



Annual Report 2013

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Foreword

I am pleased to introduce the 13th annual report of the Scientific Advisory Committee on Nutrition (SACN), in which we will cover the work of the Committee throughout 2013.

In May 2013, the Committee published its “*Position Statement on Selenium and Health*”, in which it concluded that there is insufficient evidence of a public health issue or rationale to justify undertaking a more detailed, full risk assessment.

Work continued on the SACN review of carbohydrates and health, and the Committee held early discussions of one chapter at a meeting in October 2013. The SACN Carbohydrates and Health Working Group and the secretariat worked hard in 2013 to progress the review, in order that several more chapters were ready for discussion and publication in draft for public consultation in 2014.

The SACN Vitamin D Working Group held four meetings in 2013 to discuss its review of vitamin D and health, with the plan to bring it to the main Committee for discussion in 2015, whilst the joint work of the Subgroup on Maternal and Child Nutrition (SMCN) and the Committee on Toxicity (COT) on the review of complementary and young child feeding continued. In addition, the SMCN provided invaluable advice on the use of probiotic bacteria as an ingredient in infant formula and follow-on formula.

In 2013, we welcomed Mrs Gemma Paramor as lay representative on the Committee, following the departure of Mrs Christine Gratus, who stepped down after 10 years on SACN. It has been a pleasure working with Christine and we wish her all the best for the future.

As always, I would like to thank the members of the Committee and its Working Groups and Subgroups for their continued commitment to the work of SACN. My thanks also go to the secretariat for its hard work drafting SACN’s reports and position statements.

I would also like to acknowledge the contribution of Professor Margaret Rayman to the SACN “*Position Statement on Selenium and Health*”.

A handwritten signature in blue ink that reads "Ann Prentice". The signature is fluid and cursive, with "Ann" on top and "Prentice" below it.

Dr Ann Prentice

Chair

About the Committee

SACN is a UK wide Advisory Committee set up to provide advice to Public Health England as well as other government agencies and departments. Its remit includes matters concerning nutrient content of individual foods, advice on diet and the nutritional status of people.

Members are appointed as independent scientific experts on the basis of their specific skills and knowledge. There are also two members to represent consumers.

The SACN is supported in its work by a secretariat provided by Public Health England. The secretariat members have scientific expertise that enables them to provide SACN members with comprehensive background information and briefing papers to inform the decision-making processes of the Committee.

SACN's terms of reference are shown at Annex 1.

Openness

SACN is committed to a policy of openness and engagement with interested parties. Papers for the Committee's meetings, agendas and minutes are posted on the [Committee website](#), subject to certain exceptions on grounds of commercial or other sensitive information. As part of the policy of openness, all of the Committee's three main meetings are held in open session.

Membership

The Committee welcomed Mrs Gemma Paramor as lay representative on SACN, following the departure of Mrs Christine Gratus in April 2013.

There were five re-appointments in 2013, the durations of which vary from two to three years in order to stagger the end dates of members' terms. Dr Ann Prentice, Ms Gill Fine and Professor Monique Raats were re-appointed for a further three years; and Professor Ian Macdonald and Dr David Mela for a further two.

Details on Membership of the Committee and its Subgroups can be found in Annex 2.

Biographies of all members can be found in Annex 3.

Remuneration and Committee finance

Remuneration and Committee finances are shown in Annex 4.

Declaration of interests

The Committee follows government advice on declaration of interests. Members are asked to declare where there may be a conflict of interest with regard to an issue under scrutiny at each meeting, which is noted in the minutes. Members are also requested to provide the secretariat with annual declarations of interests, which have been detailed in Annex 5.

Procedures

Meeting agendas are compiled from a number of sources including outstanding items from previous meetings, items suggested by the Committee, outside bodies including other Scientific Advisory Committees as well as items brought forward from the Committee's work programme. Updates from SACN Subgroups and Working Groups are regular features on the agenda.

SACN's Work in 2013

This is the thirteenth annual report of SACN and covers the calendar year 2013.

The Committee met three times in 2013 on 6 February, 12 June and 9 October. Dr Ann Prentice chaired all SACN main meetings in 2013.

The Subgroup on Maternal and Child Nutrition met three time in 2013, on 22 March, 16 May and 25 September; the Vitamin D Working Group met four times on 19 February, 15 May, 1 October and 4 December; and the Carbohydrates Working Group met three times, on 24/25 January, 17 April and 12 September.

Work Programme

The following issues were on the Committee's work programme:

- Carbohydrates and Health;
- Vitamin D and health;
- Review of complementary and young child feeding;
- Potassium-based salt replacers; and
- Military Dietary Reference Values.

More details on the progress of work on the above issues can be found in the subsequent section on SACN's Working Groups and Subgroups.

Forward Look

The Committee considers the following items to be issues for future consideration:

- Nutritional implications of new food technologies and processes;
- Health of women of reproductive age; and
- Impact of nutrition on cognitive development and performance.

Watching Brief

The Committee will keep a watching brief on the following items:

- Sustainable healthy diet - to contribute to public health nutrition messages where needed; and
- Iodine status of the UK population- to revisit when further evidence is available, including iodine status data from the National Diet and Nutrition Survey (NDNS).

SACN's Working Groups and Subgroups

The Committee has a number of Subgroups and Working Groups comprising SACN members and co-opted specialists. These groups develop recommendations and advice on specific areas of public health nutrition. The groups active during 2013 were:

- Carbohydrates Working Group
- Subgroup on Maternal and Child Nutrition
- Vitamin D Working Group

These groups report back on progress to the main Committee at each SACN meeting.

