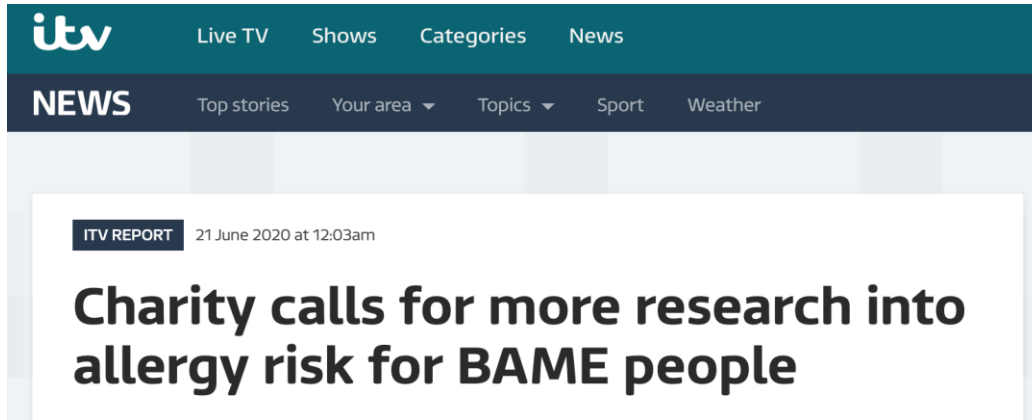




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FSA Science Council



*Speaking to the PA news agency, Natasha’s mother said that after her daughter’s death they found there was still “very little research” into allergies in the UK which was “woefully underfunded”.*

HOUSE OF LORDS

Science and Technology Committee

6th Report of Session 2006–07

## Allergy

Research Councils	~ £7million p.a.	Around half spent on food allergy
EU	£1-2million p.a.	
FSA FAIR programme	~ £1million p.a.	

## Allergy

- *“the factors contributing to allergy development and the “allergy epidemic” are poorly understood... further research should focus on the environmental factors, such as early allergen exposure, which may contribute.”*
- *“...allergy research directly related to health care to be an area of unmet need that requires greater priority.”*

# Food Allergy and Intolerance Research (FAIR) programme

- Established 1994 by MAFF to investigate causes and mechanisms of severe food allergy, to reduce the incidence and severity
- To date:
  - research funding > £20million
  - 50+ research projects commissioned

## RESEARCH PROGRAMME

### Food allergy and intolerance research --

The programme is currently funding research under a number of key themes of work, outlined below:

- Development of management thresholds for allergenic foods
- Route and timing of exposure to food allergens in early life
- Immunological aspects of food allergy
- Prevalence and characteristics of food allergy and intolerance
- Food allergen labelling and consumer choice research
- Evaluation of FSA allergy guidance

Major aims include facilitating the development of allergen management thresholds for use by industry and regulators and identifying risk factors associated with the development of food allergy so that appropriate information can be provided for consumers. In addition the programme also focuses on understanding consumer attitudes to food allergy and intolerance and its labelling.



Contents lists available at ScienceDirect

Toxicology

journal homepage: [www.elsevier.com/locate/toxicol](http://www.elsevier.com/locate/toxicol)

## Review

## Food allergy – science and policy needs – The UK Food Standards Agency Research Programme

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## ARTICLE INFO

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T lymphocytes

Exposure

Antibody

Prevalence

## ABSTRACT

Food allergy is a significant health issue in the UK, affecting between 1 and 2% of adults and 5 and 8% of children. The UK Food Standards Agency seeks to ensure the safety of food allergic consumers by providing them with information and guidance on food choices. Since 1995, with the aim of addressing important policy issues and improving the quality of the support and guidance available for food allergic consumers, the Agency (and before that the Ministry of Agriculture, Fisheries and Food), has had a programme of research dedicated to investigating the causes and mechanisms of food allergy and delivering benefits for UK consumers. In this paper, we outline some of the major scientific challenges that the programme has sought to address. We reflect on how the findings have been used as a basis for the development of sound, evidence-based policy and advice for UK consumers, and the current direction of research being supported by the programme.

