



Chartered Institute of
Environmental
Health

Sefydliad Siartredig
Iechyd yr
Amgylchedd

Allergy Strategy for Wales

Results of the Welsh
Allergy Awareness
Food Sampling Programme

October 2007

Summary

The Allergy Strategy for Wales was launched at the Public Health: Everyone's Agenda Conference in March 2007. The Chartered Institute of Environmental Health (CIEH) is one of the partners and has commissioned this research work, which study mirrors work that was carried out in Northern Ireland using the same methodology in 2001.

A food allergy is an adverse immune reaction to a protein contained in a food which is normally harmless to the non-allergic person. Allergic hypersensitivity may cause varying degrees of reaction from mild itching of the skin, tissue swelling and wheezing, to anaphylaxis, which may result in death.

As part of the Action Plan to the Allergy Strategy for Wales an all Wales sampling programme was developed to raise awareness of the risks posed to allergy sufferers by the undeclared presence of allergenic food in prepared foods. The research focused principally on Indian restaurants (with or without a takeaway). Informal food samples were taken separately by two sampling officers, the second specifically requesting a nut free meal. Samples were analysed for the presence of peanut protein using Enzyme Immuno Assay.

The results indicate that 6% of catering food premises sampled failed to provide a nut free meal, even when specifically requested for such. The level of knowledge and/or understanding is questionable amongst the catering staff. Despite being reassured, verbally in the majority of cases, an allergy sufferer may still be inadvertently sold dangerous food. Further, it is extremely difficult, due the level of sensitivity of individuals especially those who may be hyper-sensitive, to state that a food is completely free from peanut residues.

It is opportune to thank the participating local authorities for their time, enthusiasm and commitment in supporting this important piece of research work and in doing so supporting the Allergy Strategy for Wales.

Introduction

Anaphylaxis is a severe allergic reaction – characterized by a rapid fall in blood pressure and severe swelling of various parts of the body, including the throat which can cause difficulty in breathing. The whole body is affected, often within minutes of exposure to a very small amount of allergen but sometimes after hours. Official figures estimate approximately ten deaths per year are caused by anaphylactic reactions triggered by food. Common causes include foods such as peanuts, tree nuts (e.g. almonds, walnuts, cashews, brazils), sesame, soya, fish, shellfish, dairy products and eggs.

The Allergy Strategy for Wales launched in 2006 aims to:

- Raise awareness and levels of knowledge of the issues of allergies and food sensitivities with food manufacturers, caterers, retailers and the public,
- Undertake research to establish levels of awareness amongst caterers of allergens, both as deliberate ingredients and as cross contaminants and the risk that they pose to sufferers, and take such action as may be appropriate to address such issues as may be identified,
- Reduce risk to food allergy sufferers by:
 - Raising the profile of food allergies, their causes and their effects on sufferers,
 - Working in partnership with the Food Standards Agency and with manufacturers in Wales to ensure that food packets disclose accurately, clearly, consistently and legibly the presence of any ingredients known to cause allergenic reactions,
 - Working with caterers to ensure that the presence of foods known to cause allergenic reaction as ingredients in prepared foods is accurately declared to customers,
 - Working with food manufacturers and retailers to reduce the risk of allergen cross contamination of non allergen ingredients or food products, Working to ensure that cautionary labelling by caterers and food retailers in respect of allergens is realistic and proportionate.

The Allergy Strategy is backed by a comprehensive Food Allergen Action Plan for Wales - the sampling programme being one area of the Plan.

Methodology and Results

The purpose of the sampling programme was to establish the levels of awareness of allergens amongst caterers in Wales and to establish what, if any, awareness raising is required and what training needs are identified.

Sampling Method

Indian restaurants were selected because many of the dishes contain nuts, either as whole or ground nuts or a garnish and often ground nut oil is used for frying and for tempering utensils, but goes unrecognised as an ingredient. The presence of nuts as an ingredient in food products is not commonly declared. There is also the risk of cross contamination of nut free food with products containing nuts during the preparation stage whereby many sauces are made in large batches and tailored to suit specific meals. Where suitable Indian restaurants were not available local authorities substituted Chinese restaurants.

