

Scientific Advisory Committee on Nutrition

1st MEETING OF THE WORKING GROUP ON IRON 08 March 02, Food Standards Agency, Aviation House, 125 Kingsway, LONDON

Draft Minutes 11/04/02

Attendees:

Chairman

Professor Peter Aggett

Vice Chair

Dr Ann Prentice

Members

Professor Sue Fairweather-Tait
Professor Sally Grantham-McGregor
Professor Kim Michaelsen
Ms Paulette Jones
Professor Joe Lunec
Professor Martin Pippard
Professor Mark Worwood
Dr Bruno de Benoist

Secretariat

Dr Alison Tedstone (FSA)
Dr Adrienne Cullum (DH)
Ms Orla Yeates (FSA)

Chair's Introduction

1. The Chair welcomed Members to the first meeting of the Working Group on Iron. Members were invited to introduce themselves. Apologies for absence were received from Dr Philip Calder, Dr Tim Key and Dr Sheela Reddy.
2. The Chair noted that the Committee had been selected to represent a range of skills and offer a range of perspectives to the Group's deliberations.
3. The Chair gave a brief outline of the agenda and the timetable that was envisaged for the Group's work. He suggested the Group should next meet in June/July with a view to producing a first draft of their report by November 2002, and aim to publish the final report in 18 to 20 Months. Potential reviewers of the draft report could be drawn from the original list of nominees for the Working Group.

4. Dr Bruno de Benoist gave a brief outline of the departments with nutritional responsibilities within the World Health Organisation (WHO).

AGENDA ITEM 1 & 2

5. The Secretariat drew Members' attention to the *Code of Practice and Openness of Committee Proceedings* of the Scientific Advisory Committee on Nutrition (SACN). The scientific independence of SACN and its Working and Subgroups was emphasised. Members were invited to comment on the papers.
6. Members were informed that they would be asked to declare their interests annually and that these would be put in the public domain: additionally changes in relevant interests should be declared at meetings of the group. Members were reminded that returns for declaration of interests were due on Monday 11th March.
7. The Minutes of Working Group meetings, as with those of SACN, would be placed on the SACN website (www.SACN.gov.uk) within one month of the meeting and would be non-attributable.
8. The Secretariat will undertake a request for submissions on iron and other issues relevant to the group's terms of reference from interested parties.

Action: Secretariat

AGENDA ITEM 3

9. The Chair reminded Members of the purpose of the Group: "To review the dietary intakes of iron in its various forms and the impact of various dietary patterns on the nutritional and health status of the population and to make proposals". Both the beneficial and adverse effects of increasing iron intakes would be considered, including the:
 - effect of low-grade infections/inflammation on iron status.
 - effects of iron status on mental and physical development.
 - effect of nutritional status of other micronutrients on iron absorption and utilisation.
 - potential adverse effects of excess iron, in particular, promotion of free radical damage and the risk of cardiovascular disease and cancer.

10. Members noted the complicated balance between iron sufficiency, insufficiency and deficiency. Severe iron deficiency is associated with anaemia, and may impair work performance and child development. Additionally the impact of mild iron deficiency anaemia (IDA) is more controversial and the need for appropriate public health interventions and the action thresholds for these require further elucidation.
11. Members discussed the background papers that had been provided by the Secretariat (Annex 1 to 19).
12. The Chair noted that the Group would need to interpret surveys and assess at risk groups. It was noted that the correlation between estimated iron intake and iron status is generally weak in surveys. The Group was informed that additional data from UK surveys may be available to them and once possible cut off points had been agreed for defining iron deficiency, excess, and for action thresholds, further modelling of UK data could be available. Members discussed the data provided on the iron content of foods in the current database and edition of the Composition of Foods (McCance and Widdowson, 1991). It was agreed that a critique of this data will be required.

Action: Secretariat

Annex 1: WHO Iron Deficiency Anaemia. Assessment, Prevention and Control: A Guide for Programme Managers. UNICEF/United Nations University/WHO. WHO/NHD/0.1.3 WHO 2001.