Carbohydrates Working Group

Background

This Working Group was set up in 2008 following a workshop convened by the FSA in 2007 to discuss current government advice relating to carbohydrate intake. Dietary carbohydrate was last considered by the Committee on Medical Aspects of Food Policy (COMA) in 1989 in their report on Dietary Sugars and Human Disease, the 1991 report "Dietary Reference Values for Food Energy and Nutrients for the United Kingdom" and the 1998 report "Nutritional Aspects of the Development of Cancer". It was agreed that under the remit of the Working Group a review of carbohydrates and their relationship to health outcomes should be undertaken to ensure that policy recommendations and advice are kept up to date.

Terms of reference

SACN was requested to provide clarification of the relationship between dietary carbohydrates and health and make public health recommendations. To achieve this they need to review:

- the evidence for a role of dietary carbohydrates in colorectal health in adults (including colorectal cancer, Irritable Bowel Syndrome (IBS), constipation) and in infancy and childhood;
- the evidence on dietary carbohydrates and cardio-metabolic health (including cardiovascular disease, insulin resistance, glycaemic response and obesity);
- the evidence in respect to dietary carbohydrates and oral health.
- the terminology, classification and definitions of types of carbohydrates in the diet.

Activity

The Carbohydrates Working Group met on 24 and 25 January, 17 April and 12 September 2013. In January members began to draw conclusions on the evidence for carbohydrates and their relationship to cardiometabolic health outcomes. In the spring, conclusions were drawn on both oral health and colorectal health evidence. By September, the Working Group discussed draft chapters on total carbohydrate, sugars and fibre and the presentation of carbohydrate intake data from the National Diet and Nutrition Survey.

Subgroup on Maternal and Child Nutrition

Background

The Subgroup on Maternal and Child Nutrition (SMCN) was set up as a specialist standing group to advise Government on issues relating specifically to maternal and child nutrition, an area on which Health Departments need regular scientific advice for policy-making and regulatory purposes.

Terms of reference

The terms of reference for the Subgroup on Maternal and Child Nutrition are to advise, through the Scientific Advisory Committee on Nutrition (SACN), on such aspects of child and maternal diet and nutrition, as are referred to it by Public Health England, the UK Health Departments and SACN.

Activity

The work of the Subgroup in 2013 has focussed on the review of the scientific evidence underpinning UK complementary and young child feeding advice. The terms of reference for the review and scope for the review were agreed by SACN in 2011.

At its meetings in May and September 2013, the Subgroup discussed text drafted by the Secretariat on a number of areas: the nutritional adequacy of exclusive breastfeeding to six months in relation to iron status; infant feeding and the risk of infection; and the association between the introduction of complementary foods and subsequent risk of overweight and obesity. The Subgroup also discussed the evidence that has been identified following extensive searches regarding diversification of the infant diet.

As part of the review, SACN asked the Committee on Toxicity to examine the risks of toxicity from chemicals in the infant diet and also what is known about the influence of infant diet on the development of food allergy and atopic and autoimmune disease. In 2013, the COT published Statements on phytoestrogens, vitamin A, aluminium, and lead which will inform the SMCN review. The evidence regarding dietary exposures in the first year of life and the risk of developing atopic and autoimmune disease will be reviewed by an external contractor (Imperial College London) and findings reported in 2014. Close collaboration between the two Committees will continue throughout the review process.

In addition to the two planned meetings, the Subgroup held an ad hoc meeting on 22 March 2013 to discuss probiotic bacteria as an ingredient in infant formula and follow on formula. The discussion was divided into two distinct areas addressing: 1) the microbiological safety of the probiotic bacteria as an ingredient in infant and follow on formula; and 2) the potential functional attributes of the probiotic bacteria.

Vitamin D Working Group

Background

The evidence on vitamin D and health was previously considered by SACN in 2007 (*Update on Vitamin D, Position Statement*). At that time, the committee concluded there was insufficient evidence to amend existing advice on vitamin D requirements and endorsed the DRVs set by COMA in 1991. Since then, further evidence has accumulated. Therefore at its meeting in October 2010, SACN agreed to review the DRVs for Vitamin D intake and consider whether they are still appropriate in the context of current lifestyles (e.g., advice to stay out of sun, wear sunscreen) and if DRVs were required for ages 4-64 years.

Terms of reference

To review the Dietary Reference Values for vitamin D intake and make recommendations.

This will require a risk assessment of the vitamin D status of the UK population and consideration of the:

- biochemical indicators of vitamin D status and the validity of the threshold concentrations/ranges used to assess risk of deficiency and excess;
- association between vitamin D status and various health outcomes at different life stages and in different population groups and the effects of biological modifiers;
- contribution of cutaneous vitamin D synthesis to vitamin D status in the United Kingdom taking account of the effects of modifiers of skin exposure to sunlight; the risks of skin damage and other adverse health outcomes associated with sunlight exposure;
- potential adverse effects of high vitamin D intakes;
- relative contributions made by dietary vitamin D intake (from natural food sources, fortified foods and supplements) and cutaneous vitamin D synthesis to the vitamin D status of the UK population.

Activity

The Vitamin D Working Group continued to make good progress in 2013, meeting four times in the year (February, May, October and December).

At the meetings, the Working Group considered a wide range of health outcomes which have been associated with vitamin D to identify which of these should be used as the basis for setting DRVs. After a comprehensive review of the available evidence, it was agreed that the reference nutrient intake (RNI) for vitamin D should be based on protection of bone health and that a serum concentration of 25-hydroxyvitamin D (25(OH)D) (a biochemical indicator of vitamin D status) below 25 nmol/L increased the risk of poor bone health.