A total of 90 samples were collected between March 2007 and July 2007 by 17 Welsh local authorities. Premises were identified by the relevant Local Authority Officers and the sampling officer, who was unknown to the business proprietor, collected samples at peak periods, principally Thursday, Friday and Saturday nights. There was neither advance notice of the sampling visit, nor was an explanation of the purpose of the sampling provided to the food business. All food samples were analysed at Cardiff Scientific Services, Cardiff. Three Local Authorities participated in a pilot study in February 2007 which comprised 9 samples and the results from this study are included within the findings, where appropriate. The sampling procedure and sampling form are provided in Appendix 1 and Appendix 1a, respectively.

The Enzyme Immuno Assay

All the samples were analysed by the Enzyme-Linked Immuno Sorbent Assay (ELISA), or the Enzyme Immuno Assay, for short. This is a biochemical technique used to detect the presence of an antibody or an antigen in a sample.

The sample with an unknown amount of antigen is immobilized on a solid support, either non-specifically (via adsorption) or specifically (via capture by another antibody specific to the same antigen, in a "sandwich"). After the antigen is immobilized the detection antibody is added, forming a complex with the antigen. The detection antibody can be covalently linked to an enzyme, or can itself be detected by a secondary antibody which is linked to an enzyme. Between each step the plate is typically washed with a mild detergent solution to remove any proteins or antibodies that are not specifically bound. After the final wash step the plate is developed by adding an enzymatic substrate to produce a visible signal, which indicates the quantity of antigen in the sample.

Findings

The sampling programme aimed to establish whether the caterer could provide safe nut free meals on request and determine if customers are provided with any information on the allergenic status of the foods produced by the restaurant/takeaway.

A tabulated summary of the sampling results is provided in Appendix 2.

There were 99 food samples analysed as part of the Allergy Strategy Action Plan, 9 of which formed the pilot study. A full set of questionnaire results is not available for all the pilot food samples, however two samples were analysed at a level, which in the Public Analysts opinion, *would affect susceptible people*.

Of the remaining 90 allegedly nut free samples, 4 food samples were found to be above the lower threshold of detection, (i.e. <1mg/Kg). One was reported as a 'Trace' and the Public Analyst observed *peanut residue slightly above the level of detection of the method employed was present in the submitted sample*. The second was reported as >2<10, the third >10<20 and the fourth >20 mg/Kg. The Public Analyst's comments, as well as confirming the presence of peanut residue in the samples, included his opinion that they were each *at a level which would affect susceptible people*.

In all 4 cases there were no visible warnings provided on menus or within the premises and 3 of the 4 food businesses provided no verbal warnings despite one premises having received allergy advice from the sampling local authority. In the case of the food premises which did provide the verbal advice, the front of house staff had noted the request on the order and confirmed it with the kitchen staff, however the meal 'sold' was potentially dangerous to a nut allergy sufferer.

The remaining samples were all found to be less than the level of detection and in the main the Public Analyst provided the following opinion and observations regarding the samples:

No peanut residue above the level of detection of the method employed was present in the submitted sample. Note that it should not be assumed that the food is peanut free as no level of peanut contamination is currently considered safe for susceptible individuals.

A number of sampling officers noted that the counter staff were unsure and/or confused what the request for a nut free meal really meant, although in the majority of cases, staff confirmed meals were nut free. Where there was communication with the kitchen staff this was either carried out behind the scenes and/or not in English so was not witnessed/understood by the sampler. Written allergy advice was displayed in 5 food businesses, however, one food business displayed the following statement on the menu for their customers:

Please Note

If you suffer from certain food allergies please inform the management before ordering!

The sampling officer however was met with confusion when a nut free meal was ordered.

Of the 90 samples analysed as part of the main sampling programme, where known only 20 of the sampled food businesses had received any advice pertaining to allergens from their enforcing local authority. It is not possible to ascertain whether there had been any changes to managers/owners since the information had been provided to the food business. Over 20% of local authorities were unable to confirm whether the food businesses sampled had received such information.

Recommendations

The varying levels of tolerance of sensitivity to nut and nut proteins make it extremely difficult for the caterer (and indeed the consumer) to be one hundred percent certain that food products are completely nut free.

