

# Scientific Advisory Committee on Nutrition

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## Paper for Information: Minutes of 6<sup>th</sup> Meeting

### Agenda Item 1

For approval

# Scientific Advisory Committee on Nutrition

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## 6<sup>TH</sup> MEETING

3 October 2002, Wellington House, Waterloo Road, London

### DRAFT MINUTES

<b>Chairman</b>	Professor Alan Jackson
<b>Members</b>	Professor Peter Aggett Professor Sheila Bingham Professor John Cummings Miss Gill Fine Dr Tim Key Professor Peter Kopelman Mrs Stella Walsh Dr Anthony Williams
<b>Government Assessors</b>	Mr Tom Murray (FSA) Ms Imogen Sharp (DH) Ms Danila Armstrong (DH) Mrs Maureen Howell (Welsh Assembly) Dr Martin Donaghy (Scottish Health Executive)
<b>Secretariat</b>	Dr Alison Tedstone (FSA) Mr Ben Walters (FSA) Ms Rachel Elsom (FSA) Dr Sheela Reddy (DH) Ms Parminder Nijjar (DH)
<b>Others Attending</b>	Dr Diane Benford (FSA)

### Chair's Introduction

1. The Chair welcomed Members to the sixth meeting of the Scientific Advisory Committee on Nutrition (SACN).
2. The Committee expressed their sympathy to the family of Alison Redfern, who passed away on Tuesday 1 October. Alison had been a member of the COMA Secretariat.

3. The Chair informed Members that Ms Paulette Jones had resigned from SACN due to other commitments and it would be necessary to appoint a new lay member for the Committee.

**Action: Secretariat**

**Apologies for absence**

4. Apologies were received from Professor Annie Anderson, Dr Elizabeth Mitchell, Dr Ann Prentice, Professor Andrew Rugg-Gunn, Dr Anita Thomas, Professor Christine Williams and Dr Adrienne Cullum.

**Agenda Item 1: Minutes of last meeting (20/06/02) SACN 02/MIN 02**

5. Members were invited to comment on these minutes.
6. It was agreed that Paragraph 39 (Agenda Item 8) should be amended to read “According to standard practice, the first draft report of the Working Group on Iron would be circulated to SACN members. The next meeting of the Working Group is planned for 24 July 2002.”
7. Members agreed the minutes.

**Action: Secretariat**

**Matters Arising**

***MRC Review of Autism Research, Epidemiology and Causes (December 2001)***

8. Members were asked to comment on the MRC Report: *Review of Autism Research, Epidemiology and Causes (December 2001)*, hard copies of which had been circulated to SACN Members with relevant expertise following the last SACN meeting.
9. Members discussed its importance and relevance to the Committee and the Food Standards Agency in general. The Report was viewed as being well balanced, informative and exhaustive. It will help SACN to respond to future discussions in an informed manner.
10. Members noted that the role of nutrients and other dietary components in the pathogenesis of Autism Spectrum Disorders is unclear at present. Members were told that the report is available on the MRC web site.

**Sources of Information for Department of Health Activities (SACN/02/27)**

11. Members received the website links for information that had been requested at the last SACN meeting.

## **Key Dietary Recommendations (SACN/02/26)**

12. The paper provided a summary of key dietary recommendations made in COMA reports since the publication, in 1991, of the Dietary Reference Values (DRV) for Food Energy and Nutrients for the United Kingdom. The Secretariat confirmed that current Government dietary advice is based on COMA recommendations.
13. Members asked that the list be expanded to include *all* dietary recommendations of COMA relating to children, for example, those found in Weaning and the Weaning Diet (1994).
14. It was confirmed that the COMA report on Dietary Sugars and Human Disease (1989) was taken into account in the DRV report (1991) and it was not necessary for this to be included in the list.
15. Members requested a complete list of key COMA dietary recommendations at the next SACN meeting.

### **Action: Secretariat**

## **Agenda Item 2: Salt Subgroup Statement (SACN/02/25)**

16. The Chair expressed the Subgroup's appreciation to the Secretariat for the work done to help the Subgroup produce the draft paper. He acknowledged that the report had become a much more substantial piece of work than was originally envisaged.
17. Members were informed that any comments would be included in the draft report which would then be placed on the SACN website. The report would be drawn to the attention of key stakeholders who would be asked to send any comments within four weeks. The Subgroup would meet in December 2002 to finalise the report, with the objective that the Committee would formally review and agree the report at the meeting in February 2003.
18. The Chair outlined the report to the Committee, directing them to the Terms of Reference and the methodology employed in the identification and consideration of the relevant evidence.
19. The report and its conclusions were discussed.
20. Members agreed that a whole population approach was more appropriate than targeting advice to specific groups for salt reduction. It should be emphasised that the 6g salt/d represents a population target.
21. Members commented that it would be useful to refer to dietary exposure to salt in more detail and to indicate the major dietary sources of salt, including the contribution of processed foods. It was noted that since COMA's 1994 report, some sectors in the food industry had decreased the salt content of products. However, this had not been a uniform action and some sectors have been more

active than others. Thus it would be useful if possible to include data on the changing salt content of manufactured and processed foods, since 1994.

