and would have liked to see the findings replicated.

- Since the COT discussion, the COT Chair advised that he had identified an additional analysis by Ziegler *et al.*, (2003) in their paper primarily focussed on T1DM risk. In this paper Ziegler *et al.*, (2003) reported no statistically significant associations between introducing gluten at  $\leq 3$  months of age, 3.1-6 months of age or  $> 6$  months of age and later presence of transglutaminase (tTG) autoantibodies (a marker for coeliac disease risk). The COT Chair noted that as the Ziegler *et al.*, (2003) study gave findings only for tTG autoantibodies as a marker of coeliac disease risk, its conclusions were less robust than those of Norris *et al.*, (2005) which measured both tTG autoantibodies and the incidence of biopsy-confirmed coeliac disease.
- With regard to the evidence relating to timing of introduction of gluten into the infant diet and risk of development of T1DM, the COT noted the findings of Norris *et al.*, (2003) who reported that children initially exposed to cereals (not specifically gluten) before 3 months of age, and those who were exposed at 7 months of age or older, had an increased later risk of islet autoimmunity (a predictive marker of T1DM) compared with a reference group initially exposed between 4 and 6 months of age. However, the COT also noted that the study by Ziegler *et al.*, (2003) found no association between late introduction of gluten and risk of T1DM. On this matter, the COT considered the study by Wahlberg *et al.*, (2006) to be uninformative.
- Overall, the COT regarded the available evidence relating age at introduction of gluten to risk of T1DM to be weaker than that for coeliac disease, and inconsistent. It was therefore unable to draw specific conclusions in relation to risk of T1DM.

13. The COT conclusions outlined by the COT Chair were echoed by a COT Member who also emphasised the COT view that the evidence most strongly supported an increased risk of coeliac disease associated with introduction of gluten before 3 months of infant age.

14. Dr Akobeng then summarised his systematic review (Akobeng *et al.*, 2006), this being one of the papers cited by EFSA, highlighting that:

- only case-control studies were identified (there were no published intervention studies available).
- only studies identifying histologically confirmed cases only were included.
- six studies met the inclusion criteria. Quality of the studies was assessed; the main issue of concern was recall bias. Participation bias was also raised as a potential issue.
- the review reported an association between increased duration of breastfeeding and a decreased risk of developing coeliac disease. It was not clear from the primary studies whether investigators had assessed partial or exclusive breastfeeding and there was heterogeneity in how duration of breastfeeding had been ascertained.
- There were too few data to examine the effect of ever *versus* never breastfeeding on the risk of developing coeliac disease.
- a meta-analysis of four of the included case-control studies showed that infants who were breastfed at the time gluten was introduced were at lower subsequent risk of coeliac disease than those not being breastfed; the pooled odds ratio reported was 0.48 (95% CI 0.40-0.59). The exact timing and amount of gluten consumed was not stated in the primary studies. Dr Akobeng also noted that the only study to not report an odds ratio below one was very small (n = 8 cases).

15. Possible mechanisms which might plausibly explain the increased risk associated with not breastfeeding as gluten was introduced were discussed:

- a) breastfeeding reduces the risk of gastrointestinal infection and may in consequence decrease the permeability of the gut to gluten
- b) breastfeeding whilst introducing gluten into the infant diet may be associated with exposure of the infant to a lower dose of gluten. In the United Kingdom infant feeding surveys show that solids are introduced earlier to babies not being breastfed.
- c) not breastfeeding may alter immunological processes in such a way as to predispose to autoimmunity.

16. However, it was noted that no direct experimental evidence to support such mechanisms is available, and no conclusions about mechanisms could be drawn at this time.

17. Members noted that the association demonstrated between breastfeeding when gluten is introduced and coeliac disease may be attributable to the operation of unidentified confounders (for example those associated with longer duration of breastfeeding).