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## Contents

1. Introduction .....	319
2. UK Food Standards Agency's Research Agenda .....	320
3. Highlights of the Agency's Food Allergy Research Programme .....	321
3.1. The true prevalence of food allergy in the UK .....	321
3.2. Impact of the introduction of new foods into the national diet .....	322
3.3. The role of IgG antibody in food allergy .....	322
3.4. The role of T lymphocytes in food allergy .....	323
3.5. Relevant routes of exposure for the acquisition of sensitisation to dietary proteins .....	323
4. Concluding remarks .....	324
Conflict of interest .....	324
References .....	324

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# Epidemiology

- **Isle of Wight cohort studies:**
  - Prevalence of peanut allergy ~1-2%
  - Increase probably occurred in 1980s/1990s
  - No discernible impact of change in pertussis vaccine from wP to aP
- **Using NHS datasets to monitor trends in FHS and anaphylaxis**
- **UK Anaphylaxis Registry**

---

## Allergy prevention

- DHSS 1980: Aim to breastfeed until 4-6 months, solids from 3m of age
- COT 1998: women with an atopic (allergic) background should avoid peanuts during pregnancy and when breastfeeding; children to avoid peanut until after age 3 years
- COT 2008: “previous advice to avoid peanut consumption during pregnancy, breast feeding and infancy, where there is atopy or atopic disease in family members, is no longer appropriate”



.....

# The impact of government advice to pregnant mothers regarding peanut avoidance on the prevalence of peanut allergy in United Kingdom children at school entry

---

Jonathan O'Brien Hourihane, MD, FRCPCH,<sup>a,b</sup> Rachel Aiken, RN,<sup>c</sup> Rita Briggs, RN,<sup>a</sup> Lesley A. Gudgeon,<sup>a</sup> Kate E. C. Grimshaw, SRD, MSc,<sup>a</sup> Audrey DunnGalvin, MA,<sup>b</sup> and Stephen R. Roberts, FRCPCH<sup>c</sup> *Southampton and Manchester, United Kingdom, and Cork, Ireland*

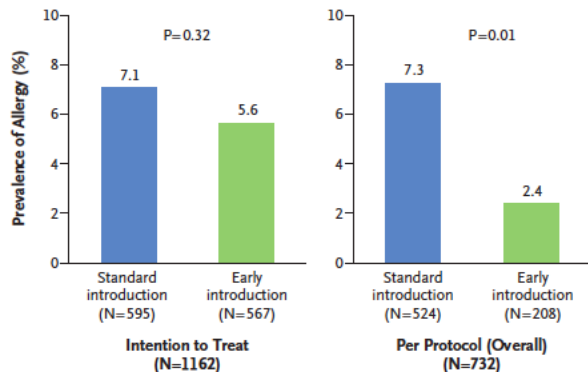
JACI 2007;119:1197-202

- 61% of 957 mothers recalled hearing the advice about peanuts in 1998.
- 57% still ate peanuts while pregnant
- 27% ate peanuts while breastfeeding
- Only 4% followed official DoH advice and stopped eating peanut while pregnant.

# Allergy prevention



**A One or More Foods**



THE NEW ENGLAND JOURNAL OF MEDICINE

ORIGINAL ARTICLE

## Randomized Trial of Introduction of Allergenic Foods in Breast-Fed Infants

Michael R. Perkin, Ph.D., Kirsty Logan, Ph.D., Anna Tseng, R.D., Bunmi Raji, R.D., Salma Ayis, Ph.D., Janet Peacock, Ph.D., Helen Brough, Ph.D., Tom Marrs, B.M., B.S., Suzana Radulovic, M.D., Joanna Craven, M.P.H., Carsten Flohr, Ph.D., and Gideon Lack, M.B., B.Ch., for the EAT Study Team\*

ABSTRACT

### BACKGROUND

The age at which allergenic foods should be introduced into the diet of breast-fed infants is uncertain. We evaluated whether the early introduction of allergenic foods in the diet of breast-fed infants would protect against the development of food allergy.

