



**3rd MEETING OF THE SUBGROUP ON VITAMIN A
27 July 2004, FSA, Aviation House, Conference Room 2**

Draft Minutes

- Chair** Professor Alan Jackson
- Members** Professor Peter Aggett
Dr Tim Key
Dr Ann Prentice
Dr Anita Thomas
Dr Anthony Williams
Dr Bruce Cottrill (Advisory Committee on Animal Feedingsuffs)
- Secretariat** Dr Alison Tedstone (FSA)
Dr Cliff Gay
Ms Mamta Singh (FSA)
Ms Emma Peacock (FSA)

AGENDA ITEM 1 – Chair’s welcome

1. The Chair welcomed members to the 3rd meeting of the SACN Subgroup on Vitamin A. Apologies for absence were received from Dr Ray Smith (Animal Feed Unit, FSA) and Dr Sheela Reddy (DH).

AGENDA ITEM 2 – Minutes of the last meeting (SACN/VitA/min04/01)

2. Members were invited to comment on the minutes of the previous meeting. The following changes were agreed:
3. Para 17: Addition of another sentence at the end of the paragraph to indicate that there are also some data which show no significant association between retinol intakes of 1500-3000µg/day and risk of osteoporotic fracture.

4. Para 19: “mean and median **retinal** intakes....” Should read “....mean and median **retinol** intakes....”
5. Para 21, 3rd bullet point: The first sentence of the third bullet point “**It was not clear whether results had been age-adjusted**” should be a separate bullet point from the second sentence which was concerned with differences in body weight and height. Clarification was requested regarding the second sentence.
6. The title of the section “**Review of studies investigating the effects of vitamin A supplementation on hepatic storage (Annex 9)**” on page 8, should state ‘in livestock and animals’.
7. Para 37: In the final sentence, after ‘higher than the Maximum Permitted Level (MPL)’ add ‘for animal feeds’. Members also requested that the definition of *Maximum Permitted Level (MPL)* be inserted as a footnote.
8. The minutes were agreed subject to the requested amendments.

AGENDA ITEM 3 – Matters arising

a) Complete list of references cited in Melhus chapter from *Nutritional Aspects of Bone Health (RSC, 2003)*

9. The full list of references cited in the chapter by Melhus was provided in response to a request from Members at the previous meeting.

b) Commentary on the interaction between vitamin A and vitamin D

10. A commentary prepared by Professor Aggett, based on the references in the Melhus chapter specifically relating to the interaction between vitamin A and vitamin D, was tabled at the meeting.

11. Members noted that the evidence about this interaction had been obtained mainly from animal studies; only one study had investigated this interaction in humans (Johansson & Melhus, 2001).
12. The majority of the animal studies suggest that vitamin A and vitamin D have antagonistic effects and that the adverse effects of high vitamin A intakes are more evident if vitamin D exposure is relatively low and the ratio of vitamin A exposure to that of vitamin D is high. Thus the adverse effects of vitamin A are more marked if vitamin D intake is inadequate. More definitive reports of dose response studies were not found. Early studies concluded that interactions occur during intestinal uptake and transfer of the vitamins, but subsequent studies suggest that interferences also occur in the skeleton.
13. The active metabolites of both vitamins achieve their effects by regulation of gene expression through nuclear receptors. *In vitro* studies have suggested the potential for interactions between the vitamins at the ligand binding sites of the nuclear receptors (Thompson et al, 1998). At high concentrations, vitamin A metabolites might interfere *in vivo* with the normal binding of vitamin D to its nuclear receptor. The secretariat were requested to carry out a citation search on the paper by Thompson et al (1998) to see if more recent studies had been conducted in this area.

Action: Secretariat

14. Members noted that the vitamin D status of certain population subgroups, e.g. older people, may be poor and therefore high vitamin A intakes would be of greater concern in this population.
15. Members noted the importance of considering vitamin D status as a confounder in studies of vitamin A and bone health.
16. The Chair thanked Professor Aggett for preparing the commentary on the interaction between vitamin A and vitamin D which Members had found very informative. Members agreed that this subject needed further investigation.

c) Modelling data based on 1500µg retinol intake

17. In response to a request by Members at the previous meeting, the different modelling scenarios had been revised and were based on reducing the prevalence of retinol intakes above 1500µg/day rather than 1500µgRE of total vitamin A.
18. Members noted that there was a typing error in paragraph 11: in the penultimate sentence, *Paragraph 9* should read *Paragraph 10*.
19. With regard to the seasonal variation in retinol status a question was raised on whether the assays had been carried out during the same time period. It was reported that the assays had been carried out in batches during the different seasons but it was agreed to check this matter and report back to Members.

Action: Dr Ann Prentice

20. It was noted that the term 'vegetables' in table3 also included vegetable dishes.

d) Further information on retinol content of livestock

21. At the previous meeting, members had requested further information on the effects of reducing dietary vitamin A supplementation of animal feeds on the retinol content of animal products. Dr Bruce Cottrill informed Members that that very little data have been published on this issue.
22. Based on the available data, it was noted that the levels of vitamin A supplements in the animal feed of farm livestock clearly affects the vitamin A content of eggs and liver, but that the effect on the vitamin A content of milk was not well documented.
23. Members noted that reducing dietary supplementation of animal feed would be one way of reducing high retinol intakes but questioned whether it would be possible in practical terms.

AGENDA ITEM 4 – Review of draft paper

24. The Chair thanked the Secretariat for preparing the draft paper on the review of dietary advice on vitamin A.

25. Members were first invited to comment on any general issues regarding the draft paper. The following suggestions were made:

- The term ‘total vitamin A’ should be used whenever a reference to vitamin A is made.
- The template used for gathering evidence for the risk assessment needs to be explained in the text.
- Tabulation of the studies examined to enable clearer comparison.

26. The draft report was then considered in more detail, and Members were invited to make specific comments on each section. A number of changes were agreed.

27. In the section relating to vitamin A intakes of children Members discussed whether this section should be included in the report. Concern was expressed regarding a number of issues:

- As the EVM had not established Guidance Levels for children, these had been extrapolated by scaling for body surface area and were very approximate and varied with age group. Additionally, the Guidance Levels were quite similar to the Reference Nutrient Intakes for some age groups.
- The effects of high retinol intakes on bone health may not be relevant to children.
- The importance of Vitamin A for growth in children.

28. Members agreed that it would be useful to consider the intakes and sources of retinol for children from birth onwards. It was agreed that this information would be provided to Members for further consideration.

Action: Secretariat

AGENDA ITEM 5 – Future work

29. It was agreed that the Secretariat would make amendments to the text as agreed and circulate to members for their comments in advance of submitting the draft paper to the full SACN meeting in October.
30. After agreement by SACN, interested parties would be invited to comment and the final draft would be agreed at the main SACN meeting in February 2005. It was agreed that a further meeting of the Subgroup would be arranged for January 2005 to discuss the comments received from interested parties and prior to the February 2005 meeting of SACN.
31. Members agreed that further work on the children's section should be carried out in parallel to avoid delays in amending the main paper and that it might be necessary to hold a separate meeting to discuss this matter.
32. The Chair then closed the meeting and thanked the Members for their attendance.