18. The Chair then invited an open discussion, in which members made the following points:

- The lack of published intervention studies reduces the confidence with which conclusions can be drawn. Members noted that there are some intervention studies currently underway, including two funded by the FSA, but that no results are available at the current time; results are expected over the coming five years.
- According to the UK Infant Feeding Survey 2005, the majority of infants are not being breastfed at 4-6 months. This needs to be taken into account when considering the evidence on breastfeeding, timing of introduction of gluten into the infant diet and coeliac disease risk in the UK context.
- Swedish time trend studies do not appear to adequately recognise uncertainty about the intake of gluten in follow-on formula<sup>1</sup> in Sweden over the periods studied. The reduction in risk of coeliac disease incidence also appeared associated with an increase in duration of breastfeeding (more mothers exclusive or partial breastfeeding at 6 months).
- One of the Swedish studies (Carlsson *et al.*, 2006) used only autoantibodies as a measure of coeliac disease. Clinical guidance on diagnosis of coeliac disease (according to the European Society for Pediatric Gastroenterology, Hepatology and Nutrition, ESPGHAN) states that the presence of autoantibodies alone is not sufficient for a diagnosis. A single confirmed biopsy is required and then a positive response to gluten exclusion. There is some uncertainty around the predictive value of autoantibodies for coeliac disease, especially in general population groups (rather than high-risk population groups).
- The key studies providing information on timing of introduction of gluten and coeliac disease risk, Norris *et al.*, (2005) and Ziegler *et al.*, (2003), are based on high-risk

---

<sup>1</sup> The Secretariat advised that it had contacted the Swedish authorities and would also contact the lead author of the Ivarsson *et al.*, 2000 paper to try to find out 1) whether 'follow-on formula' as described in the Ivarsson paper was infant follow-on formula under the EU definition, or alternatively was a cereal based product like gruel, and 2) whether Swedish "follow-on formula" contained gluten during the period considered in the Ivarsson *et al.*, 2000 study.

populations identified through HLA genotyping or having a first-degree relative with T1DM (Norris *et al.*, 2005), or through having a parent with T1DM (Ziegler *et al.*, 2003), respectively.

19. Discussions then focussed on the Norris *et al.*, (2005) study as this provided the most detailed information on timing of introduction of gluten and coeliac disease risk collected in a prospectively studied high-risk cohort. It was felt that the Norris *et al.*, (2005) study was stronger in overall design than the study of Ziegler *et al.*, (2003) which was primarily a study of T1DM and was the only other study providing any information on timing of introduction of gluten and coeliac disease risk. This was largely due to more robust measures of coeliac disease being used in the Norris *et al.*, (2005) study. The following limitations of the Norris *et al.*, (2005) study were noted:

- Subject interviews used to ascertain dietary information were unlikely to have occurred exactly at the 3 and 6 month thresholds used to distinguish exposure groups; there may therefore be some insecurity around the classification of exposures, particularly around the lower bound of the  $\geq 7$  months of age threshold.
- There is also some uncertainty about what is actually meant by the time categories (before 3 months of age, between 4 and 6 months of age, 7 months of age or older). It is assumed that 3 months of age means 3 completed months but this is not explicitly stated.
- The number of infants exposed to gluten in the first 3 months was very small (n=43 which is 3% of total cohort).
- The reported association between introduction of gluten at  $\geq 7$  months of age and risk of coeliac disease was only statistically significant if analyses were restricted to the smaller number of biopsy positive cases (n=25).

20. The Committee then discussed evidence on age at introduction to gluten and risk of T1DM. The following points were noted:

- Norris *et al.*, (2003) used T1DM autoantibodies as an outcome measure in the DAISY study to investigate whether infant age at introduction of cereals (foods containing rice, oats, wheat, barley and rye) was related to T1DM risk. Reported associations

were only statistically significant when exposure to all cereals was considered, and were not statistically significant when exposure to only gluten-containing cereals was considered. It was also noted that no adjustment was in the data analysis model for mode of feeding, which is a limitation.

- Ziegler *et al.*, (2003) also reported on early infant feeding and risk of T1DM as reflected in the presence of circulating insulin antibodies (IA), GADA and insulinoma antigen-2 (IA-2) autoantibodies. Introduction of gluten at or below 3 months of age was associated with an increased risk of T1DM autoantibodies when compared with introduction between 3.1 and 6 months. However, there was no statistically significant association with introduction of gluten after 6 months of age.
- Again, it was noted that both of these cohorts were high-risk populations and that outcomes were based on predictive markers of T1DM rather than the disease itself. The number of cases was larger in the study by Ziegler *et al.*, (2003) compared to the study by Norris *et al.*, (2003).