13. The establishment of reference values for parameters of iron metabolism and utilisation are essential to defining IDA and iron deficiency. Reference was made to Annex 7 page 31 Table 5.7, which showed 'suggested cut-off points for defining iron status in adults from epidemiological studies'. Members agreed that this table could probably be revised in light of new knowledge.

Annex 2: National Diet and Nutrition Survey (NDNS)

Annex 2A, B and C: For groups aged 1½ – 4½ years, 4-18 yrs and 65 years and over

14. Members noted the data which these surveys provide, and agreed that the functional significance of such epidemiological data would have to be considered, as would the societal and public health implications.

15. The Secretariat agreed to circulate the contents pages of the NDNS report, details of the dietary methods used in the surveys, and data from the forthcoming NDNS of 19-64 year olds (available in the Autumn).

Action: Secretariat

Annex 3: Amount of Iron (mg per person per day) and the percentage contribution to the diet in Great Britain in 1990, 1995 and 2000; National Food Survey (NFS).

16. Members noted that there appeared to have been a decrease in iron intake from meat sources, while iron intake from cereals appeared to have increased over the 10 year period shown. However, the NFS data were limited because of the nature of the survey, particularly in the fact that the 1990 and 1995 data did not include food eaten outside the home. It was noted that such data need to be interpreted in the context of the bioavailability of the iron, the characteristics of the diet, and the individuals and population which influences this.

17. Members noted that the restoration of iron in flour was mandatory in the UK (except for wholemeal flour). However the current situation regarding the fortification of speciality, imported and non-flour products was unclear. The Secretariat agreed to provide clarification of these issues.

Action: Secretariat

Annex 4: Department of Health. Nutritional Aspects of the Development of Cancer. Report on Health and Social Subjects 48. London: HMSO 1998. Chapter 9

18. The report summarised the evidence on diet and cancer, particular attention was paid to the sections relevant to links between cancer and dietary sources of iron, such as red meat consumption.

Annex 5: Department of Health. Dietary Reference Values (DRV) for Food Energy and Nutrients for the United Kingdom. Report on Health and Social Subjects 41. HMSO: London, 1991. Chapter 28

19. The Chair reminded Members that they were not being asked to revisit the DRVs for iron and that any recommendations should be made in light of current values and intakes.

Annex 6: Reports of the Scientific Committee on Food (SCF) (Thirty-First series). Nutrient and energy intakes for the European Community.

20. Figures include Population Reference Intakes (PRIs) for iron. Members were informed that these PRIs did not necessarily correspond with the UK DRVs for iron, particularly those for pregnant women. It was noted that such differences would need to be objectively addressed. Members agreed that, if appropriate, data on iron deficiency from developing countries would be included in future discussions and that it would be useful to assess data from recent studies in pregnancy, such as that in Southampton.

Action: Secretariat.

Annex 7: Iron: Nutritional and physiological significance. The Report of the British Nutrition Foundation's Task Force. Chapman & Hall, 1995.

21. It was agreed that the report represented the state of knowledge up to 1995 and would be a useful starting point for the Working Group.

Annex 8: European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN). Iron metabolism and needs in early childhood: do we know enough? A commentary by the ESPGHAN Committee on Nutrition (in press).

22. Members noted that this paper discussed the current state of knowledge with regard to iron metabolism and needs in early childhood. It also illustrated limitations of available data, with particular reference to milder forms of iron deficiency and moderate iron excess. In addition it drew attention to difficulties and confounding factors, including growth, in the interpretation of indicators of iron status, such as haemoglobin and serum transferrin for young children.

Annex 9: Oppenheimer SJ (2001) Iron and its relation to immunity and infectious disease. J Nutr 131:616S-633S; discussion 633S-635S.

Annex 10: Stoltzfus Rebecca J. (2001) Iron-Deficiency Anaemia: Re-examining the Nature and Magnitude of the Public Health Problem. Summary: Implications for Research and Programs. J.Nutr.131:697S-701S.

23. Members agreed that these papers would be useful for the future deliberations of the Group. These papers had been drawn from the Proceedings of the Belmont Conference (2000), published in the Journal of Nutrition. The Secretariat agreed to circulate these proceedings to Members.