22. Data on temporal changes in dietary exposure to salt should also be included. It was agreed that, if they were available, trend data on salt intakes in children would be a useful addition, as would data from the latest NDNS adult's survey.
23. Due to the tight time-scale, Members were asked to send any further written comments to the Secretariat by 9 October 2002.
24. DH and FSA would consider arrangements for publicising the report when it was agreed by the Committee. It was likely that the publication of the report would focus attention on efforts that are being made to reduce salt intakes. Department of Health intended to organise a wider stakeholders meeting with FSA to discuss salt reduction in the diet.

**Action: SACN Members/ Secretariat**

**Agenda Item 3: Update on Child and Maternal Nutrition (SACN/02/29)**

25. Members agreed the membership of the Subgroup on Child and Maternal Nutrition.
26. Dr Anthony Williams would chair the Subgroup. Dr Williams highlighted that other experts would be co-opted temporarily to the group when additional expertise was required.
27. The Committee were informed that the MRC were currently setting up a review to assess the "Prevention of adult disease through interventions in early life: a systematic review of infant and childhood growth". This would consider the evidence relating patterns of early childhood growth to outcomes in later childhood and adult life. Since there would be considerable overlap between the remit of the MRC Review and the remit of the SACN Subgroup on Child and Maternal Nutrition, it would be necessary to ensure that there was no duplication of effort. Members were pleased to hear that Dr Williams would be a member of the MRC Review.

**Agenda Item 4: EVM – Draft Report for Consultation (SACN/02/24)**

28. Dr Diane Benford, of the Secretariat to the Expert Group on Vitamins and Minerals (EVM), introduced the report to SACN members.
29. Members were informed that EVM was an *ad hoc* group set up with the specific purpose to look at all information on vitamins and minerals and to determine whether it was possible to set Safe Upper Levels of intake. A Safe Upper Level was defined as a maximum supplemental or total level of nutrient that can be taken safely, every day over a lifetime, for every individual i.e. it did not represent a recommended average level of consumption.

30. Safe Upper Levels were established for 9 vitamins and minerals, based on either supplement intervention studies or animal studies. Where there were insufficient data, the EVM provided guidance on what might represent a safe intake. Data were inadequate to establish either Safe Upper Levels or guidance for germanium, vanadium and sodium chloride. The EVM advised that sodium chloride should not be used in supplements or fortification because of the evidence for graded effects at all levels of dietary intake.
31. Members commented that the chapter on sodium chloride was not in accordance with the draft findings of the SACN Sub group on Salt. Of particular concern were the views on the effect of salt exposure on normotensive individuals. It was agreed to pass key studies to the EVM secretariat.
32. Members queried the exclusion of sulphur from the report. Sulphur was excluded from the EVM Report because it was not used in supplements in the United Kingdom, and was primarily found in amino acids. SACN expressed some concern that a significant proportion of sulphur in the diet came from food additives which was in addition to that from the amino acids.
33. The draft EVM report had gone out to Consultation with a closing date for comments of 21 November 2002. EVM would meet again to discuss comments and amend the paper where necessary. The final document would be made available on the FSA Website ([www.food.gov.uk](http://www.food.gov.uk)) and by hard copy. Findings would be fed into the European regulatory process.
34. SACN members congratulated EVM on the magnitude of their task and the production of a superb reference document. An official response from SACN to EVM will be prepared.
35. The Secretariat would relay the above appreciative comments to the EVM Secretariat and Chair, and individual members were invited to send their comments on the report independently to the EVM secretariat, by November 21<sup>st</sup> 2002.

**Action: Members and Secretariat**

**Agenda Item 5: Complex Carbohydrates. Report on a review of FSA research (SACN/02/30)**

36. The report on the FSA's Complex Carbohydrates Research Programme was presented. Members were invited to comment on the Report.
37. It was noted that complex carbohydrates were a component of dietary carbohydrate, a macronutrient group with many properties and health benefits, and needed to be seen in that context. A comprehensive analytical approach for measuring carbohydrates, including complex carbohydrates, in the diet is still lacking and an informed classification of different dietary carbohydrates is required before embarking on large-scale intervention studies of their effects.

