



# **SCIENCE IN THE FSA**

## **2nd Annual Report of the Chief Scientist**



# AIMS OF THE REPORT

- Track trends in food-related disease.
- Highlight the good science and research carried out by the Agency and how this links into policy.
- Show the processes the Agency has to ensure that its scientific work is robust.



# FORMAT FOR 2007/08

This year we are presenting a single report which covers:

- Continuing trends in foodborne illness, significance of carcinogens in food and obesity
- How we use science in policy making, including social science
- Our science strategy, including R&D
- Our future work



# INTERACTIVE CD

## FSA Strategic Themes

### Food Safety

Areas covered under this theme:

- Chemical Contaminants
- Chemical risk assessment including mixtures
- Food Intolerance
- Microbiological Safety
- Meat Hygiene (inc. TSE)
- Radioactivity in Food
- FSA Scotland research

### Eating For Health

Areas covered under this theme:

- Diet and Health
- Food Acceptability and Choice
- Dietary Surveys and food composition
- Consumer Awareness
- FSA Scotland research

### Choice

Areas covered under this theme:

- Food Additives
- Novel and GM Foods
- Food Authenticity
- Food Labelling

### How We Deliver

Areas covered under this theme:

- Economics
- Improved Methods of Analysis
- Food Law Enforcement



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## Assessing the safety of food components

Information about research to assess the exposure to and safety of components of food and to identify possible risks to human health, including: phytoestrogens, additives and others; the basis of allergies and food intolerance; novel foods (including GM); and effects of mixtures of chemicals, e.g. pesticides.

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- ▼ [Food intolerance and allergy research](#)
- ▼ [Risk assessment](#)
- ▼ [Additives](#)
- ▼ [Mixtures of pesticides](#)
- ▼ [Food chemical toxicology](#)
- ▼ [GM and novel foods research](#)

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#### Research programme T05/T06

#### Project details

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#### Consumer surveys on allergy and intolerance

#### Research programme T07

#### Review 2003

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## Food Intolerance including Food Allergy Research Programme (T07)

The Food Intolerance Research Programme aims to investigate the causes and mechanisms underlying food intolerance, including food allergy. The work has in recent years focused on severe food allergy, in particular peanut allergy, and a major aim is to identify risk factors associated with the development of food allergy so that appropriate information can be provided for consumers.

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### Aims

The Food Intolerance research programme was established in 1994 and the current objectives are:

- To identify the risk factors (e.g. genetic, environmental, dietary and other risk factors) associated with the development of sensitisation to food proteins and the development of clinical food allergy,

### List of projects

#### T07 Programme Review 2003

A review of the Food Intolerance Research Programme was held on 25th-27th November 2003 at Moat House Hotel, York.

#### T07 Programme Review 2008

A review of the Food Intolerance Research Programme was held on 19th – 20th February 2008

#### T07 Project details

Details of Agency-funded projects under the Food Allergy research programme (T07).





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## T07 Project details

Details of Agency-funded projects under the Food Allergy research programme (T07).

### **T07001: The prevalence and natural history of peanut allergy and the investigation into its genetic environment and immunological determinants**

This research project aims to investigate the prevalence of peanut allergy in UK children and the factors affecting the development of peanut allergy.

Results available.

### **T07002: Development of food intolerance in atopic and non-atopic families - influence of maternal nutrition and infant feeding practice in pre-term infants**

This research projects aim to look at how such factors as feeding practices, a child's sex and social conditions influence the development of food intolerances in babies that were born prematurely.

Results available.

### **T07003: Investigation of the immunological mechanism inducing cows' milk sensitive enteropathy**

### **T07048: Systematic review on tolerable levels of gluten for people medically diagnosed with coeliac disease**

Results available.

### **T07049: Characterisation of the immune mechanisms involved in the induction of oral tolerance to peanuts in children**

### **T07051: Randomized controlled trial of early introduction of allergenic foods to induce tolerance in infants**

### **T07052: Systematic review of literature on early life patterns of exposure to and avoidance of food allergens and later development of sensitisation and clinical food allergy.**

### **ZT0702: Allergen database service**

This research project aims to improve clinical management of food allergy by analysing detailed clinical and laboratory data from patients attending a local allergy clinic with suspected nut allergy.





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**RSS** What is RSS?

