



## **Report of a joint FSA-BSACI scientific Workshop**

### **“Adult Food Allergy Workshop”**

**Held on 17<sup>th</sup> March 2014 at  
The Royal Society, London**

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## **Introduction**

Food Allergy is an important health issue, with 1-2% of adults and 5-8% of children affected in the UK. There are currently no established primary preventative measures or proven therapies for food allergies and management of the condition relies on avoidance of the relevant allergen(s) coupled with use of rescue medication in the event of a reaction.

The Food Standards Agency (FSA) has a long-standing commitment to supporting food allergy research. This is achieved via a programme of research projects aimed at characterising the underlying causes and mechanisms of food allergy, and providing a basis for the development of sound, evidenced based, policies to enable consumers affected by these conditions to make safe and informed food choices

The British Society for Allergy and Clinical Immunology (BSACI) is the national, professional and academic society which represents the specialty of allergy at all levels. Its aim is to improve the management of allergies and related diseases of the immune system in the United Kingdom, through education, training and research. Its research priorities are for the prevention, treatment and improved service delivery for allergic disease. The BSACI shares with the FSA a commitment to delivering public health and consumer benefits in food allergy through the facilitation of communication between researchers, both in scientific meetings and through its journal, Clinical and Experimental Allergy.

In November 2012, the FSA undertook a quinquennial review of its research programme. When considering the future direction of the programme, the panel highlighted the focus has been on paediatric research and recommended future research should also focus on adult food allergy (including prevalence, mechanisms and evolution).

Against this background, the FSA convened a workshop co-sponsored by BSACI in March 2014. The aim of the workshop was to draw together researchers and clinicians working in the allergy arena with knowledge of the issues surrounding food allergy in adulthood to discuss recent developments and current scientific challenges. Through this, the FSA hoped to prioritise areas for research and explore opportunities for collaborative research.

## **The Workshop**

Over 60 leading research scientists and clinicians with expertise in food allergy and relevant areas participated in the workshop which was held at the Royal Society, London. In addition, representatives from some of the major UK funders of allergy research were in attendance (see list of workshop participants at Annex 1). The workshop programme included several keynote presentations that described recent developments and current challenges in adult food allergy (see Workshop Programme at Annex 2). There followed parallel break-out sessions during which participants discussed 5 key issues and challenges in adult food allergy. These questions were taken from a list of 13 that participants were asked to prioritise in an online survey in advance of the workshop. The FSA considered these and identified key 5 questions that are of both scientific and policy importance (See Annex 3) Participants considered the priority areas identified and explored additional areas of importance where research gaps exist and lastly, they discussed research that could be undertaken to address the priority areas.

The workshop closed with a plenary session discussing other issues in adult food allergy including its immunology. The latter was delivered by Professor Ian Kimber, who chaired the workshop in his capacity as external Programme Advisor to the FSA's Food Allergy and Intolerance Research Programme.

## **Outcomes of the break-out discussions**

The break-out sessions provoked stimulating discussions about evidence gaps and the scientific challenges in adult food allergy. Whilst participants broadly agreed that the priority areas identified by the Agency are important and would merit further research, there were also some additional recommendations made that warrant consideration. The research recommendations were as follows:

### **True prevalence of adult food allergy in the UK**

Participants agreed that a priority should be to establish the true prevalence of adult food allergy in the UK, (largely unknown). This would provide an understanding of the extent of the problem and the resource that will be required to tackle this in the future. It was also considered that such data could be used as a baseline to allow assessment of changes in prevalence in the future. There is also a need to understand which foods are responsible for the majority of food allergy in adults.

It was recognised that a significant amount of research has been undertaken in the paediatric food allergic population and as a starting point a literature review could be undertaken to identify relevant validated measures in the paediatric population which could be adopted for the adult population.

It was suggested that national epidemiology studies could be undertaken, in addition through this type of study, risk factors for developing the disease in adulthood could be identified. It was recognised that the prevalence and type of food allergies would vary across the UK, and for this reason it was recommended that a multi-centre approach might be appropriate. There is a need to distinguish between the prevalence of food allergy that has been carried over from childhood and adult onset food allergy.

### **The characteristics of new onset food allergy in adults, and how does this differ from unresolved childhood food allergy**

It was acknowledged that there are synergies between adult and paediatric food allergy and where possible the work in adults should build upon the existing knowledge base. Participants highlighted the need to consider the links between food allergic and other allergic disease when looking at characteristics. In addition, there may be a need to consider synergy between autoimmune diseases and certain chronic diseases.

Participants also recognised the need to establish the role of co-factors in adult food allergy. It was appreciated that co-factors played a very different role in adult food allergy than in paediatric food allergy. However it was acknowledged that it is difficult to undertake research to understand the role of co-factors in a food allergic reaction.

There is also a need to characterise the various co-factors that might influence the development of adult-onset food allergy and whether these differ from those affecting childhood allergy.