However, there clearly needs to be more information provided to caterers, particularly the restaurant/takeaway premises which formed the backbone of the sampling programme, to help raise their understanding and knowledge of the risks posed to allergy sufferers by the undeclared presence of allergenic ingredients in prepared foods. This could be achieved through joint working between the Food Standards Agency and local authorities and include promotional material as well as training/instruction as part of a partnership working initiative.

This evidence suggests that susceptible individuals who suffer from a food allergy must remain vigilant when eating out so as to ensure they do not consume potentially harmful foods.

SAMPLING PROCEDURE

APPENDIX 1

Local Authority Officers worked in pairs and were requested to sample 5 different food premises purchasing one set of samples at each premises – one nut free meal and one meal believed to contain nuts.

The first Sampling Officer (SO1) entered the premises alone and requested to purchase a meal - chicken / beef / lamb / prawn satay - or any other meal believed to contain nuts. Whilst waiting for the meal they casually surveyed the premises for evidence indicating products may contain nuts, or are produced in an environment where nuts are used. Wherever possible any evidence, such as a menu, was obtained.

Upon receiving the meal, they left the premises. Without tampering with the meal in any way and wearing plastic gloves the sample was placed in a plastic bag and sealed with a council numbered security tag.

Immediately SO1 left the premises, the second Sampling Officer (SO2), ordered a nut free meal by asking the counter staff which meals were nut free. Where the counter staff were unable to guarantee any of the meals were nut free, SO2 advised them he/she could not risk the purchase and left the premises.

Where a list of allegedly nut free meals was suggested, SO2 was to select one, reconfirm the meal was nut free and order observing what, if anything was noted on the order. Wherever possible, SO2 was to obtain the order receipt upon receipt of the meal. Again, after leaving the premises, without tampering with them meal in any way and wearing plastic gloves, the sample was placed in a plastic bag and sealed with a council numbered security tag.

Both SO1 and SO2 were required to complete the survey form (Appendix 1a) and ideally store the two samples (i.e. one containing nuts and the other allegedly nut free) in separate cool boxes. Only the allegedly nut free samples collected by SO2 were sent for analysis.

SUMMARY OF SAMPLING RESULTS FOR ALLERGY STRATEGY RESEARCH

APPENDIX 2

| No | Sample Type | Result (mg/Kg) | Allergy Warning | | | | Order Comments | | Consultation | | Advice to Business | | Type of Business | |
|----|-----------------------------------|----------------|-----------------|----|--------|-----------|----------------|----|--------------|----|--------------------|-----------|------------------|-------------------------|
| | | | Visible | | Verbal | | Yes | No | Yes | No | Yes | No | Takeaway | Restaurant/ Takeaway |
| | | | Yes | No | Yes | No | | | | | | | | |
| 1 | Beef Curry & Fried Rice | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 2 | Pineapple Chicken | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 3 | Sweet & Sour Chicken & Fried Rice | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | No record | | |
| 4 | Curried Chicken & Rice | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 5 | Chicken & Mushroom | <1 | | ✓ | | No record | ✓ | ✓ | | | ✓ | ✓ | | |
| 6 | Chicken Chow Mein | <1 | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ | | |
| 7 | Chow Mein | <1 | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ | | |
| 8 | Chicken Chow Mein | <1 | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ | | |
| 9 | Chicken Chow Mein | <1 | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | No record | | |
| 10 | Chicken Chow Mein | <1 | | ✓ | | ✓ | ✓ | | ✓ | ✓ | | No record | | |
| 11 | Sweet & Sour Chicken | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 12 | Pork Chili & Black Bean Sauce | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | | ✓ | |
| 13 | Szechaun Chicken | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 14 | Crispy Pork Peking Style | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 15 | Stir Fried Beef & Mushroom | >2<10 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | | ✓ | |
| 16 | Chicken Tikka Mossalla | <1 | | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |
| 17 | Chicken Tikka Mossalla | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | | ✓ | |
| 18 | Agra Special | <1 | | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | ✓ | |
| 19 | Chicken Tikka | <1 | | ✓ | | ✓ | ✓ | ✓ | | | ✓ | | ✓ | |
| 20 | Kashmiri Shabjee | <1 | | ✓ | ✓ | | ✓ | | ✓ | | ✓ | | ✓ | |
| 21 | Chicken with Mushrooms | <1 | | ✓ | ✓ | | ✓ | ✓ | | | ✓ | ✓ | | |
| 22 | Chicken Chow Mein | <1 | | ✓ | ✓ | | ✓ | ✓ | | | No record | ✓ | | |
| 23 | Chicken Chop Suey | <1 | | ✓ | ✓ | | ✓ | ✓ | | | No record | No record | | |
| 24 | Chicken Chop Suey | <1 | | ✓ | ✓ | | No record | ✓ | | | No record | ✓ | | |
| 25 | Chicken Kung Po | <1 | | ✓ | ✓ | | ✓ | ✓ | | | No record | ✓ | | |
| 26 | Fried Beef with Beansprouts | Trace | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | | ✓ | |
| 27 | Pork with Ginger & Spring Onion | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 28 | Barbequed Pork with Mushroom | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |
| 29 | Beef with Beanshoots | <1 | | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | |

| | | | | | | | | | | |
|----|------------------------------------|----|----------------------|-----------|---|-----------|-----------|---|---|--|
| 30 | Chicken with Pineapple | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 31 | Chicken Curry | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 32 | Chicken Curry | <1 | ✓ | ✓ | ✓ | No record | ✓ | ✓ | ✓ | |
| 33 | Chicken Curry | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 34 | Chicken Curry | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 35 | Chicken with Beansprouts | <1 | ✓ | ✓ | ✓ | No record | No record | ✓ | ✓ | |
| 36 | Chicken Curry | <1 | ✓ | No record | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 37 | Beef in Cantonese Sauce | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 38 | Chicken Balls Sweet & Sour | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 39 | Beef with Onions | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 40 | Beef with Mushrooms | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 41 | Chicken Curry | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 42 | Sweet & Sour Chicken Balls | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 43 | Chicken Chop Suey | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 44 | Chicken Chow Mein | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 45 | Chicken with Tomato | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 46 | Chicken Curry | <1 | No Records Available | | | | | | | |
| 47 | Chicken in Black Bean Sauce | <1 | No Records Available | | | | | | | |
| 48 | Chicken & Mushroom in BB Sauce | <1 | No Records Available | | | | | | | |
| 49 | Beef with Ginger & Spring Onion | <1 | No Records Available | | | | | | | |
| 50 | Chicken Chop Suey | <1 | No Records Available | | | | | | | |
| 51 | Chinese Meal – Chicken Choy Mein | <1 | ✓ | ✓ | ✓ | ✓ | No record | ✓ | | |
| 52 | Chicken Chop Suey | <1 | ✓ | ✓ | ✓ | ✓ | No record | ✓ | | |
| 53 | Chinese Meal – Prawn Choy Mein | <1 | ✓ | ✓ | ✓ | ✓ | No record | ✓ | | |
| 54 | Chinese Meal – Chicken in YB Sauce | <1 | ✓ | ✓ | ✓ | ✓ | No record | ✓ | | |
| 55 | Chinese Meal King Prawn Fried Rice | <1 | ✓ | ✓ | ✓ | ✓ | No record | | ✓ | |
| 56 | Chicken Chop Suey | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 57 | Chicken Chow Mein | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 58 | Vegetable Chow Mein | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 59 | Beef and Tomato | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 60 | Chicken and Pineapple | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 61 | Chicken Chow Mein | <1 | ✓ | ✓ | ✓ | unknown | ✓ | | ✓ | |
| 62 | Chicken Chow Mein | <1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 63 | Chicken Chow Mein | <1 | ✓ | No record | ✓ | ✓ | ✓ | ✓ | ✓ | |