**Agenda Item 6a: Update from FSA (SACN02/31)**

38. Mr Tom Murray introduced the paper and Members were invited to comment.
39. The FSA was keen to strengthen the dissemination and debate of research programmes and projects, and a number of workshops involving international experts were being planned for late 2002 and early 2003. A follow-up to the Agency's Action Plan on Nutrition (presented to the FSA Board in December 2001) would be available in December 2002.
40. The review of the Dietary Survey Programme was discussed. Members stressed the importance of the methodology, the need for data to be comparable, and the value of longitudinal studies. A questionnaire to identify the information needs of the Agency, other government departments and other stakeholders, has been designed. Members asked whether industry had been asked to comment and requested that copies of the questionnaire be circulated.
41. Members expressed concerns about the FSA leaflets on maternal and child nutrition in which COMA advice on vitamin D had been missed out. The Committee was assured that the comments would be taken into account in any review of the leaflet.

**Action: Secretariat**

**Agenda Item 6b: Research on Diet and Nutrition commissioned under the Department of Health's Policy Research Programme (SACN02/32)**

42. Members had requested information on DH's Policy Research Programme at (PRP) the previous SACN meeting. The paper gave details of the research programme, publications available and information on the future planning of research programmes.
43. The Secretariat confirmed that the call for research for DH's PRP did not include specific research on cancer but it was acknowledged that DH was part-funding the major study – "European Prospective Investigation into Cancer and Nutrition" (EPIC). Currently, DH was reviewing future research programmes.

**Agenda Item 6c: DH Update on Nutrition Initiatives (SACN02/33)**

44. Ms Danila Armstrong introduced the paper and Members were invited to comment.
45. Members discussed the evidence on fruit and vegetable consumption and health. They agreed that the evidence base was not robust enough to specify which fruit and vegetables are most beneficial for health.
46. Members pointed out that there was no Guideline Daily Amount for sugar (Paragraph 12).
47. Members were informed of the Five a day logo which had been developed as part of the Five a day communications programme to help people recognise the Five a

day message and introduce consistency in the message. In the first instance, the logo would be available for use on fresh, frozen, canned and dried fruit and vegetables without added sugar, fat or salt, and associated promotional material produced by DH and wider stakeholders including industry and voluntary organisations. The logo would be available for use in couple of months. DH would also be undertaking further work on developing guidance for the use of the logo on composite foods. Gill Fine declared an interest and requested that the information in Annex 1 should be checked for accuracy. DH agreed to check with industry contributors to Annex 1 that they were content for the annex to be placed on the SACN website.

**Action: Secretariat**

**Agenda Item 6d: Update from DHSSPS Northern Ireland (SACN02/34)**

48. This paper was tabled for information.

**Agenda Item 6e: Update from The Scottish Executive Health Department (SACN02/35)**

49. Dr Martin Donaghy introduced the paper and invited Members to comment.

50. Members discussed the possible fortification of alcoholic beverages with thiamine as a preventative measure against the brain disorder Wernicke's Encephalopathy. They questioned the prevalence of Wernicke's Encephalopathy required for fortification to be considered. They were informed that the prevalence of Wernicke's Encephalopathy had not yet been established.

51. Members were informed that the Scottish Executive Health Department is planning major health initiatives to be launched in January 2003. Members discussed the recent Food Advisory Committee Review of Food Labelling 2001. This led to a discussion on logos denoting "healthy" food products. Members noted such logos may confuse consumers.

**Agenda Item 6f: Government Update on Nutrition Related Activities – The National Assembly for Wales**

52. Mrs Maureen Howell introduced the paper.

53. Members commended the Nutrition and Catering Framework which would help ensure that nutrition is an integral part of patient care.

**Agenda Item 7: WHO/FAO report on Health and Nutritional Properties of Probiotics in Food Industry including Powder Milk with Live Lactic Acid Bacteria (SACN/02/37)**

54. Members noted the paper and commented that it was very timely.

**Agenda Item 8: Parliamentary Questions Related to SACN (SACN02/38)**

55. Members noted the paper.

**Any Other Business**

56. The Secretariat would contact members with a two-year tenure on SACN.

**Action: Secretariat**

57. The Chair directed Members to the recently published 'Tomorrow's Doctors 2002' by the General Medical Council that provided updated guidance on medical curricula. It stated that doctors in training "must know about and understand the role that lifestyle including diet and nutrition can play in promoting health and disease". Members commented that this represented a watershed in medical education.

58. Members congratulated Professor Kopelman on the Royal College of Physicians report, Nutrition and Patients: 'A Doctor's Responsibility', which emphasised the need for the medical profession to recognise nutrition as an important aspect of clinical practice. Professor Kopelman had chaired the Working Group.

59. Members were directed to the table providing dates for future meetings for SACN and its Sub- and Working- Groups. The next SACN meeting would be held on 12 February 2003. Members would be informed of the venue and time of the meeting in due course.