There is a view that the development of adult-onset food allergy is due to the loss of tolerance that might have been effective for many years. The way in which such tolerance to dietary proteins may be broken – and under what circumstances – is worthy of research.

In addition, it is important to understand the factors in adults that affect the extent of sensitisation and the severity of allergic reactions. Linked with this is a need to understand variations in severity with time in an individual and also between subjects.

There is a need for well-defined adult cohorts (which are not currently available) to investigate these issues. Existing cohorts with individuals recruited during childhood could be utilised to understand the differences in characteristics between those who developed allergy in childhood and those who develop new food allergies in adulthood.

## **Specific factors affecting the development of adult-onset food allergy and the routes of exposure**

Expanding on the above participants felt there was a need to investigate the influence of certain specific factors in the development of adult-onset food allergy.

The list included:

- dietary patterns and supplements
- hormonal effects
- hereditary factors
- environmental and lifestyle factors
- routes of exposure

It was viewed as important to ensure that investigations in this area are fully aligned with research into the development of other forms of allergic disease in adults and children.

## **Mechanisms of new-onset food allergy in adults**

The need to understand the immunological mechanisms that underlie new-onset adult food allergy was also recognised as important. Participants specifically considered it important to explore longer tolerated particular food proteins.

Of particular interest is whether there exist differences between children and adults with respect to the nature and characteristics of food allergy, and whether there are differences also in the immunological mechanisms through which allergic sensitisation to food proteins is acquired. Similarly, there is a need to continue to explore the immunological and biochemical bases for differences between dietary proteins with respect to their ability to cause allergic sensitisation. In tandem, it is necessary also to examine whether and to what extent processing influences the sensitising potential of food proteins.

## **Barriers to effective avoidance and quality of life for adults with food allergy**

There may be a need to undertake social research to investigate the burden of food allergy on adults to establish whether there are differences in the barriers to effective avoidance between those with adult onset food allergy compared with those that developed the condition during infancy. In parallel, it would be important to gain a

clearer understanding of the impact on adults of living with food allergy with regards to quality of life and nutritional adequacy.

Other general points raised were that: (a) there should be in place effective channels of communication between healthcare professionals, the food industry and those with food allergy, and (b) the difficulties for those with persistent food allergy in the transition to adulthood – with a particular focus on teenagers and young adolescents.

## **Diagnostics**

There is need for improved and standardised diagnostic methods. Participants also considered that allergen component analysis could be explored as a means of improving diagnosis and the quality of advice given to patients. Diagnostic criteria for adult food allergy also needs to be considered.

## **Oral allergy syndrome**

It was proposed that Oral allergy syndrome (OAS) or pollen allergy syndrome should be considered a separate clinical entity. Although it is believed that the prevalence of OAS is increasing there is a lack of firm data to confirm this – or to establish what the true prevalence is.

In addition, there is a need to establish the mechanistic bases for an increased prevalence of OAS and why an increasing number of foods are being associated with this syndrome.

Of particular interest is a possible association between OAS and hay fever and the possibility that cross-reactivity between pollen allergens and food proteins plays an important role.

## **Immunotherapy**

There remains a continuing need to develop new approaches to immunotherapy of food allergy.

## **Common themes and areas of consensus**

There were a number of recurring themes and areas of consensus that emerged from the discussions in the break-out groups and the plenary discussions. In particular, there appeared to be strong agreement amongst participants that there are significant and intriguing scientific challenges to be addressed in adult food allergy.

There was also a clear sense that addressing these challenges via future research proposals/projects will require continued and enhanced collaboration between immunology, gastroenterology, genetics, dermatology, biochemistry and social science.

Workshop participants agreed that future research funding should be directed towards a number of themes in order to have maximum impact on understanding the immunobiology of adult food allergy.

## **Conclusions and way forward**

The Workshop provided a very useful opportunity to initiate discussion between clinicians, immunologists and food allergy scientists about the major scientific questions in adult food allergy.

It is now the responsibility of funding organisations, such as MRC, BBSRC and the FSA, to consider how the research needs identified can best be addressed.



# **ANNEX 1**

## **Participant List**

Dr Alexandra Croom	University Hospital Leicester
Prof Allan Mowat	University of Glasgow
Dr Andrew Clark	Addenbrooke's Hospital Cambridge
Dr Andrew F. Walls	University of Southampton
Mr Andrew Williams	Homerton Hospital NHS Trust
Dr Bogusia Kasternow	Guys and St Thomas Hospital
Dr Bright Nwaru	University of Edinburgh
Dr Carina Venter	University of Portsmouth
Dr Carsten Flohr	King's College London
Cecilia Trigg	St Mary's Hospital London
Prof Clare Mills	University of Manchester
Dr Claudia Gore	Imperial College London
Dawn Smith	Newcastle Upon Tyne Hospitals NHS Foundation Trust
Dr Franco Falcone	University of Nottingham
Dr Georgina Drury	Medical Research Council
Dr Guy Scadding	Imperial College London
Mrs Hazel Gowland	Allergy Action
Helen Atkinson	Food Standards Agency
Prof Ian Kimber	University of Manchester
Dr Isabel Skypala	Royal Brompton & Harefield NHS Trust
Dr Jessica Strid	Imperial college London
Prof John Warner	Imperial College London