### METHODS

We recruited, from the general population, 1303 exclusively breast-fed infants who were 3 months of age and randomly assigned them to the early introduction of six allergenic foods (peanut, cooked egg, cow's milk, sesame, whitefish, and wheat; early-introduction group) or to the current practice recommended in the United Kingdom of exclusive breast-feeding to approximately 6 months of age (standard-introduction group). The primary outcome was food allergy to one or more of the six foods between 1 year and 3 years of age.

### RESULTS

In the intention-to-treat analysis, food allergy to one or more of the six intervention foods developed in 7.1% of the participants in the standard-introduction group (42 of 595 participants) and in 5.6% of those in the early-introduction group (32 of 567) ( $P=0.32$ ). In the per-protocol analysis, the prevalence of any food allergy was significantly lower in the early-introduction group than in the standard-introduction group (2.4% vs. 7.3%,  $P=0.01$ ), as was the prevalence of peanut allergy (0% vs. 2.5%,  $P=0.003$ ) and egg allergy (1.4% vs. 5.5%,  $P=0.009$ ); there were no significant effects with respect to milk, sesame, fish, or wheat. The consumption of 2 g per week of peanut or egg-white protein was associated with a significantly lower prevalence of these respective allergies than was less consumption. The early introduction of all six foods was not easily achieved but was safe.

### CONCLUSIONS

The trial did not show the efficacy of early introduction of allergenic foods in an intention-to-treat analysis. Further analysis raised the question of whether the prevention of food allergy by means of early introduction of multiple allergenic foods was dose-dependent. (Funded by the Food Standards Agency and others; EAT Current Controlled Trials number, ISRCTN14254740.)

From the Population Health Research Institute, St. George's, University of London (M.R.P.), the Department of Paediatric Allergy, Division of Asthma, Allergy, and Lung Biology, King's College London and Guy's and St. Thomas' NHS Foundation Trust (M.R.P., K.L., A.T., B.R., H.B., T.M., S.R., J.C., C.F., G.L.), the Division of Health and Social Care Research, King's College London (S.A., J.P.), and the St. John's Institute of Dermatology, Guy's and St. Thomas' NHS Foundation Trust (C.F.) — all in London. Address reprint requests to Dr. Lack at the Children's Allergy Unit, St. Thomas' Hospital, Westminster Bridge Rd., London SE1 7EH, United Kingdom, or at [gideon.lack@kcl.ac.uk](mailto:gideon.lack@kcl.ac.uk).

\*A complete list of members of the Enquiring about Tolerance (EAT) Study Team is provided in the Supplementary Appendix, available at [nejm.org](http://nejm.org).

This article was published on March 4, 2016, at [nejm.org](http://nejm.org).