The Working Group also agreed that an RNI for vitamin D should apply to the whole UK population rather than specific population groups at high risk of deficiency because data from the national Diet and Nutrition Survey (2008/09-2010/11) indicated that about 25% of the UK population had a serum 25(OH)D concentration below 25 nmol/L. The Working Group observed that there were some sections of the population with 25(OH)D concentrations below 25 nmol/L even in the summer and it was therefore likely they would remain below 25 nmol/L throughout the year. Since it would be difficult to identify these individuals it was agreed that, as a precaution, the RNI should apply throughout the year and that this would be protective of all age and population groups. Based on modelling vitamin D intake data, it was estimated that the vitamin D intake required to maintain serum 25(OH)D concentrations above 25 nmol/L in most (97.5%) of the UK population was 10 µg/day.

It was not possible for the Working Group to make recommendations on the sun exposure required in the summer to achieve a winter target 25(OH)D concentration of at least 25 nmol/L because of the number of factors that affect skin synthesis of vitamin D (e.g., amount of available sunlight, amount of time spent outdoors and skin coverage).

Annex 1

SACN's terms of reference

SACN is an advisory committee set up to replace the Committee on Medical Aspects of Food and Nutrition Policy (COMA). It advises the Government and is supported by a Public Health England secretariat.

Its advice will cover scientific aspects of nutrition and health with specific reference to:

- nutrient content of individual foods, and advice on diet as a whole, including the definition of a balanced diet and the nutritional status of people;
- monitoring and surveillance of the above;
- nutritional issues which affect wider public health policy issues, including conditions where nutritional status is one of a number or risk factors (e.g. cardiovascular disease, cancer, osteoporosis and/or obesity);
- vulnerable groups (e.g. infants and the elderly) and inequality issues;
- research requirements for the above; and
- individual members may be invited to serve on SACN's Subgroups.

All members and the Secretariat regard it as part of their role to:

- examine and challenge if necessary the assumptions on which scientific advice is formulated and ask for explanations of any scientific terms and concepts which are not clear;
- ensure that SACN has the opportunity to consider contrary scientific views and the concerns and values of stakeholders before a decision is taken; and
- ensure that SACN's advice is clear and comprehensible.

SACN has a UK wide remit and observers from the devolved administration attend SACN main meetings.

Annex 2

Membership of the Committee

Chair	Dr Ann Prentice Director, MRC Human Nutrition Research, Cambridge
Members	Professor Peter Aggett Honorary Professor, School of Medicine and Health, Lancaster University, and Emeritus Professor and Past Head of School of Postgraduate Medicine and Health
	Mrs Christine Gratus (Lay representative) until April 2013 Retired advertising and marketing research director.
	Ms Gill Fine Public Health Nutritionist
	Professor Paul Haggarty Head of Lifelong Health, Rowett Institute of Nutrition and Health, University of Aberdeen
	Professor Timothy Key Professor in Epidemiology and Deputy Director of Cancer Epidemiology Unit, University of Oxford
	Professor Susan Lanham-New Head of the Nutritional Sciences Division, University of Surrey
	Professor Julie Lovegrove Professor of Metabolic Nutrition and Deputy Director of the Institute of Cardiovascular & Metabolic Research at the University of Reading
	Professor Ian Macdonald Professor of Metabolic Physiology at the University of Nottingham and Director of Research in the Faculty of Medicine and Health Sciences
	Professor Harry McArdle Deputy Director of Science and the Director of Academic Affairs at the Rowett Institute of Nutrition and Health, University of Aberdeen
	Dr David Mela (Industry representative) Science Leader, Unilever R&D Vlaardingen, The Netherlands
	Mrs Gemma Paramor (Lay representative) from May 2013 Finance professional in accounting and fund management
	Professor Hilary Powers Professor of Nutritional Biochemistry and Head of Human Nutrition Unit, University of Sheffield
	Professor Monique Raats Director of the Food, Consumer Behaviour and Health Research Centre, University of Surrey
	Professor Angus Walls Professor of Restorative Dentistry and Director of the Edinburgh Dental Institute

Dr Stella Walsh (Consumer representative)
Postgraduate Programme Leader, Leeds Metropolitan University

Dr Anthony Williams
Formerly, Reader in Child Nutrition and Consultant in Neonatal Paediatrics, St George's, University of London

Professor Ian Young
Professor of Medicine and Director of the Centre for Public Health at Queen's University Belfast

Observers Dr Alison Tedstone
Public Health England

Ms Anne Milne
Food Standards Agency Scotland

Ms Sarah Rowles
The Welsh Assembly, Health Promotion Division

Dr Naresh Chada
Department of Health, Social Services and Public Safety, Northern Ireland

Ms Ruth Balmer
Food Standards Agency Northern Ireland

Secretariat **Public Health England**

Ms Rachel Elsom
Mr Michael Griffin
Ms Emma Peacock
Mrs Vicki Pyne
Ms Mamta Singh
Mr Heiko Stolte

Membership of the Carbohydrates Working Group

Chair	Professor Ian Macdonald (SACN member) Professor of Metabolic Physiology at the University of Nottingham and Director of Research in the Faculty of Medicine and Health Sciences
Members	Dr David Mela (SACN Member) Science Leader, Unilever R&D Vlaardingen, The Netherlands
	Professor Timothy Key (SACN member) Professor in Epidemiology and Deputy Director of Cancer Epidemiology Unit, University of Oxford
	Mrs Christine Gratus (SACN member) until April 2013 Retired advertising and marketing research director.
	Professor Ian Johnson (External expert) Expert in diet and colorectal health & disease, Institute of Food Research
	Professor Angus Walls (SACN member) Professor of Restorative Dentistry and Director of the Edinburgh Dental Institute
	Professor Ian Young (SACN member) Professor of Medicine and Director of the Centre for Public Health at Queen's University Belfast
	Professor Julie Lovegrove (SACN Member) Professor of Metabolic Nutrition and Deputy Director of the Institute of Cardiovascular & Metabolic Research at the University of Reading