Joy Dobbs	FSA Social Science Research Committee
Prof Julie Barnett	University of Bath
Dr Juliet Gray	Harrison Catering Services Ltd
Dr Karen Finney	Medical Research Council
Liane Reeves	Oxford Health NHS Foundation
Dr Lisa Douet	National Institute for Health Research
Lynne Regent	Anaphylaxis Campaign
Dr Marcos Alcocer	University of Nottingham
Dr Mary Travers	BBSRC
Maureen Jenkins	Allergy UK
Dr Melanie York	Sheffield Teaching Hospitals
Dr Mo Shamji	Imperial College London
Moira Austin	Anaphylaxis Campaign
Dr Monica Ruiz-Garcia	Imperial College London
Dr Nadine Marrouche	Norfolk and Norwich University Hospital
Nathalie Shapiro	Food Standards Agency
Dr Nick Osborne	Exeter University
Dr Paul Turner	Imperial College London
Dr R Mirakian	Addenbrooke's Hospital Cambridge
Dr Rene Crevel	International Life Science Institute (ILSI)
Sarah Hardy	Food Standards Agency
Dr Shelley Dua	Addenbrooke's Hospital Cambridge
Dr Shuaib Nasser	Addenbrooke's Hospital Cambridge
Shuhana Begum	Food Standards Agency
Dr Silvia Valtueña Martínez	EFSA
Dr Soreni Kiani	Royal Surrey County Hospital NHS Trust

Dr Stephen Till

King's College London

Sue Hattersley

Food Standards Agency

Prof Syed Hasan Arshad

University of Southampton

Prof Tara Dean

University of Portsmouth

Prof Tony Frew

Royal Sussex County Hospital

## **ANNEX 2**

### **Adult Food Allergy Workshop Programme**

**Monday 17<sup>th</sup> March 2014**

**The Kohn Centre at The Royal Society**

**10.00 - 10.30**                      Registration and Refreshments

**10.30 - 10.40**                      Chair's introduction and welcome

*Prof Ian Kimber*

*University of Manchester*

**10.40 - 10.50**                      Welcome from BSACI

*Prof Tony Frew*

*Brighton and Sussex*

*University Hospitals*

**10.50 - 11.00**                      Adult Food Allergy from the FSA perspective

*Sarah Hardy*

*Food Standards Agency*

#### **Session 1 : Current challenges in Adult Food Allergy issues**

**11.00 - 11.20**                      Adult Food Allergy: myth and reality

*Dr Isabel Skypala*

*Royal Brompton & Harefield*

*NHS Trust*

**11.20 - 11.30**

Questions

**11.30 - 11.50**

Adult Food Allergy: view from the coal face

*Dr Stephen Till*

*King's College London*

**11.50 - 12.00**

Questions

**12.00 - 12.15**

General Discussion

*Prof Ian Kimber*

*University of Manchester*

**12.15 - 1.00**

Lunch

## **Session 2: Breakout Group Discussions on Adult Food allergy**

**1.00 - 2.00**

Breakout group discussion

*Each group has been  
assigned a chair and a  
rapporteur*

**2.00 - 2.15**

Refreshment break

**2.15 - 3.15**

Feedback from breakout group discussions

*Prof Ian Kimber*

*University of Manchester*

**3.15 - 3.35**

General open discussion and questions

*Prof Ian Kimber*

*University of Manchester*

**3.35 - 3.45**

Summary and closing remarks

*Prof Ian Kimber*

*University of Manchester*

**3.45**

Close

## **ANNEX 3**

### **FSA priority areas in Adult Food Allergy**

Participants were invited to complete a short survey before the workshop and asked to select the top 5 issues which they considered to be the most important out of a list of 13 key questions surrounding adult food allergy. The Agency considered these and identified the following top 5 areas that are of both scientific and policy importance:

- 1) *What factors affect the development of adult-onset food allergy and the routes of exposure through which sensitisation and allergy to foods is acquired in adults?*
- 2) *What is the true prevalence of adult food allergy in the UK, and what is the balance between new-onset allergy and unresolved childhood allergy?*
- 3) *What are the characteristics of new onset food allergy in adults, and how do they compare to un-resolved food allergy acquired in childhood?*
- 4) *What are the mechanisms of new-onset food allergy in adults?*
- 5) *What are the barriers to effective avoidance and quality of life for adults with food allergy?*