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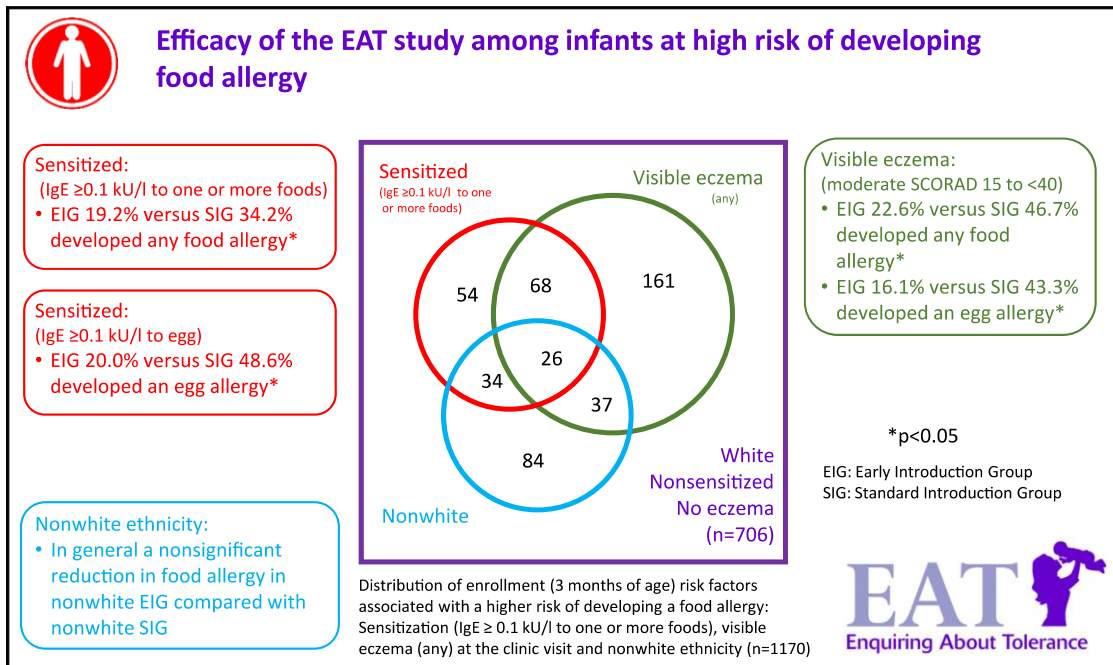
# Allergy prevention

## Efficacy of the Enquiring About Tolerance (EAT) study among infants at high risk of developing food allergy



Michael R. Perkin, PhD,<sup>a</sup> Kirsty Logan, PhD,<sup>b</sup> Henry T. Bahnson, MPH,<sup>c</sup> Tom Marrs, PhD,<sup>b</sup> Suzana Radulovic, MD,<sup>b</sup> Joanna Craven, MPH,<sup>b</sup> Carsten Flohr, PhD,<sup>d</sup> E. N. Mills, PhD,<sup>e</sup> Serge A. Versteeg, BSc,<sup>f</sup> Ronald van Ree, PhD,<sup>f,g</sup> and Gideon Lack, MB, BCh,<sup>b</sup> on behalf of the Enquiring About Tolerance (EAT) study team  
*London and Manchester, United Kingdom, Seattle, Wash, and Amsterdam, The Netherlands*

doi:10.1016/j.jaci.2019.06.045

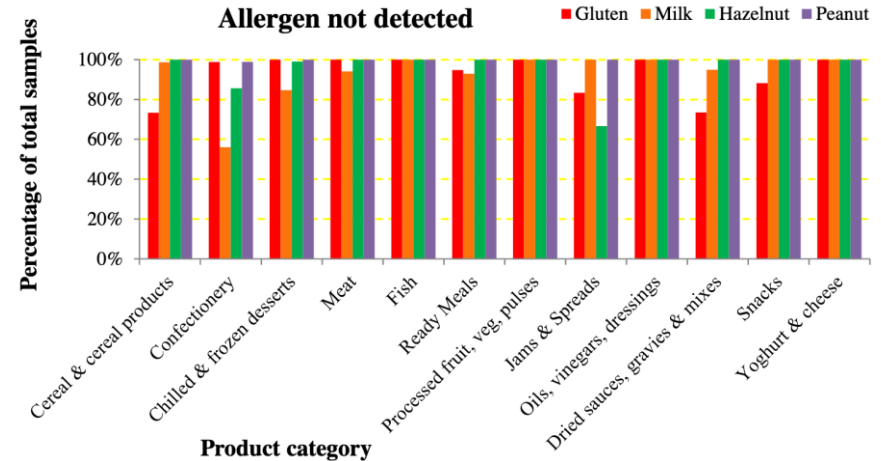
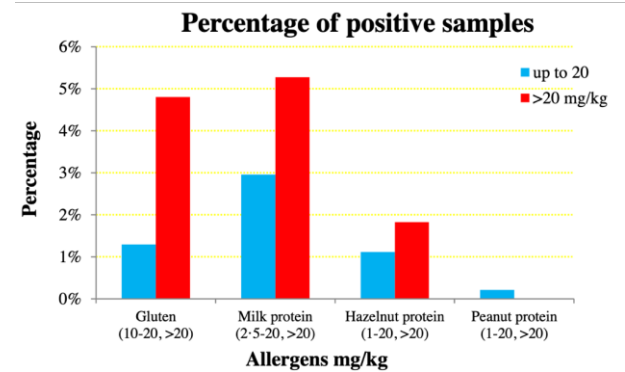