Membership of the Subgroup on Maternal and Child Nutrition (SMCN)

Chair	Dr Anthony Williams (SACN member) Formerly, Reader in Child Nutrition and Consultant in Neonatal Paediatrics, St George's, University of London
Members	Professor Peter Aggett (SACN Member) Honorary Professor, School of Medicine and Health, Lancaster University, and Emeritus Professor and Past Head of School of Postgraduate Medicine and Health
	Professor Annie Anderson (External expert) Professor of Food Choice, Centre for Public Health Nutrition Research, University of Dundee
	Dr Robert Fraser (External expert) Reader in Obstetrics and Gynaecology in the University of Sheffield with an Honorary Consultant contract in Obstetrics and Gynaecology at the Sheffield NHS Foundation Trust
	Professor Alan Jackson (External expert) Professor of Human Nutrition, University of Southampton
	Dr Ken Ong (External expert) Medical Research Council (MRC), Head of the Epidemiology Unit's programme in Child Growth and Development. Paediatric Endocrinologist at Addenbrooke's Hospital, and Affiliated Lecturer at the Department of Paediatrics, University of Cambridge
	Dr Ann Prentice (SACN member) Director, MRC Human Nutrition Research, Cambridge
	Dr Siân Robinson (External expert) Professor of Nutritional Epidemiology at the MRC Lifecourse Epidemiology Unit, University of Southampton
	Professor Monique Raats (SACN member) Director of the Food, Consumer Behaviour and Health Research Centre, University of Surrey
	Dr Stella Walsh (SACN member) Postgraduate Programme Leader, Leeds Metropolitan University

Membership of the Vitamin D Working Group

Chair	Professor Hilary Powers (SACN member) Professor of Nutritional Biochemistry and Head of Human Nutrition Unit, University of Sheffield
Members	Dr Ann Prentice (SACN member) Director, MRC Human Nutrition Research, Cambridge
	Professor Timothy Key (SACN member) Professor in Epidemiology and Deputy Director of Cancer Epidemiology Unit, University of Oxford
	Professor Susan Lanham-New (SACN member) Head of the Nutritional Sciences Division, University of Surrey
	Professor Harry McArdle (SACN member) Deputy Director of Science and the Director of Academic Affairs at the Rowett Institute of Nutrition and Health, University of Aberdeen
	Dr Anthony Williams (SACN member) Formerly, Reader in Child Nutrition and Consultant in Neonatal Paediatrics, St George's, University of London
	Professor Ian Young (SACN member) Professor of Medicine and Director of the Centre for Public Health at Queen's University Belfast
	Professor Kevin Cashman (External expert) Professor of Food and Health, School of Food and Nutritional Sciences, University College Cork
	Professor Roger Francis (External Expert) Emeritus Professor of Geriatric Medicine, Institute for Ageing and Health, Newcastle University
	Dr Stella Walsh (SACN member) Postgraduate Programme Leader, Leeds Metropolitan University

Annex 3

Committee members' biographies

Dr Ann Prentice

Director, MRC Human Nutrition Research, Cambridge. Dr Prentice's main research interests are nutritional aspects of bone health and osteoporosis; dietary requirements for human growth, pregnancy and lactation, and old age with particular reference to micronutrients. She has published extensive peer-reviewed articles, book chapters and reports. Dr Prentice was President of the Nutrition Society (from 2004 to 2007) and has served on a number of national and international advisory committees, including COMA's Subgroup on Nutrition and Bone Health.

Professor Peter Aggett

Honorary Professor, School of Medicine and Health, Lancaster University, and Emeritus Professor and Past Head of School of Postgraduate Medicine and Health, University of Central Lancashire. Professor Aggett is interested in trace element metabolism in health and disease. He has served on national and international advisory committees relating to clinical nutrition, public health nutrition, nutritional requirements, nutrient safety and risk assessment, such as the EC Scientific Committee on Food, the Committee on Toxicology, the Advisory Committee for Novel Foods and Processes, and the Expert group on Vitamins and Minerals. He was a member of COMA for seven years, and is a past chair and secretary of the Committee on Nutrition of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition.

Ms Gill Fine

Gill Fine is an independent Public Health Nutritionist ,a Scientific Governor at the British Nutrition Foundation and a Trustee at Diabetes UK and the Institute of Food Research. From 2004-2010, she was the Director of Consumer Choice and Dietary Health at the Food Standards Agency and was responsible for the strategic direction and the delivery of the FSA's Eating for Health and Choice programme. This wide remit comprised nutrition, GM, supplements, organics, additives, novel foods, food standards and general food labelling. She was also responsible for agreeing the overall direction of the Agency's research portfolio across the Group's remit. Ms Fine has firsthand experience of a wide range of food and dietary policies and how they impact on public health. She has served on several Government committees and was previously a member of SACN from 2001 - 2004

Mrs Christine Gratus (until April 2013)

Mrs Gratus has a background in advertising, marketing and market research. She was a Director and International Vice-President of J Walter Thompson advertising agency until establishing her own Consultancy in 1990. As a qualitative researcher, Mrs Gratus has spent a lifetime listening to consumers talking about every aspect of their lives, with food high on the list, and is now involved mainly with health and health research. She is a lay member of the Herbal Medicines Advisory Committee and a reviewer for the National Institute for Health Research.