# Scientific Advisory Committee on Nutrition

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## **Paper for information: Key dietary recommendations**

### **Agenda item: Matters arising**

The attached paper provides a summary of dietary recommendations, as established by the Committee on Medical Aspects of Food and Nutrition Policy (COMA).

Details about the work of COMA can be obtained from:  
<http://www.doh.gov.uk/coma/>

Members who would like to receive a copy of any of the reports should contact the Secretariat. COMA reports were published by The Stationary Office / HMSO.

## **COMA (1991) Dietary Reference Values for Food Energy and Nutrients for the United Kingdom- see Annex 1**

### **COMA (1994) Weaning and the Weaning Diet - see Annex 2**

### **COMA (1994) Nutritional Aspects of Cardiovascular Disease**

- Saturated fat  
reduce to no more than 10% energy
- Total fat  
reduce to no more than 35% energy
- N-3 PUFAs  
increase to 0.2 g/day (1.5g/week)
- Complex carbohydrate  
increase to approximately 50% energy
- Sugars (added)  
no more than 10% energy per day
- Dietary fibre  
increase in non-starch polysaccharides to 18g per day
- Sodium (salt)  
reduce to no more than 6g salt per day
- No rise in dietary cholesterol

(These recommendations do not apply to children below the age of 2 years, for whom adequate energy intake for growth remains paramount. Between the ages of 2 and 5 years a flexible approach to the timing and extent of dietary change should be taken. By the age of 5 years children should be consuming a diet consistent with the recommendations above. The report makes specific reference to milk; semi-skimmed milk can be introduced after age 2 for children with a diverse diet and skimmed milk can be introduced after age 5).

### **COMA (1998) Nutritional Aspects of the Development of Cancer**

- Maintain a healthy body weight within the BMI range 20-25 kg/m<sup>2</sup> and not to increase it during adult life.
- Increase intakes of a wide variety of fruit and vegetable (by 50% to at least 5 portions per day).
- Increase intakes of non starch polysaccharides (dietary fibre) from a variety of food sources.
- For adults, individuals consumption of red and processed meat should not rise; higher consumers should consider a reduction; and as a consequence of this the population average will fall.
- The recommendations should be followed in the context of COMA's wider recommendations for a balanced diet rich in cereals, fruits and vegetables.

In addition, the report recommended:

- the **avoidance of  $\beta$  carotene supplements** as a means of protecting against cancer
- the need to **exercise caution in the use of high doses of purified supplements** of other vitamins and minerals as they cannot be assumed to be without risk.

### **COMA (1998) Nutrition and Bone Health: with particular reference to calcium and vitamin D**

- A healthy lifestyle to maintain bone health should be encouraged at all ages. A varied and adequate diet and regular weight bearing physical activity appropriate for the individual are beneficial. An adequate vitamin D status can be achieved from exposure of the skin to

summer sunlight although this needs to be balanced against increasing the risk of skin cancer. Local public health policies should integrate these recommendations in their plans for improving the health of their population.

- No change is recommended in the existing UK DRVs for calcium because of insufficient evidence. Recent data do not support the increment for lactation, which might not be necessary.
- Dietary means of achieving an adequate calcium intake, as assessed against Dietary Reference Values, should be encouraged.
- The present policy of fortifying flour with calcium should continue.
- The existing UK DRVs for vitamin D are endorsed.
- The public and health professionals should be better informed about the importance of achieving adequate vitamin D status including the appropriate use of vitamin supplements for those most at risk of vitamin D deficiency. The most vulnerable groups include:
  - infants, young children and pregnant women from Asian families as well as young African-Caribbean children reared on strict exclusion diets;
  - older people who are housebound, who live in institutions or who eat no meat or oily fish;
  - and people who rarely go outdoors or who, when they do so wear clothes, which fully conceal them.
- Local health authorities and health professionals should be aware that sporadic cases of clinical vitamin D still occur. They should be alert to the possibilities of inadequacies in their population from knowledge of the social and cultural antecedent of vitamin D deficiency and should consider instituting appropriate community-based preventative programmes.
- The statutory requirement to fortify margarine with vitamin should be maintained; reduced fat spreads should also be fortified with vitamin D but providing the majority of manufacturers continue to do this on a voluntary basis there is no need for this to be a statutory requirement.
- Maintenance of a healthy body weight at all ages should be encouraged. Being underweight is particularly detrimental to bone health.
- A lifestyle which includes regular physical activity, particularly that which is weight bearing, should be encouraged at all ages, and a sedentary lifestyle discouraged.

### **COMA (2000) Folic Acid and the Prevention of Disease**

All women who may become pregnant are advised to increase their daily intake of folic acid by 400µg by eating more folate-rich foods and foods fortified with folic acid - especially breads and breakfast cereals. But most importantly, women who are trying to conceive or who are likely to become pregnant, are advised to take a daily 400µg folic acid until the 12<sup>th</sup> week of pregnancy. To prevent the recurrence of a neural tube defect, folic acid supplements at a daily dose of 5 milligrams (5000 micrograms) are advised and this can be reduced to 4mg, if this dose becomes available.