| | | | | | | | | | | | |
|----|------------------------------------|---------------|----------------------|---|-----------|---------|---------|---|-----------|---|-----------|
| 64 | Chicken Chow Mein | <1 | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| 65 | Chicken Chow Mein | <1 | ✓ | | ✓ | ✓ | ✓ | | ✓ | | ✓ |
| 66 | Chicken Curry | <1 | ✓ | ✓ | | ✓ | ✓ | | No record | | ✓ |
| 67 | Chicken Pathia | <1 | ✓ | | ✓ | ✓ | ✓ | | No record | | ✓ |
| 68 | Chicken Korma | <1 | ✓ | | ✓ | ✓ | ✓ | | No record | | ✓ |
| 69 | Chicken Korma | <1 | ✓ | | ✓ | ✓ | | ✓ | No record | | ✓ |
| 70 | Chicken Curry | <1 | ✓ | | ✓ | ✓ | | ✓ | No record | | ✓ |
| 71 | Chicken Chow Mein | >10<20 | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ |
| 72 | Chicken Chow Mein | <1 | ✓ | ✓ | | ✓ | | ✓ | ✓ | | ✓ |
| 73 | Chicken Chow Mein | <1 | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| 74 | Chicken Chow Mein | <1 | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ |
| 75 | Chicken Chow Mein | <1 | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ |
| 76 | Special Curry | <1 | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| 77 | Deep Fried Chicken in Sauce | <1 | ✓ | ✓ | | ✓ | | ✓ | ✓ | | ✓ |
| 78 | Special Curry | <1 | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| 79 | Beef in Cantonese Sauce | <1 | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| 80 | Chicken Curry | >20 | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| 81 | Chicken Curry | <1 | ✓ | | No record | Unknown | Unknown | ✓ | | | ✓ |
| 82 | Chicken Curry | <1 | No record | | No record | Unknown | Unknown | ✓ | | | ✓ |
| 83 | Chicken Curry | <1 | ✓ | ✓ | | Unknown | Unknown | ✓ | | | ✓ |
| 84 | Chicken Curry | <1 | ✓ | ✓ | | Unknown | ✓ | ✓ | | | ✓ |
| 85 | Chicken Curry | <1 | ✓ | ✓ | | Unknown | Unknown | | | ✓ | ✓ |
| 86 | Chicken and Onion | <1 | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| 87 | Mushroom Foo Yang | <1 | ✓ | | ✓ | ✓ | | ✓ | | ✓ | ✓ |
| 88 | Chicken with Mixed Veg | <1 | No record | | No record | ✓ | | ✓ | | ✓ | ✓ |
| 89 | Mushroom Curry | <1 | ✓ | | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| 90 | Spicy Chicken | <1 | ✓ | | ✓ | ✓ | | ✓ | | ✓ | No record |
| 91 | Chicken Chow Mein (Pilot Study) | Not indicated | ✓ | ✓ | | ✓ | | ✓ | ✓ | | ✓ |
| 92 | Chicken Chow Mein (Pilot Study) | 6 | ✓ | ✓ | | ✓ | | ✓ | ✓ | | ✓ |
| 93 | Chicken Chow Mein (Pilot Study) | 2 | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| 94 | Chicken Bhuna (Pilot Study) | Not indicated | No records available | | | | | | | | |
| 95 | Chicken Bhuna (Pilot Study) | Not indicated | No records available | | | | | | | | |
| 96 | Chicken Tikka Masala (Pilot Study) | Not indicated | No records available | | | | | | | | |

| | | | |
|----|-----------------------------|---------------|----------------------|
| 97 | Chicken Balti (Pilot Study) | Not indicated | No records available |
| 98 | Chicken Balti (Pilot Study) | Not indicated | No records available |
| 99 | Chicken Balti (Pilot Study) | Not indicated | No records available |

Key to Table Headings: The table headings relate to the specific proforma questions as follows:

| Table Heading | Proforma Question |
|--------------------------------------|---|
| Sample type | Informal sample of (Name of food)..... |
| Allergen warning – visible verbal | Were there any allergy warnings: visibly YES / NO verbally YES / NO |
| Order comments | For the nut free meal request was there any special note taken on the order? YES / NO |
| Consultation | Was there any consultation with the front of house and kitchen staff regarding the request for a nut free product? YES / NO |
| Advice to business | Is the premise known to have been given specific advice/guidance on allergy issues (Do not quiz staff on this aspect)? YES / NO |
| Type of business | Premises type: Takeaway / Restaurant with takeaway |