Professor Paul Haggarty

Head of Lifelong Health at Rowett Institute of Nutrition and Health (RINH), University of Aberdeen. His research interest is in Diet, Epigenetics and Healthy Ageing and specifically the way in which diet at different life-stages interacts directly with the human genome to influence health and how this is modulated by social status and behaviour. This involves the study of nutrition and epigenetics in reproduction, ageing, cancer, and cognition, and the inter-individual variation in the response to diet. He has published extensively on the early nutritional and environmental determinants of health and the role of epigenetics in this process. He has served on various committees including the Advisory Committee on Novel Foods and Processes, the Breast Cancer Campaign Scientific Advisory Group and the Swedish Medical Research Council Panel on Ageing and Health.

Professor Timothy Key

Professor of Epidemiology and Deputy Director of the Cancer Epidemiology Unit, University of Oxford. His research includes the interactions between nutrition and hormones, cancer and cardiovascular disease, and the long-term health of vegetarians and vegans. He is the lead investigator of the Oxford component of the European Prospective Investigation into Cancer (EPIC), which is a European-wide collaborative study, chair of the EPIC Working Group on Nutrition and Prostate Cancer, and chair of the Endogenous Hormones and Breast Cancer Collaborative Group.

Professor Susan Lanham-New

Professor Lanham-New is Head of the Nutritional Sciences Division at the University of Surrey. Her research focuses on the area of nutrition and bone health, for which she has won a number of awards including the Nutrition Society Silver Medal. She is Editor of the first academic textbook on 'Nutritional Aspects of Bone Health' (NAoBH). She is a member of the Nutrition Forum for the NOS and the Scientific Advisory Group of British Nutrition Foundation and the 2008 BNF Taskforce on ageing. She was Honorary Communications Officer of the UK Nutrition Society from 2000-2006. Susan is on the Editorial Board of Osteoporosis Review and Osteoporosis International. She is Editor-in-Chief of the Nutrition Society Textbook Series.

Professor Julie Lovegrove

Julie Lovegrove is Professor of Human Nutrition at the University of Reading, Director of the Hugh Sinclair Unit of Human Nutrition and the Deputy Director of the Institute for Cardiovascular and Metabolic Research (ICMR). Professor Lovegrove's main areas of research interest are the investigation of nutritional influences on cardiovascular disease risk, including nutrient/gene interactions and personalised nutrition. Of particular interest are the effects of dietary fats, carbohydrates and phytochemicals on vascular reactivity, insulin resistance and lipid metabolism in different population groups. She also has experience and interest in ethical issues associated with human research and serves on a number of research ethics committees. She is Chair of the Accreditation Committee for the Association for Nutrition (AfN) and represents SACN on the project board for the National Diet and Nutritional Survey (NDNS) and on the Carbohydrates Working Group.

Professor Ian Macdonald

Ian Macdonald is Professor of Metabolic Physiology and Head of the School of Life Sciences at the University of Nottingham. His research interests are concerned with the nutritional and metabolic aspects of obesity, diabetes and cardiovascular disease, with additional interests in nutrition and metabolism in exercise. His research involves studies in healthy subjects and various patient groups, and combines whole body physiological measurements, molecular investigation of tissue samples, and dietary interventions. Ian Macdonald is presently Editor of the International Journal of Obesity, Honorary Treasurer of the World Obesity Federation (formerly International Association for the Study of Obesity) and Honorary Treasurer of the Federation of European Nutrition Societies. He was President of the UK Nutrition Society from 2007-2010 and in 2013 was awarded a Fellowship of the Association for Nutrition and elected as a Fellow of the International Union of Nutritional Sciences.

Professor Harry McArdle

Professor McArdle is Deputy Director of Science and the Director of Academic Affairs at the Rowett Institute of Nutrition and Health, University of Aberdeen. His main research interests involve micronutrients and the critical role they play in growth and development. Current work concentrates on understanding the mechanisms underpinning micronutrient transport across the placenta. Professor McArdle's studies iron and copper metabolism, trying to understand how the fetus and placenta work together to ensure an adequate supply, even if the mother is deficient; a frequent occurrence even in developed society. At the same time, Professor McArdle and his team are trying to identify why iron deficiency during pregnancy results in hypertension in the adult offspring in animal models and whether the results can be extrapolated to humans. Professor McArdle represents SACN on the Advisory Committee on Novel Foods and Processes (ACNFP).

Dr David Mela

Science Leader at Unilever R&D Vlaardingen, The Netherlands. Dr Mela joined Unilever in 1998, following an academic research career in the US and UK. His main expertise is in the biological and behavioural aspects of food choice, eating behaviour and energy balance, from consumer research through energy metabolism. In Unilever, he is mainly involved with research programmes to identify and substantiate the health and nutrition benefits of product formulations and ingredients. He also provides input for the management of specific technical and regulatory issues and represents Unilever on various external academic and trade groups.

Mrs Gemma Paramor (From May 2013)

Gemma is a finance professional who has worked in both the accounting and fund management industries and is a member of the Institute of Chartered Accountants of England and Wales. During her career in fund management, she was a Global Healthcare equity investment specialist. As a result, she is accustomed to the analysis and interpretation of scientific data, is a practised decision-maker with a focus on risk assessment and has considerable experience of communicating complex healthcare issues to a non-specialist audience. Gemma studied Biological Sciences at Oxford University and is the mother of two primary school age children.

Professor Hilary Powers

Professor of Nutritional Biochemistry, Head of Human Nutrition Unit, in the Faculty of Medicine, Dentistry and Health, University of Sheffield. Professor Powers conducts research into the role of B vitamins in health and disease, with specific focus on methyl donor nutrients and HPV-linked cancers, and functional biomarkers of micronutrient status. She has published over 100 peer-reviewed papers in this field. Professor Powers represents SACN on the Project Board for the National Diet and Nutritional Survey (NDNS).