## **Annex 1:**

### **COMA (1991) Dietary Reference Values for Food Energy and Nutrients for the United Kingdom**

(extracts only)

[http://www.sacn.gov.uk/sacnoct02\\_26.pdf](http://www.sacn.gov.uk/sacnoct02_26.pdf)

## **Annex 2:**

### **COMA (1994) Weaning and the Weaning Diet**

(extracts only)

# 1. Recommendations

## 1.1 Recommendations for weaning practices

### *The process of weaning. Chapter 3*

R1 The majority of infants should not be given solid foods before the age of four months, and a mixed diet should be offered by the age of six months.

R2 Infants should be supervised during meal times. Semi-solid food should be given from a spoon and not mixed with milk or other drink in a bottle. From six months of age, infants should be introduced to drinking from a cup and from age one year feeding from a bottle should be discouraged.

### *Food energy and macronutrients. Chapter 5*

R3 The provision of adequate dietary energy to ensure normal growth and development should be a principle determinant of the diets of children under five years of age.

R4 An adequate intake of protein with a proper balance of essential amino acids should be ensured during weaning. A diet that is restricted, for whatever reason, should particularly offer a variety of foods at each meal providing a mixture of protein sources.

RS Dietary recommendations from the COMA Working Group on Nutritional Aspects of Cardiovascular Disease concerning average levels of fat intakes do not apply before the age of two years, but apply in full from the age of five years. A flexible approach is recommended to the timing and extent of dietary change for individual children between the ages of two and five years.

R6 For groups of children the average intake of non-milk extrinsic sugars should be limited to about ten per cent of total dietary energy intake.

R7 Provided energy intake is adequate, the proportion of energy supplied as starch in the weaning diet should increase as the proportion derived from fat decreases.

### *Vitamins: Chapter 6*

R8 Adequate vitamin status should be encouraged for mother and baby through a varied diet and moderate exposure to summer sunlight.

R9 Foods and drinks which provide good sources of vitamin C should be encouraged in the weaning diet.

R10 Breastfed infants under six months do not need vitamin supplementation provided the mother had an adequate vitamin status during pregnancy. From age six months, infants receiving breast milk as their main drink should be given supplements of vitamins A and D.

R11 Infants fed on manufactured milks do not need vitamin supplements provided their consumption of infant formula or follow on formula milk is more than 500 ml per day. If they are consuming infant formula or follow on milk in smaller amounts or they are being given cow's milk, vitamins A and D supplements should be given.

R12 Between the ages of one to five years, vitamins A and D supplements should be given unless adequate vitamin status can be assured from a diverse diet containing vitamins A and D rich foods and from moderate exposure to sunlight.

***Minerals: Chapters 7 and 8***

R13 Dietary sources of minerals should be provided by offering a variety of foods. Vitamin C in adequate amounts should be ensured with meals to assist absorption and this is particularly important if the diet is meat free. Continued use of iron-enriched infant formula or a follow on milk as a main drink after the first year should be considered if there are concerns about the adequacy of iron in the diet.

R14 There should be an adequate dietary intake of calcium. For young infants the dietary calcium to phosphorus ratio should be between 1.2 and 2.0 by weight (0.9:1 to 1.6:1 (molar)).

***Milk and other drinks. Chapter 9***

R15 Breast milk provides the best nourishment during the early months of life. Mothers should be encouraged and supported in breastfeeding for at least four months and may choose to continue to breastfeed as the weaning diet becomes increasingly varied.

R16 An infant who is not breastfed should receive infant formula or follow on milk. Follow on milk is not recommended as replacement for breast milk or infant formula before six months.

R17 Pasteurised whole cow's milk should only be used as a main milk drink after the age of one year. Intakes of iron and zinc and vitamins A and D should be ensured from other dietary sources or from supplements. Semi-skimmed cow's milk is not suitable as a drink before the age of two years but thereafter it may be introduced gradually if the child's energy and nutrient intake is otherwise adequate and if growth remains satisfactory. Fully skimmed cow's milk should not usually be introduced before the age of five years.

R18 Goat's and sheep's milks should not be given to infants, and if used after this age the milk must be pasteurised or boiled.

R19 Milk (also including breast milk, infant formula, follow on formula) or water should constitute the majority of the total drinks given. Other drinks should usually be confined to meal times and because of the risk to dental health, they should not be given in a feeding bottle or at bedtime.