## T07048: Systematic review on tolerable levels of gluten for people medically diagnosed with coeliac disease

Friday 11 January 2008

**Study Duration:** February 2006 to September 2006

**Contractor:** Coeliac UK

### Background

Coeliac disease is a life-long autoimmune disease caused by intolerance to gluten, a protein found predominantly in wheat, barley and rye cereals. Consumption of gluten causes damage to the gut lining, resulting in a wide range of symptoms, such as bloating, diarrhoea, and nausea, as well as, in longer term, a threshold dose of gluten or a threshold concentration of gluten in food products that would be tolerated by all people with coeliac disease.

### Research Approach

The researchers carried out a systematic review of all the scientific studies published between 1966 and March 2006 that had examined the relationship between the amount of gluten ingested or the concentrations of gluten in food products, and the development of symptoms or gut mucosal abnormalities in coeliac patients. Data were identified using pre-defined literature searching databases and reference lists of retrieved articles. Data from articles was extracted and various statistical analyses applied to see if it was possible to determine a statistically robust threshold level of gluten that coeliacs can tolerate.

### Results and findings

Twelve studies met the review criteria. The amount of gluten consumed, timescales of the studies and the ways in which effects of gluten were assessed, varied greatly between studies, and this complicated

### Dissemination information

The final report is available from the Agency's Information Centre.



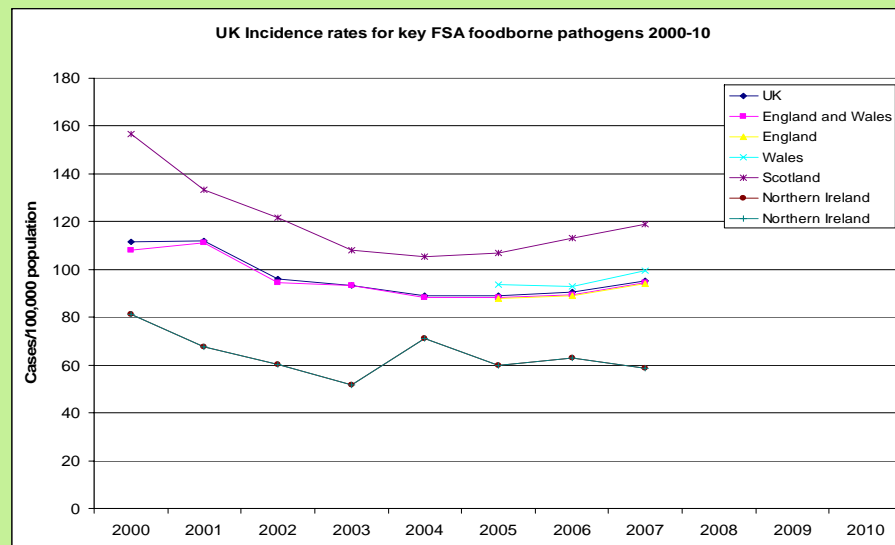
# KEY POINTS FROM 2007/8

- Developments on foodborne illness
- Progress on social science
- Establishment of GACS
- Progress on developing our scientists



# DEVELOPMENTS ON FOODBORNE ILLNESS

- No clear reduction in the incidence of fbi since 2005.



# CHALLENGES ON FBI

- The trend for *Campylobacter* has been upward since 2004. Why?
- The increase in *Listeria monocytogenes* cases is under investigation. It is largely in the over 60 age group.



# PROGRESS ON SOCIAL SCIENCE

- We now have social science expertise: Social Science Research Unit and Social Science Research Committee
- Social science research strategy drawn up for 1<sup>st</sup> meeting of SSRC
- British Social Attitudes Survey: module on public attitudes to innovative food technology
- Collaboration with the GSRU on a knowledge review about behaviour change



# Establishment of GACS

- Professor Blakemore is presenting his view as Chair of GACS
- My view of why it is important for the Agency to have GACS:
  - Forum for discussion about generic issues eg nature of evidence
  - Independent check eg 2 members who have examined our procedures for research commissioning
  - Bringing external views eg work on developing performance indicators



# PROGRESS ON DEVELOPMENT OF STAFF

- Pilot (in conjunction with IFST) for CPD scheme for scientists
- Seminars and courses developed to support the CPD scheme
- Chief Scientist lectures



# GOVERNMENT OFFICE FOR SCIENCE'S SCIENCE REVIEW

- Report expected in November 2008
- We hope it will recognise:
  - The way we use science reflects our core principles
  - Draw on a depth and breadth of scientific expertise
  - Our use of science has integrity and is accountable
  - We are committed to continuing improvement on science governance
  - Our communication of scientific issues recognised as leading the way
- Where can we do better?
  - Horizon scanning
  - Knowledge transfer