Professor Powers' activities in the nutrition community have included membership of the Standing Committee on Nutrition for the Royal College of Paediatrics and Child Health, of the Expert Panel for the AICR/WCRF Report into Food, Nutrition, Physical Activity and Cancer and on various Grant awarding bodies for the BBSRC and WCRF. She is co-editor of the classic textbook, Human Nutrition (Elsevier).

Professor Monique Raats

Professor Raats is Director of the Food, Consumer Behaviour and Health Research Centre at the University of Surrey. Her portfolio of research is wide ranging in terms of topics being addressed (e.g. food choice, policy development, food labelling), and methodologies used (e.g. qualitative, quantitative, stakeholder consultation). Since her arrival at the University of Surrey in 2000, she has played a central role in securing research funding for both national and European research projects. She has published over 65 peer-reviewed papers, 16 book chapters, and co-edited two books, "The Psychology of Food Choice" (2006) and "Food for the Ageing Population" (2008). She is one of the founding members and was secretary of the International Society of Behavioral Nutrition and Physical Activity.

Professor Angus Walls

Angus Walls is Professor of Restorative Dentistry and Director of the Edinburgh Dental Institute, University of Edinburgh. Professor Walls' research interests focus on the oral health care problems of an ageing population at a time of marked change in oral health status. The relationships are between diet and oral diseases such as tooth wear, decay and soft tissue pathology, and the number and functional capacity of the residual dentition and foods choice. His work has embraced basic epidemiology and the development of dietary interventions to address specific problems.

Dr Stella Walsh

Dr Walsh has a long-standing interest in the subjects of food and nutrition and is an experienced consumer representative having served on several government and industry Committees and replied to consultations on behalf of consumers. She was the Secretary of the National Federation of Consumers (NFC) and has been a representative for the NFC on the Institute of Grocery Distributors, and other FSA and Defra Committees. She has published several refereed articles for academic and professional journals, book chapters and conference papers on consumer issues linked to her role as a Postgraduate Programme Leader at Leeds Metropolitan University.

Dr Anthony Williams

Retired, formerly Reader in Child Nutrition and Consultant in Neonatal Paediatrics, St George's University of London. Dr Williams was the Chair of COMA's Panel on Child & Maternal Nutrition and a member of COMA. He was a member of the Food Standards Agency's Expert Group on Vitamins and Minerals and cross-represented SACN on the Advisory Committee on Novel Foods and Processes between 2003 and 2007. Between 2006 and 2008 he chaired the NICE Centre for Public Health Excellence producing guidance on maternal and child nutrition in low-income families. Since 2009 he has represented SACN on the project board of the Diet and Nutrition Survey of Infants and Young Children.

Professor Ian Young

Ian Young is Professor of Medicine and Director of the Centre for Public Health at Queen's University Belfast. In addition, he is also Associate Medical Director (Research and Development) and Consultant Chemical Pathologist at the Belfast Health and Social Care Trust. Professor Young's main clinical and research interests are in lipid metabolism, carbohydrate metabolism and antioxidants, particularly in relation to the prevention of cardiovascular disease. He is an author of over 250 published research papers and is on the editorial boards of a number of leading international journals. In addition, he is Chair of the Scientific Division of the International Federation for Clinical Chemistry and Laboratory Medicine. He frequently speaks at national and international meetings on lipid management and topics related to laboratory medicine.

Members' biographies (not otherwise covered as SACN members)

Carbohydrates Working Group

Professor Ian Johnson

Ian Johnson is a Research Leader at the Institute of Food Research in Norwich, an Honorary Research Fellow in the School of Medicine, and an Honorary Professor in Biological Sciences, at the University of East Anglia. His general area of research is the fate and biological activities of food components in the alimentary tract, and he is particularly interested in the biological effects of dietary fibre, lipids and secondary plant metabolites, including their behaviour during digestion, interactions with the gut epithelia and bioavailability to humans. He has had a long-term involvement in research on the physical properties of food polysaccharides, and their relevance to the prevention of human disease, including both metabolic disorders and colorectal cancer. He has received research funding from the BBSRC, Food Standards Agency and European Union, and has served as a member of the BBSRC Pool of Experts.

Vitamin D Working Group

Professor Kevin Cashman

Professor Cashman is the Professor of Food and Health at University College Cork, a joint position between the School of Food and Nutritional Sciences and Department of Medicine. He is currently the Head of the School of Food and Nutritional Sciences. His research interests are in the area of vitamin D, nutrition and bone health and dietary requirements for vitamin D.

Professor Roger Francis

Professor Francis is Emeritus Professor of Geriatric Medicine at the Institute for Ageing and Health, Newcastle University, where he continues to research into osteoporosis and Vitamin D. He was also a Consultant Physician at the Bone Clinic, Freeman Hospital until January 2011, when he retired from clinical practice. Professor Francis is Vice-Chair of the Arthritis Research UK Clinical Studies Group on Metabolic Bone Disease. He is also Trustee of the National Osteoporosis Society (NOS). He is Chair of the NOS Clinical and Scientific Committee and served as Editor of their journal *Osteoporosis International* from 2011-2007. He has been Editor in Chief of *Age and Ageing* since 2007.