***Foods in the weaning diet: Chapter 10***

R20 Non-wheat cereals, fruit, vegetables and potatoes are suitable first weaning foods. Salt should not be added and additional sugars should be limited to that needed for palatability of sour fruits. Between six and nine months of age the amount and variety of foods including meat, fish, eggs, all cereals and pulses should be increased and the number of "milk" feeds reduced. Food consistency should progress from pureed through minced/mashed to finely chopped. By the age of one year the diet should be mixed and varied.

R21 In the later states of weaning, three meals per day are suggested with two or three snacks in addition.

R22 The labels of commercial baby foods should provide consistent information which is understandable to parents.

R23 Foods given during weaning should be prepared, handled and stored in a hygienic way.

***Food allergy: Chapter 11***

R24 Where there is a family history of atopy or gluten enteropathy, mothers should be encouraged to breastfeed for six months or longer. Weaning before four months should particularly be discouraged and the introduction of foods traditionally regarded as allergenic should be delayed until six months at the earliest.

***Vegetarian weaning and other dietary preferences: Chapter 11***

R25 Infants being weaned on diets restricted in animal protein should particularly be offered a variety of foods at each meal. Protein sources should be mixed. Each meal should provide vitamin C, and an energy supplement from a fat source should be considered if there are doubts about the adequacy of energy intake.

R26 The range of commercial weaning foods should be enlarged to offer a wider choice to those with special cultural or religious dietary requirements and they should be appropriately labelled.

### ***Growth and health: ~ Chapter 12***

R27 Infants and young children who are failing to thrive should be identified as early as possible, and a nutritional cause should be investigated.

### ***Dental health: Chapter 13***

R28 Weaning foods should usually be free of, or low in, non-milk extrinsic sugars including sugars derived from fruit juices and fruit concentrates. The range of commercial foods meeting these criteria should be increased. Foods and drinks which predispose to caries should be limited to main meal times. The sugars content of all weaning foods and drinks should be shown on food labels.

R29 Water supplies should be fluoridated to the optimum of one part per million. For infants and young children in areas that are not fluoridated, fluoride supplements may be advised where there is a particular risk of caries. .

### ***Educational and professional support: Chapter 14***

R30 Professional staff who advise parents about weaning should be trained and should have access to dietetic expertise.

R31 Local nutrition policies for infants and children should be culturally acceptable to the communities concerned and should be developed through local multi-disciplinary cooperation including voluntary interests.

R32 All parents should receive nutrition education including information about weaning and the weaning diet. Education about feeding infants and young children should extend to the general public including school-children .

### ***1.2 Recommendations for research***

R33 Information about national patterns of diet and nutrition status should be available for the first two years of life.

R34 Research should be directed to understanding normal weaning and to establishing guidance on the rate at which the liquid diet of early infancy should change to a diet where solids provide the major part of energy and nutrient needs. The factors which predispose to disorders of weaning should be defined.

R35 The optimal quantities and qualities of dietary fats, during infancy and young childhood should be determined particularly through long-term studies.

R36 The effects on nutritional status of high intakes by young children of foods which are rich in non-starch polysaccharides and also often contain high phytate levels should be evaluated.

R37 Research should be encouraged on the biological functions of the antioxidant vitamins C and E and the carotenoids, their turnover, requirements in childhood and the possible benefits or detrimental effects of high intakes, als on the inter-relationship of these vitamins with fatty acids, selenium, iron, zin copper and manganese on the levels of antioxidant activity in developing infai tissues.

R38 The immediate and long-term effects of iron deficiency with and withol anaemia during weaning on health and development should be defined moi precisely.

R39 There should be further investigation of the relationship between irc status and the quality and quantity of dietary intakes of iron including tt extent to which iron fortified milks and foods contribute absorbable iron.

R40 Means of preventing iron deficiency through effective nutrition education should be investigated further.

R41 Laboratory criteria for anaemia and for iron deficiency should be defined and used to determine the prevalence of anaemia and of iron deficiency in the general population of children under two years of age in the UK.

R42 There should be an assessment of the need for universal or population sub-group screening for iron deficiency anaemia in infants and young children and for the feasibility and acceptability of such a programme.

R43 The natural history of iron deficiency in infants and children in the country should be determined.

R44 The best method of intervention and follow up of populations of young children who have been screened for iron status should be determined.

R45 Research should be encouraged on calcium, phosphorus and magnesium metabolism in children. The interactions of these nutrients together with factors which modulate them, including diet and the mechanisms for adaptation to diets poor in these nutrients should be clarified.

R46 Investigations should be encouraged to determine the optimal balance of iron, zinc and copper in the weaning diet.

R47 There should be further investigation of dietary factors which initiate atopic disorders.

R48 There should be further research into the nutritional causes of failure to thrive.

R49 Criteria for defining obesity in young children should be standardised. The determinants of obesity in young children, its prevalence and population changes in degrees of obesity should be examined and short and long-term consequences assessed.