21. Overall the Committee agreed the following conclusions on the evidence-base related to timing of introduction of gluten into the infant diet and risk of coeliac disease and T1DM:

### **Draft conclusions**

- Few data are available from the studies cited in the EFSA Opinion that directly address risks of coeliac disease or diabetes mellitus in relation to the timing of introduction of gluten into the infant diet. Currently the only available evidence is observational. This means that there is significant uncertainty in any conclusions that can be drawn, and the balance of evidence might change in the future as the results of ongoing randomised controlled trials become available.

### **A. Timing of introduction of gluten into the infant diet and risk of coeliac disease**

- The balance of evidence currently available provides an indication that early (before 3 completed months of age) introduction of gluten-containing foods into

the diet is associated with an increased risk of coeliac disease in a high-risk population. However, this is based on findings from a single observational study in a high-risk population (Norris *et al.*, 2005), in which only a small number of infants were exposed to gluten before 3 months of age.

- There is insufficient evidence to support a conclusion that delayed introduction of gluten into the infant diet beyond six completed months of age is associated with an increased risk of coeliac disease. Evidence is limited to that from two cohort studies (Norris *et al.*, 2005 and Ziegler *et al.*, 2003), both in high-risk populations, with inconsistent findings
- There are no direct data on the relationship between age of introduction of gluten and risk of coeliac disease in the general population.
- There is evidence from a meta-analysis of four case-control studies (Akobeng *et al.*, 2006) suggesting that the introduction of gluten into the infant diet whilst not breastfeeding is associated with an increase in the risk of coeliac disease. However, there is an absence of evidence about the relationship of any such effect to the age at which is gluten is introduced.

## **B. Timing of introduction of gluten into the infant diet and risk of T1DM**

- Currently available evidence on the timing of introduction of gluten into the infant diet and risk of T1DM is weak and does not allow specific conclusions to be drawn.

### **Draft summary statement (overall conclusions)**

- Currently available evidence on the timing of introduction of gluten into the infant diet and subsequent risk of coeliac disease and T1DM is insufficient to support recommendations about the appropriate timing of introduction of gluten into the

infant diet for either the general population or high-risk sub-populations. However, there is evidence to suggest that not being breastfed at the point when gluten is introduced into the diet is associated with an increased risk of coeliac disease.

- These conclusions inform work to be conducted by SMCN on complementary and young child feeding, which will include a critical appraisal of existing recommendations regarding the appropriate timing for introduction of solids. This work is due to start in 2011.

22. The Chair referred back to the questions posed in agenda paper SMCN/10/06. After a brief discussion, it was agreed that the answers had been covered by the conclusions drawn in under paragraph 21.

23. The SACN Secretariat will draft a statement to reflect these discussions. It was agreed that the draft statement including the conclusions described here needs to be communicated to COT with a request for agreement. The statement will then be submitted to SACN.

**ACTION: Secretariat**

**AGENDA ITEM 3 – The influence of maternal, fetal and child nutrition on the development of disease in later life (SMCN/10/07)**

24. The Chair introduced the final draft report on '*The influence of maternal, fetal and child nutrition on the development of chronic disease in later life*' (SMCN/10/07), which had been out for a 12-week scientific consultation earlier this year. The Chair reminded Members that comments received from the consultation were discussed at the last SMCN meeting in May 2010, and a list of proposed actions was presented to the main committee in June 2010 alongside draft recommendations and an executive summary.

25. Members were informed that following the June SACN meeting, the Secretariat had revised the report with assistance from the Chair, incorporating agreed actions in

response to consultation comments and additional comments from the main committee.