Subgroup on Maternal and Child Nutrition (SMCN)

Professor Annie Anderson

Professor of Public Health Nutrition at the Centre for Public Health Nutrition Research, Department of Medicine, Ninewells Medical School, University of Dundee. Professor Anderson has represented the International Union against Cancer (UICC) on issues relating to diet and cancer prevention. In addition, she has participated as an expert advisor in a number of NICE, Department of Health, Food Standards Agency and Scottish Government Advisory Committees on topics ranging from nutrient standard of school meals, Low Income Diet and Nutrition Survey and Food and Drink Policy development. Her main research interests are Lifestyle and cancer prevention and theory based, behaviourally focused dietary interventions in children and adults living in disadvantaged communities.

Professor Alan Jackson

Professor of Human Nutrition, School of Medicine at the University of Southampton. Professor Jackson's current work explores the extent to which modest differences in maternal diet and metabolic competence influence fetal development, predisposing to chronic disease in adulthood. Professor Jackson was a member of the Committee on Medical Aspects of Food and Nutrition Policy (COMA) for ten years and was a Consultant Adviser to the Chief Medical Officer on Nutrition from 1989 to 2002. Professor Jackson is a member of the EFSA Panel on Dietetic Products, Nutrition and Allergies.

Dr Robert Fraser

Honorary Reader in Obstetrics and Gynaecology, University of Sheffield. Research interests include nutritional physiology of human pregnancy, normal and disordered fetal growth and public health aspects of nutrition in pregnancy and lactation. He also has a clinical research interest in pregnancy complicated by maternal diabetes.

Dr Ken Ong

Dr Ken Ong leads the Child Growth and Development programme at the MRC Epidemiology Unit, University of Cambridge, and is an honorary Paediatric Endocrinologist at Cambridge University Hospitals NHS Trust. He trained in Paediatric Endocrinology in Southampton, London, Oxford and Cambridge, and has a PhD in Paediatrics and MPhil in Epidemiology, both at the University of Cambridge. His MRC programme studies the genetic, epigenetic and endocrine mechanisms linking childhood growth, weight gain and pubertal timing to obesity and type 2 diabetes.

Dr Siân Robinson

Professor of Nutritional Epidemiology at the MRC Lifecourse Epidemiology Unit, University of Southampton. Her main research interests are in the nutrition of women, infants and young children, and in understanding how variations in nutrition across the lifecourse contribute to inequalities in adult health, with a particular focus on early life influences on growth and development, and effects on ageing. She has been a member of a number of advisory groups including acting as co-opted expert member of the NICE Programme Development Group to produce guidance on maternal and child nutrition in low-income families and external advisor to the Diet and Nutrition Survey of Infants and Young Children (DNSIYC).

Annex 4

Remuneration and Committee finance

The amount paid to committee members for fees in 2013 was:

- for Main Meetings and Working Groups, those who chaired a meeting received a total fee of £200 per meeting inclusive of attendance and reading fees;
- members not chairing received £160 per meeting inclusive of attendance and reading fees.

Public Health England also met travel and subsistence costs for those attending Main Meetings and Working Groups/Subgroups.

The cost of the Committee fees, excluding Secretariat resources, for 2013 was £41,736.08. Costs were met by the Public Health England.

Annex 5

SACN Main Committee - declaration of interests

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Dr Ann Prentice		N/A	As Director of MRC Human Nutrition Research responsibility for institutional interests Action Medical Research Aarhus University Hospital Aquapharm Arch Timber Protection Boden Institute for Obesity British Dietetic Assoc BUPA Treasury Cambridge University Hospitals Christie NHS Foundation Trust Coca Cola Cranfield University Danish Brewers' Association Diabetes UK Electro Sci. Industries European Molecular Biology Laboratory HS Pharma Institute of Brewing and Distilling Ikon Informatics Iron Therapeutics Switzerland AG	Research funding Donation for research materials Consultancy Research funding Conference expenses Conference expenses and Research funding Research funding Research funding Research funding Research funding Research funding Conference expenses Research funding Conference donor Research funding PhD studentship Research funding Donation for research materials Conference Donor	None

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
			Kellogg Company King's College Hospital LLR-G5 Limited National Safety Assoc National Centre for Social Research Nestle Playerthree Shield Holding AG Thermo Fisher Scientific Weight Watchers Int World Cancer Research Fund The Rank Prize Funds Thrombosis Research Institute UCL Consultants Universitat Rovira Weight Watchers York Teaching Hospital NHS Foundation Trust pSiMedica	Conference Donor Research funding Conference Donor Conference Donor Survey funding Travel expenses Consultancy Travel expenses Research funding Research funding Research funding Conference expenses Research funding Research funding Research funding Research funding Research funding Research funding	
Professor Peter Aggett	Central Lancashire NHS Trust New Zealand Dairy Goat Council International Association of Dietary Supplements Associations	Non-Executive Director Consultancy: Research Project Management Chairmanship (meetings) and lecture fees	None	N/A	None

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Ms Gill Fine	Sainsbury's	Shareholder	None	N/A	British Nutrition Foundation - Trustee – expenses reimbursed
	Tesco (Until Feb 2013)	Project work on corporate responsibility			Institute of Food Research Trustee – expenses reimbursed (Until February 2014)
	NICE	Chair of Group for Obese and Overweight Adults - expenses reimbursed and honorarium			Diabetes UK Trustee – expenses reimbursed (Until March 2014)
	Agriculture and Horticulture Development Board (AHDB)	Independent Sector Board Member for EBLEX – expenses reimbursed and honorarium			British Nutrition Foundation Vice Chair – expenses reimbursed Dementia UK – Vice Chair Speaker at Nutrition and Health Live 2013 – expenses reimbursed
Dr David Mela	Unilever	Employee and shareholder	None	N/A	None
Dr Stella Walsh	H.J.Heinz	Consumer representative – received honoraria	None	N/A	Consumer representation for National Federation of Consumers. FSA and DEFRA Committees and working parties, including Cattle Movement, and Food Borne Disease
Mrs Christine Gratus	None	N/A	None	N/A	None
Dr Anthony Williams	GlaxoSmithKline	Shareholder			Trustee, Women and Children First Honorary Fellow, Unicef(UK) Fellow, RCPCH, Fellow, RCP London Unremunerated professional advice to charities concerned with parenting and child nutrition. Patron, UK Association for Milk Banking.