# Labelling

## Survey of allergen labelling and allergen content of processed foods

The survey examined the type of allergen advisory labelling present on pre-packed processed foods sold in the UK, and aimed to quantify the level of allergens resulting from cross-contamination and establish whether the type of advisory labelling used related to the level of allergen present.

2012-2014: 508 products



# UK FSA Survey (2014)

508 products  
2012-2014

Remington et al.  
Allergy. 2015;70:813-9.

Food category and labelling	Number of unique products	Range of tested concentrations (ppm protein)	Predicted reactions in allergic user population	
			Range of LN (%)	Range of LL (%)
<b>Hazelnut – Precautionary allergen labelling</b>				
Cheesecakes	1	1	0.27-0.38	0.87-1.06
Chocolate spread	2	77-120	4.37-6.65	5.42-7.66
Dark chocolate	3	18-78	1.17-4.38	2.06-5.44
Milk chocolate	9	1-170	0.11-10.32	0.48-10.97
<b>Milk – Precautionary allergen labelling</b>				
Chewy sweets	1	14	2.51-3.18	3.23-3.89
Dry mix sauces and seasoning mixes	1	31	0.66-1.59	1.18-2.21
Ham excluding parma	1	6.6	1.04-1.46	1.8-2.23
Ice lolly	1	2.7	0.99-1.12	1.73-1.87
Dark chocolate	9	9.7-4400	0.96-52.17	1.62-50.69
White chocolate	1	100	7.39-9.82	7.62-9.7
White bread rolls	1	3.9	1.12-1.59	1.89-2.39
<b>Milk – Not Declared</b>				
Apple pie only	1	2.6	0.97-1.54	1.72-2.42
Dry mix sauces and seasoning mixes	1	4.2	0.08-0.19	0.31-0.57
Ice lolly	1	29	7.92-8.64	8.08-8.68
Sandwiches	2	13-52	*	*
Vegetable samosas	1	45	11.15-13.29	10.85-12.65
<b>Peanut – Precautionary allergen labelling</b>				
Milk chocolate	1	18	2.4-2.84	2.9-3.34
<b>Wheat – Precautionary allergen labelling</b>				
Bombay mix and trail mixes	1	38.75	1.08-1.35	1.47-1.77
Breakfast oat porridge	1	43.75	0.38-0.47	0.81-0.93
Cereal Bars	1	262.5	9.49-11.55	8.63-10.28
Corn snacks	1	17.5	0.12-0.16	0.41-0.5
Dry mix sauces and seasoning mixes	2	32.5-82.5	0.05-0.69	0.18-1.04
Milk chocolate	1	66.25	2.23-2.77	2.52-3.04
Vegetarian sausages	1	17.5	1.1-2.03	1.58-2.5
<b>Wheat – Not Declared</b>				
Bombay mix and trail mixes	1	40	1.14-1.41	1.52-1.82
Breakfast oat porridge	1	47.5	0.43-0.54	0.88-1.01
Cereal Bars	1	48.75	1.24-1.62	1.72-2.11
Dried stuffing mixes	1	28.75	*	*
Dry mix sauces and seasoning mixes	2	37.5-62.5	0.07-0.46	0.21-0.78
Indian ready meals	1	31.25	12.78-17.09	11.28-14.93
Yeast extract	1	30	0.02-0.05	0.12-0.21
Tortillas	1	13.75	0.15-0.27	0.43-0.6

\*Consumption data are not available for this product category, and no quantitative risk assessments were performed.