# THE FOOD ADVISORY COMMITTEES

- All Committees welcomed the presentations and the opportunity to comment on the Agency's science and the Science Review
- Comments have informed the Science Review and the Chief Scientist's 2<sup>nd</sup> Annual Report



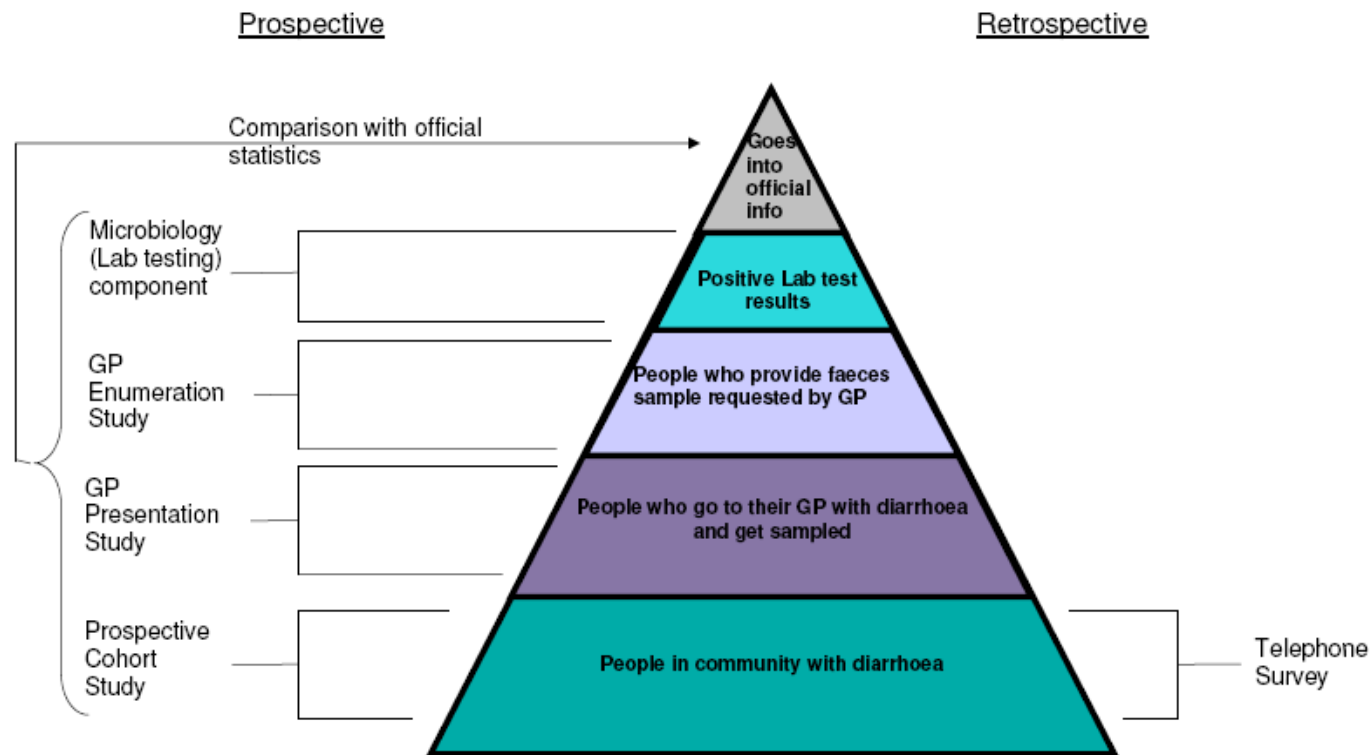
# EXAMPLES OF RESEARCH

- Infectious Intestinal Disease 2 Study
- 1<sup>st</sup> study published in 2000 and showed that for every 136 cases of IID, only 1 is reported
- 2<sup>nd</sup> study will update this information and be used to calibrate the national surveillance systems for IID



# DESIGN OF IID2

Figure 2: The second study of infectious intestinal disease in the community - determining disease burden and calibrating national surveillance systems in the United Kingdom



# WHAT HAS THE PILOT STUDY SHOWN?

- 24 faecal samples were tested.
- traditional methods identified pathogens in 4 samples
- molecular testing methods detected pathogens in 11 of the samples, including norovirus in 7 of the samples



# LOOKING FORWARD TO 2008/9

- Embedding social science
- Continuing development of our scientists
- Introduction of open access publishing
- Improving our approach to peer review of Agency work
- Further development of performance indicators
- Making progress on assessing the effects of climate change