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Professor Paul Haggarty	Cafe Direct GlaxoSmithKline Astra Zeneca	Shareholder Shareholder Shareholder	None	N/A	Member of the Breast Cancer Campaign Scientific Advisory Board. Member of the Swedish Research Council Ageing and Health Panel. Member of UK Advisory Committee on Novel Foods and Processes Member of North of Scotland NHS Research Ethics Committee
Professor Timothy Key	None	N/A	None	N/A	Member of Vegetarian Society Member of the Vegan Society
Professor Susan Lanham-New	D3TEX LTD GlaxoSmithKline Kellogg's Danon	Research Director Shareholder Consultancy Consultancy Consultancy	Wassen International	Research Funding	Participated in 'Health Hangout' funded by Nestle, a web based discussion on vitamin D and bone health, specifically for health professionals. Honoraria received.
Professor Ian Young			Unilever The Sugar Bureau	Research project funding Research project funding	None
Professor Julie Lovegrove	None	N/A	Nutricia Sainsburys (Until 2012) Pepsico Sugar Nutrition UK (Until 2013) Volac Dairy Co	Research project funding Food 'in kind; for research Research project funding Research project funding Research project funding Research project funding	None

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Professor Ian Macdonald	Coca-Cola European Scientific Council	Meeting attendance in 2013 - honorarium and travel reimbursed	Mars Incorporated / Mars Europe Unilever Mars Scientific Advisory Council and Waltham Centre for Pet Nutrition research adviser Coca Cola European Scientific Council European Hydration Institute	Research project funding; PhD student funding Research Project funding & PhD student funding Meeting attendance Meeting attendance – suspended from late 2013, travel and accommodation reimbursed and honorarium paid to Nottingham University Meeting participant and review lecture. Travel reimbursed, accommodation provided and honorarium paid to Nottingham University	Board member, Obesity International Trading Responsibility Deal Food Network – SACN representative.
Professor Harry McArdle	EBRC SMBH Hannover, Germany International Molybdenum Association. Workshop on research priorities.	Consultancy Consultancy	International Copper Association	Research project funding	None
Professor Angus Walls	GlaxoSmithKline Chlorhexidine Technology Inc	Consultancy Consultancy	GlaxoSmithKline Proctor and Gamble dental care	Research project funding, Donor for Conference Donor for Conference	Director and Chair, Oral and Dental Research Trust

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Professor Hilary Powers	None	N/A	World Cancer Research Fund WCRF Kellogg's Co GB	Research project funding Research project funding	Deputy Chair, WCRF Continuous Update Panel. Honorarium, annual.
Dr Monique Raats	None	N/A	European Commission DG Research and Innovation European Food Information Council MAPP - Centre for Research on Customer Relations in the Food Sector SafeFood Food and Agriculture Organization Choices International Foundation Eurasanté European Commission DG Enterprise and Industry Council for Responsible Nutrition—International	Research project funding Research project funding Research project funding Research project funding Research project funding Reimbursement of expenses – Expert advice Reimbursement of expenses – Expert advice Reimbursement of expenses – Expert advice Reimbursement of expenses – Expert advice	None

SACN Working groups and subgroups - declaration of interests

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Professor Ian Johnson	Barry Callebaut	Consultancy - advising on biological effects of cocoa flavonoids – received honoraria.	None	N/A	None
Professor Kevin Cashman	None	N/A	None	N/A	None
Professor Roger Francis	Shire Pharmaceuticals	Speaker at two meetings – received honoraria	None	N/A	Prostraken –video presentation on the National Osteoporosis Society Practical Clinical Guideline on vitamin D – received honoraria
	Internis	Chair of Advisory Board – received honoraria			Trustee of the National Osteoporosis Society (NOS) until July 2014 and chaired the Writing Group for the NOS Practical Clinical Guideline on vitamin D
	Consilient	Adviser and Chair of Advisory Board – received honoraria			
	Takeda Ltd	Speaker at educational meeting – received honoraria			
Professor Alan Jackson	None	N/A	Nutricia Clinical Care Baxter Healthcare	Sponsors of Annual Nutrition Course	None
Dr Robert Fraser	None	N/A	None	N/A	

MEMBER	PERSONAL INTERESTS		NON-PERSONAL INTERESTS		ANY OTHER INTERESTS
	Company	Nature of interest	Company	Nature of interest	
Dr Sian Robinson	None	N/A	None	N/A	Travel expenses reimbursed: ILSI meeting (Maternal obesity – Oct 2001); British Nutrition Foundation (May 2013); EUCCONET (March 2012, July 2013); Medineo (Sarcopenia – July 2013)
Dr Ken Ong	International Life Sciences Institute-Europe	Chair of Expert Group on Early Growth Velocity and Risk of Metabolic Disorders Later in Life	Mead Johnson	Unrestricted research grant to Department of paediatrics, University of Cambridge – Discovery of biomarkers for infant nutrition	
	Takeda Ltd	Consultancy work on treatment of diabetes and obesity in children	Pfizer Ltd	KIGS (database to monitor growth hormone treatment) Steering Committee	
Professor Annie Anderson	None	N/A	None	N/A	Policy Advisor to Breakthrough Breast Cancer (Scotland) Policy Advisor to Bowel Cancer UK