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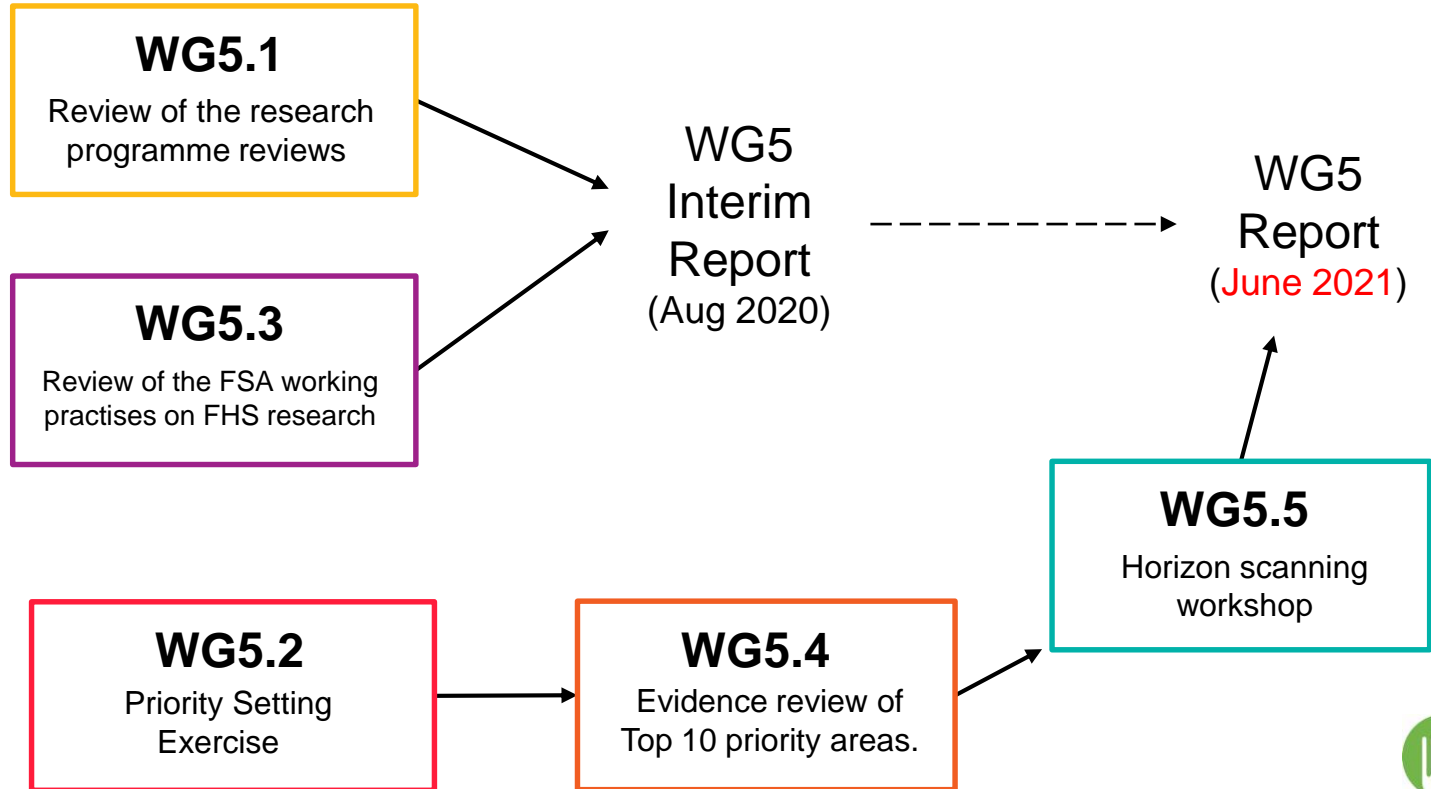
Paul Turner