R50 Priority should be given to continuing investigations into the effect of diet and nutrition of the infant and young child on health in childhood and adult life.

R51 Methods should be developed to foster professional and public awareness of the importance of the weaning diet to dental health and to promote good practices especially in groups at risk of dental disease.

R52 More effective strategies for public education should be developed and they should be based on information from research.

### ***Annex III. The Diet During Weaning***

1. A healthy diet at any age is most easily achieved if it includes a wide diversity of foods. If the range of foods in a person's diet is great, chance alone will determine that all the nutrients needed are likely to be obtained. However, to give reassurance that all types of foods are being included, and to make the choosing of a healthy diet easier, foods have traditionally been allocated to different food groups.
2. The group to which a food is allocated may reflect the source of the food such as "Dairy products" or alternatively, the major nutritional contribution from the foods in the group, such as "The starchy foods". Some foods span two groups, for instance, potatoes which are starchy and a vegetable. Tofu and soya products are in the "Dairy products" because they offer a source of nutrients similar to those in dairy products and they are used in the diet as alternatives for those who do not consume milk and milk products.
3. The group called "Occasional foods" should be of secondary significance in the diet and takes account of treats such as sweets and ice cream, of accompaniments such as salt and jam, and fruit drinks as well as other foods. None of these should constitute a major component of the diet at any age but they cannot be ignored if the full dietary intake is being considered.
4. A weaning diet should have as one of its goals the establishment of a diet with a rich diversity of foods. The pre-school child should be enjoying a broad diet which contains items from all four prime food groups. At birth, milk provides a completely satisfying diet for a healthy baby and no other foods or drinks are needed. At weaning, a diet of milk is no longer enough for the growing baby and other foods need to be included in the diet. It is important to achieve this major change in dietary practices safely and effectively with the minimum of stress for the baby and the parents. Using the food groups as illustrated in tables A and B may be helpful in achieving these aims.

## NUTRITIONALLY ADEQUATE DIET

	EXAMPLES	MAJOR NUTRIENTS
DAIRY PRODUCTS & SUBSTITUTES	Breast milk, infant formula, cow's milk, lassi, yoghurt*, fromage frais*, cottage cheese, hard cheese.  Infant soya formula, tofu.	Energy (calories) and fat. Protein, calcium, vitamin A, B vitamins, zinc.  Iron and vitamin D in breast and formula milks.
THE STARCHY FOODS	Bread, rolls, pitta bread, chapatti, breakfast cereals, baby cereal, plain and savoury biscuits, noodles, spaghetti & other pasta, semolina, rice, oats, millet, potato, yam, plantain.	Energy (calories). Protein, thiamin, niacin, folic acid, vitamin B6, biotin, zinc.  Calcium, iron ( <i>fortified cereal &amp; bread</i> ),  Non-starch polysaccharide ( <i>fibre</i> ).
VEGETABLES & FRUITS	Leafy and green vegetables ( <i>cabbage, green beans, peas, broccoli, leeks</i> ).  Root vegetables ( <i>carrots, onion, turnip</i> ).  Salad vegetables ( <i>tomato, cucumber</i> ), mushrooms, sweetcorn, marrow.  Fruit ( <i>apple, banana, peach, orange, melon</i> ), fruit juices.	Vitamins A and C and folate.  Non-starch polysaccharide ( <i>fibre</i> ).
MEAT & MEAT ALTERNATIVES	Lean lamb, beef, pork, chicken, turkey, fish, fish fingers, egg, liver, kidney, sausages, burgers.  Lentils, dhal, peas, beans, baked beans, gram.	Energy (calories) and fat, protein, iron, zinc, B vitamins ( <i>B12 animal foods only</i> ).
OCCASIONAL FOODS	Cakes, sweet biscuits, sweetened squash, sweetened desserts & milk drinks, ice cream, cream, sugar, jam, honey etc, crisps, savoury snacks, fried & fatty foods.	none of these foods are necessary in the diet  They may contain a lot of fat, energy, sugar, or salt.  Try not to use foods from this group every day.