26. The Chair noted the following changes to the report:

- Chapter 5.1 – The human observational data from this section has been separated from the intervention studies and moved to a new section in Chapter 3 (section 3.5.2 *Effect of early feeding on growth*)
- Chapter 5.2 – Additional text and changes from Professor Harry McArdle on mechanisms has now been incorporated into this chapter with the following subheadings given: ‘*Disruption of organ development*’, ‘*Disruption of the endocrine environment*’ and ‘*Epigenetics*’.
- In response to a consultation comment from Professor Henry Leese, additional text has been included in section 3.1.3 to acknowledge better the role of the placenta. Professor Alan Jackson agreed to send additional paragraphs to the secretariat

**ACTION: Professor Alan Jackson**

- The Chair highlighted an additional paragraph (para 326) addressing a consultation comment that interventions in developing countries had not been captured.

27. The Chair drew attention to a contribution from Professor Angus Walls on fluoride and dental health. Members noted that whilst the issues covered were important they were not directly relevant to the influence of early life exposures on long-term outcome. A short paragraph will be incorporated in the epidemiology section to summarise the points made.

28. The Chair then invited Members to comment specifically on the revised executive summary and recommendations for the report. A number of editorial changes to the text were noted, and key changes were agreed.

29. The Secretariat agreed to redraft the executive summary and recommendations, taking account of the points made, and circulate as soon as possible a revised version to the Subgroup for agreement. Members were asked to submit any further comments on the

report to the Secretariat by email. Meanwhile the Secretariat would continue to prepare the report for publication.

**ACTION: Secretariat and Members**

30. Members congratulated the Chair and Secretariat for their work on advancing the report, and requested that this be recorded in the minutes.

*Dr Ann Prentice left the meeting*

**AGENDA ITEM 4 – Draft scope for a review of complementary and young child feeding (SMCN/10/08)**

31. The Chair invited Dr Sheela Reddy to introduce the paper (SMCN/10/08) setting out a draft scope for a review of complementary and young child feeding. Members were reminded that this was one of the topics presented to the main committee at the last Horizon Scanning meeting in October 2009, and that Members had agreed this should feature on the Subgroup's work agenda. Dr Reddy explained that a review of the scientific evidence underpinning UK infant and young child feeding policy was long overdue and that the last thorough assessment of such evidence in the UK was the 1994 COMA report 'Weaning and the Weaning Diet'. The Subgroup had been asked to consider the terms of reference and scope for the review and report back to SACN.

32. A range of topics to be covered in the review was presented in the paper for discussion (Table 1). Dr Reddy highlighted the policy need for a review - there is a need to consolidate various pieces of advice in this area and to consider any additional evidence available. Dr Reddy specifically noted that there are currently no food-based guidelines for children aged 2-5 years.

33. Members commented as follows:

- The draft scope suggests an intention to compile practical guidance rather than review evidence and undertake risk assessment

- Any risk assessment should regard the newly introduced WHO growth standards as a standard on which to make judgements about growth
34. In further discussion, it was agreed that the review should be a staged process and should begin by critically appraising current policies and recommendations for infants and young children. The review would draw on ongoing surveillance data from the Infant Feeding Survey, National Diet and Nutrition Survey (NDNS) and the Diet and Nutrition Survey of Infants and Young Children (DNSIYC); new data from these surveys would help to highlight areas of concern in UK infant feeding practices.
35. Members agreed that the scope should cover 0-5 years, as there is a lack of guidance for older sectors of this age group. However, it should address 0-2 years first and only later consider any overlap with the 2-5 years age group. It was agreed that the review should be confined to healthy term infants in the general population in keeping with SACN's Terms of Reference
36. The Secretariat agreed to draft Terms of Reference for the review with an annexed list of specific recommendations to be critically appraised, for the Subgroup to consider at their next meeting in January.

**ACTION: Secretariat**

*Professor Tim Key and Judith John left the meeting*

**AGENDA ITEM 5 – CMACE/ RCOG Joint Guideline on the management of women with obesity in pregnancy: recommendation on high dose folic acid supplements (SMCN/10/09)**

37. The Chair introduced the paper (SMCN/10/09) and explained that the Centre for Maternal and Child Enquiries (CMACE) and Royal College of Obstetricians and Gynaecologists (RCOG), had published a joint guideline on Management of Women with Obesity in Pregnancy, which included a recommendation that obese women who wish to become pregnant should consume a daily high dose supplement providing 5 mg folic acid. It was noted that the Department of Health does not currently make such

a recommendation for this group of women and Members were asked to consider whether or not a further risk assessment is required.