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## Objective of Working Group 5

1. Provide oversight and assurance of an internal FSA review into the previous and existing FSA research programme for food hypersensitivity.
2. Undertake a research prioritisation exercise and associated literature review on existing evidence.
3. A pilot to evaluate best practice across different areas of FSA research interest, in terms of how science influences policy/decision making.
4. Horizon scanning of the food hypersensitivity environment to inform future FSA research and policy direction

# Working Group 5 Outline







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Working Group 5.1/3 -  
Interviews and Workshop

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# Summary of Findings

- The WG assessed the following 5 areas:
  - Strategy and Direction
  - Management and Governance
  - Research Outputs
  - Uptake and Impact
  - Review and learning mechanisms
- For each area, we outline:
  - main observations and elements of good practice
  - recommendations for improvement and what they should achieve
  - where appropriate, suggestions for how to take recommendations forward

---

## Main recommendations

Consistent with the 2008 and 2012 reviews, the FAIR programme has overall been well-managed, and influential with significant policy implications at a national and international level.

These successes are clearly linked to the dedication of FSA staff and contractors, and the extensive and frequent level of stakeholder engagement evident until 2012.

---

## *Strategy and direction*

Decrease in investment in FAIR programme since 2010 is noted.

- **With the introduction of cross-governmental ARIs, the FSA Board should again provide a steer as to the role FSA should play in commissioning broader research into Food Hypersensitivity.**

The formation of the Food Hypersensitivity Programme Board is welcome.

- **The process by which science and data are brought to the Programme Board needs to be made more resilient**, with a more structured approach to provide “science push” while the Programme Board creates “policy pull”.

---

## *Commissioning of research tenders*

- The FSA should **reinstate regular stakeholder and external reviews** to facilitate the development of more strategic relationships with other funders/stakeholders, to maximise potential for collaborative working.
- **The FSA should consider complementary methods to develop tender calls relating to more complex areas of future research e.g. sandpits.**
- Guidance on the tender process should be developed for the non-commercial sector with respect to contracted research vs that funded through UKRI.
- Steps should be taken to minimise the impact of GDPR and associated legislation on research activities.

---

## *Management and Governance*

- There is a critical reliance on “lynchpin” individuals. **This must be addressed through adequate internal resources, succession planning and strategies to capture best practice and protect institutional knowledge.**
- Thought should be given to the use of expert Project Managers who may be better qualified than FSA scientists to undertake this work.
- **Reinstating regular stakeholder and external reviews** will provide reassurance to FSA with respect to the quality of the programme, and that the necessary oversight is in place.

---

## *Maximising outputs*

- **Additional resources should be allocated to maximise use of routinely-collected data across the FSA (e.g. post-incident analyses)** and avoid the situation where operational and analysis roles may be combined resulting in limited capacity for data analysis.
  - This has been previously flagged by the Science Council as a recommendation to the FSA Board (Science Council Report on Capability and Assurance, July 2018).

---

## *Maximising impact*

- Improving the internal and external visibility of previous and existing outputs and impacts will help the FSA build a compelling narrative to inform future business case planning.
- **A clear process should be developed for data sharing, allowing monitoring by FSA of secondary outputs and impacts.**
- Monitoring of impact should be an integral part of the regular external reviews, which ceased in 2012 due to resource constraints.



---

## *Review and learning mechanisms*

- The FSA should consider **re-instituting a mechanism for external review**, not just to capture best practice, but also monitor its success in applying this learning to future work.
- The Science Council requests that the FSA:
  - develops a strategy setting out how it will address these recommendations
  - provides a report on implementation of these recommendations within 12 months of the WG's final report (by July 2022).