\* These products should preferably be unsweetened varieties

**TABLE B            GUIDE TO FOODS DURING WEANING**

	4-6 MONTHS	6-9 MONTHS
MILK  DAIRY PRODUCTS & SUBSTITUTES	MINIMUM 600 ml BREAST OR INFANT FORMULA DAILY  Cow's milk products can be used in weaning after ( <i>eg yoghurt, custard, cheese sauce</i> ).	500-600ml BREAST MILK, INFANT FORMULA OR FOLLOW-ON FORMULA DAILY  Also use any milk** to mix solids.  Hard cheese ( <i>eg Cheddar</i> ) can be cubed or grated & used as  `finger food'.
THE STARCHY FOODS	INTRODUCE AFTER 4 MONTHS  Mix smooth cereal with milk; use low-fibre cereals ( <i>eg rice based</i> ).  Mash or puree starchy vegetables.	2-3 SERVINGS DAILY  Start to introduce some wholemeal bread & cereals.  Foods can be a more solid 'lumpier' texture. Begin to give  `finger foods' ( <i>eg toast</i> ).
VEGETABLES & FRUITS	INTRODUCE AFTER 4 MONTHS  Use soft-cooked vegetables & fruit as a smooth puree.	2 SERVINGS DAILY  Raw soft fruit & vegetables ( <i>eg banana, melon, tomato</i> ) maybe used as `finger foods'.  Cooked vegetables & fruit can  be a coarser, mashed texture.
MEAT & MEAT ALTERNATIVES	INTRODUCE AFTER 4 MONTHS  Use soft-cooked meat/pulses.  Add no salt or sugar or minimum quantities to food  during or after cooking.	1 SERVING DAILY  Soft-cooked minced or pureed meat/fish pulses.  Chopped hard-cooked egg can  be used as a `finger food'.
OCCASIONAL FOODS	Choose low-sugar desserts; avoid high salt foods.	Encourage savoury foods rather than sweet ones.  Fruit juices are not necessary try to restrict to meal times or alternatively offer water/milk.

\*\* Includes breast milk, infant formula, follow-on formula and whole cow's milk

9-12 MONTHS	AFTER 1 YEAR	EXTRA INFORMATION
<p>500-600 ml BREAST MILK OR INFANT MILKS DAILY</p> <p>Also use any milk** to mix solids.</p>	<p>MINIMUM 350 ml MILK DAILY OR 2 SERVINGS DAIRY PRODUCT</p> <p>(<i>eg yoghurt, cheese sauce</i>)</p> <p>Whole milk can be used as a drink &amp; soft cheeses included after 1 year.</p> <p>Lower fat milks can be used in cooking, but not as main drink.</p>	<p>If milk drinks are rejected, use alternatives (<i>eg cheese</i>) &amp; give water to drink.</p> <p>Discourage large volumes of milk after 1 year (ie more than 600 ml) as it will stop appetite for other foods.</p> <p>Discourage feeding from a bottle after 1 year.</p>
<p>3-4 SERVINGS DAILY</p> <p>Encourage wholemeal products; discourage foods with added sugar (<i>biscuits, cakes etc</i>).</p> <p>Starchy foods can be of normal adult texture.</p>	<p>MINIMUM OF 4 SERVINGS DAILY</p> <p>At least one serving at each mealtime.</p> <p>Discourage high fat foods (<i>crisps, savoury snacks &amp; pastry</i>).</p>	<p>Most baby &amp; breakfast cereals are fortified with iron &amp; B vitamins.</p> <p>Cereals and bread derived from wholemeals are a richer source of nutrients &amp; fibre than refined cereals.</p>
<p>3-4 SERVINGS DAILY</p> <p>Encourage lightly-cooked or raw foods.</p> <p>Chopped or finger food' texture is suitable.</p> <p>Unsweetened orange juice with meals especially if diet is meat free.</p>	<p>MINIMUM OF 4 SERVINGS DAILY</p> <p>Encourage unsweetened fruit if vegetables are rejected.</p> <p>Food can be adult texture though some fibrous foods may be difficult (<i>eg celery, radish</i>).</p>	<p>Vegetables may be preferred raw (<i>eg grated carrot, chopped tomato</i>) or may need to be disguised in soups, pies and stews.</p> <p>To improve iron absorption, give vitamin C (<i>fruits &amp; vegetables</i>) with meal.</p> <p>every</p>
<p>MINIMUM 1 SERVING DAILY FROM ANIMAL SOURCE OR 2 FROM VEGETABLE SOURCE</p> <p>In a vegetarian diet use a mixture of different vegetable and starchy foods (<i>macaroni cheese, dhal &amp; rice</i>).</p>	<p>MINIMUM 1 SERVING DAILY OR 2 FROM VEGETABLE SOURCES</p> <p>Encourage low-fat meat &amp; oily fish (<i>sardine, herring, mackerel</i>).</p> <p>Liver pate can be used after 1 year.</p>	<p>Trim fat from meat.</p> <p>Use little or no added fat when cooking foods which already contain fat such as meat.</p>
<p>May use moderate amounts of butter, margarine. Small amounts of jam (if necessary) on bread.</p> <p>Try to limit salty foods</p>	<p>Limit crisps &amp; savoury snacks. Give bread, or fruit if hungry between meals.</p> <p>Do not add sugar to drink.</p> <p>Try to limit soft drinks to mealtimes.</p>	<p>Encourage a pattern of three main meals each day.</p> <p>Discourage frequent snacking on fatty or sugary foods.</p>