38. The Chair highlighted written comments submitted by Dr Robert Fraser (who could not attend the meeting) in Annex 3 of the paper. Dr Fraser had concluded that the evidence for an increased risk of neural tube defect (NTD) affected pregnancy in maternal obesity is established, but the effectiveness of high dose folic acid supplementation in modifying this risk has not been established. Written comments from the Scottish Committee of the Royal College of Obstetrics and Gynaecology (RCOG), forwarded by the Scottish Government, were in broad agreement with Dr Fraser's considerations.
39. Members observed that currently there are a large proportion of women of childbearing age not consuming the recommended 400 microgram daily folic acid supplement. Moreover, given the high proportion of obese women in the population any recommendation to consume a 5mg folic acid supplements would have practical implications for health professionals since it is only available on prescription. .
40. Overall, the Subgroup agreed that there is evidence to suggest obese pregnant women have an increased risk of an NTD-affected birth, but that current evidence does not support a population recommendation for high dose folic acid supplements for obese women wishing to become pregnant. The Subgroup reiterated the recommendation that all women who could become pregnant should take a daily 400 microgram folic acid supplement, and that efforts to improve compliance throughout the population should be continued.
41. The Subgroup agreed that there was insufficient evidence to undertake any further public health risk assessment of the evidence on folic acid requirements of obese women who wish to become pregnant. It was agreed that comments from the Subgroup should be fed back to the RCOG and CMACE.

**ACTION: Secretariat**

**AGENDA ITEM 6 – NICE guidance on weight management before, during and after pregnancy (SMCN/10/10)**

42. The Chair noted the recently published NICE public health guidance on '*Dietary Interventions and physical activity interventions for weight management before, during and after pregnancy*' (Public Health Guidance 27) which was tabled for information.

**AGENDA ITEM 7 - Breastmilk Composition Literature Review (SMCN/10/11)**

43. The Chair introduced the paper 'A literature review of the nutrient composition of human breastmilk' (SMCN/10/11) that had been tabled for information. Members were informed that this review had been undertaken by the FSA to acquire reliable data upon the nutrient composition of human breastmilk. These will be used to estimate nutrient intakes in the joint FSA/DH funded Diet and Nutrition Survey of Infants and Young Children (DNSIYC).

44. In the UK, human breastmilk composition data are currently published within McCance and Widdowson's *The Composition of Foods, Milk Products and Eggs* (1989) and *Fatty Acids* (1998) supplements, but diets are likely to have changed and therefore a review was considered appropriate. The conclusions of the review were noted: that the current McCance and Widdowson values are adequate for use in DNSIYC, subject to substitution of the energy value of 0.68kcal/g (2.84KJ/g) with the gross energy value of 0.67kcal/g (2.8KJ/g) applied by SACN in the draft energy report.

45. Members recognised that breastmilk sampling was problematic and that there were limited data on gross and metabolisable energy of breastmilk as consumed. Members agreed that the composition data outlined in the paper should only be used to approximate breastfed nutrient intakes in the deuterated water sample, primarily to indicate changes that occur in partitioning of intake through the complementary feeding transition. They should not be regarded as reflecting accurately metabolisable energy intake. It was agreed that the paper should reflect the limitations of the data.

**ACTION: FSA**

46. Members agreed that there was a generic need to update data on the nutrient composition of breastmilk, and that more accurate contemporary methodologies should be used to achieve this. However this aim could not be accomplished within the existing National Diet and Nutrition Survey programme of work.

**AGENDA ITEM 8 – National Confidential Enquiry into Patient Outcome and Death (NCEPOD) (SMCN/10/12)**

47. The Chair noted the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) recent report (June 2010) '*A Mixed Bag: An enquiry into the care of hospital patients receiving parenteral nutrition*', which was also tabled for information.

**AOB****Next meeting**

48. The next Subgroup meeting will be held on 19<sup>th</sup> January 2011.