Action: Secretariat**Annex 11 to 14**

Nokes, C. Van den Bosch, C. Bundy, D. The Effects of Iron Deficiency and Anaemia on Mental and Motor Performance, Educational Achievement, and Behaviour in Children. A Report of the INACG (International Nutritional Anaemia Consultative Group). Washington, DC: International Life Sciences Institute, 1998.

Martins, S., Logan, S., & Gilbert, R. (2001) Iron therapy for improving psychomotor development and cognitive function in children under the age of three with iron deficiency anaemia (Cochrane Review). Cochrane Database Syst Rev 2: CD001444.

Grantham-McGregor, S. & Ani, C. (2001) A Review of Studies on the Effect of Iron Deficiency on Cognitive Development in Children. J Nutr 131: 649S-666S; Discussion 666S-668S.

Grantham-McGregor S, Ani C (1999) The role of micronutrients in psychomotor and cognitive development. Br Med Bull 55:511-27

24. Members considered these four papers together. It was noted that the data available was limited, particularly data linking moderate IDA to impaired development and data on the effectiveness of interventions to reduce IDA.

Annex 15: Beard, J L. (2000) Effectiveness and Strategies of Iron Supplementation During Pregnancy. Am J Clin Nutr 71: 1288S-94S.

25. This paper illustrated the limitations of current data and on iron deficiency and excess and its effect on pregnancy outcome. Questions posed within the paper will be useful for the future deliberations of the Group.

Annex 16: Fleming, D J. Jacques, P F. Tucker, K L. Massaro, J M. D'Agostino, R B. Sr, Wilson, P W. Wood, R J. (2001) Iron Status of the Free-living, Elderly Framingham Heart Study Cohort: an Iron-replete Population with a High Prevalence of Elevated Iron Stores. Am J Clin Nutr 73: 638-46.

26. Members noted that this study concluded that there was a low prevalence of IDA in healthy individuals in this cohort of older adults. It also concluded that routine supplementation was not necessary and illustrated concerns about high serum ferritin levels in older adults.

Annex 17 and 18: Centers for Disease Control and Prevention. (1998) CDC Report: Recommendations to Prevent and Control Iron Deficiency in the United States. MMWR Morb Mortal Wkly Rep 47:1-29.

U.S. Preventative Services Task Force. Screening for Iron Deficiency Anaemia – Including Iron Prophylaxis. In: Guide to Clinical Preventative Services. 2nd ed. Alexandria, VA: International Medical Publishing, 1996: 231-46.

27. Members noted that US guidelines for the prevention of IDA in pregnant women and pre-school children as outlined in Annex 17 and the decision processes outlined in both papers. These processes and the recommendations were discussed by the Group.

Annex 19: Pomerleau J and Primatosta P. The Association of Low Iron Stores with General Health in the Health Survey of England.

28. Members noted that this pre-publication paper concluded that neither haemoglobin nor serum ferritin were good predictors of physical or mental health. Members requested that the Secretariat provide the following additional information:

- The Expert Group on Vitamins and Minerals paper on iron.
- The SACN Framework for Evaluation of Evidence that Relates Food and Nutrients to Health (when finalised).
- Early clarification on the preferred reference and bibliographic software to be used for contributions by Members and for the final report.

Action: Secretariat

AGENDA ITEM 4

29. The Chair proposed the following first stage structure for the report and members agreed to produce an outline for each chapter for the next meeting. Following this stage the group will address how to use this generic information for specific populations and public health issues, particularly in the context of the terms of reference.

Outline Chapters

- Executive summary
- Introduction & Overview
- Iron Absorption (Assessment of Iron Status: Update of cut-off points for defining iron status and definition of table: 5.7, page: 31 BNF report. To include serum ferritin, re overload).
- Dietary Sources & Bioavailability
- Dietary Reference Values
- Iron Deficiency Anaemia
- Iron & Immune Function
- Iron, Psychomotor & Cognitive Development
- Iron & Central Nervous System
- Iron & Work Performance

30. It was agreed that at this stage members should focus on the information for each section and not the style. It was agreed that first drafts would be forwarded to the Secretariat by early June 2002. The next meeting would be in early July 2002.