ALLERGEN PRIORITY LISTS AROUND THE WORLD
THE BIG 8 AND BEYOND

Steve L. Taylor, Ph.D.
Food Allergy Research & Resource Program
University of Nebraska

8th Food Allergen Methodologies Conference
Vancouver BC Canada
May 6, 2014
History of Priority Allergen Lists

1992: Nordic countries develop a paper on ‘Consideration of Potential Allergens in Food’
1993: That paper is submitted to and discussed by Codex Committee of Food Labeling (CCFL) which recommends an expert consultation
History of Priority Allergen Lists
Charge to FAO Expert Panel

- Recommend criteria for establishment of a list of priority foods that should always be labeled due to food allergies or intolerances
- Consider prevalence and severity; potency not considered
- Develop a list of priority foods
- So the list included foods causing IgE-mediated food allergies, celiac disease, and food intolerances/sensitivities
1995 FAO Recommended List

- The list of ingredients that should always be declared:
  - Cereals containing gluten, i.e. wheat, rye, barley, oats, spelt or their hybridized strains and products of these.
  - Crustaceans, and products of these
  - Eggs and egg products
  - Fish and fish products
  - Peanuts, soybeans and products of these
  - Milk and milk products (lactose included)
  - Sulfite in concentrations of 10mg/kg or more
  - Tree nuts and products of these
The Big 8
Most Common Causes of Food Allergy
(IgE-Mediated)

- Cows’ milk
- Egg
- Crustacea
- Fish
- Peanut
- Soybean
- Tree nuts
- Wheat
Comments on the FAO Recommended List

- Relatively little published, peer reviewed clinical information was available on prevalence, severity and potency of allergenic foods
- Prevalence was the key factor because consideration was given to both allergies and intolerances (lactose intolerance is very prevalent but comparatively mild)
- Most available data were from studies on groups of pediatric patients (no information on adult prevalence)
Key Publication

  - documented that IgE-mediated food allergies were involved in many cases of atopic dermatitis
  - egg, peanut, and milk responsible for 72%
  - tree nuts, fish, soybean and wheat were other common causes
Comments on the FAO Recommended List

- Sampson clinical data supported by other smaller pediatric studies especially of milk and egg
- Lactose intolerance added to consideration to put milk on the list
- Celiac disease led to adding cereal sources of gluten; only wheat is common in IgE-mediated food allergy
- Crustacean shellfish added by unanimous decision of expert panelists even though no published evidence to support
History of Priority Allergen Lists

1996: CCFL receives report for FAO Expert Panel and begins to discuss
1999: Report submitted to FAO/WHO Joint Expert Committee on Food Additives (JECFA)
1999: JECFA adopts the report
1999: Codex Alimentarius Commission adopts the list of allergenic foods should always be labeled
1999 Codex List

- The list of ingredients that should always be declared:
  - Cereals containing gluten, i.e. wheat, rye, barley, oats, spelt or their hybridized strains and products of these.
  - Crustaceans, and products of these
  - Eggs and egg products
  - Fish and fish products
  - Peanuts, soybeans and products of these
  - Milk and milk products (lactose included)
  - Sulfite in concentrations of 10mg/kg or more
  - Tree nuts and products of these
Codex Alimentarius Commission

- Recommendations serve as guidance to member countries
- But countries can and do make changes to the list based upon local/regional considerations
U.S. List of Most Common Causes of IgE-Mediated Food Allergy

- Cows’ milk
- Egg
- Crustacean shellfish
- Fish
- Peanut
- Soybean
- Tree nuts
- Wheat
Canada
List of Commonly Allergenic Foods

- Cereals containing gluten (wheat, rye, barley, oats, spelt)
- Shellfish and their products (crustacea and molluscs)
- Eggs and egg products
- Fish and fish products
- Milk and milk products
- Peanuts and their products
- Soybeans and their products
- Tree nuts and their products
- **Sesame seeds** and their products
- **Mustard** and its products
European Union
List of Commonly Allergenic Foods

- Cereals containing gluten (wheat, rye, barley, oats, spelt)
- Crustacean shellfish and their products
- **Molluscan shellfish** and their products
- Eggs and egg products
- Fish and fish products
- Milk and milk products
- Peanuts and their products
- Soybeans and their products
- Tree nuts and their products
- **Sesame seeds** and their products
- **Mustard** and its products
- **Celery** and celery products
- **Lupin** and its products
Australia/ New Zealand
List of Commonly Allergenic Foods

- Cereals containing gluten (wheat, rye, barley, oats, spelt)
- Shellfish and their products (crustacea and molluscs)
- Eggs and egg products
- Fish and fish products
- Milk and milk products
- Peanuts and soybeans and their products
- Tree nuts and sesame seeds and their products
- Bee pollen/propolis
- Royal jelly
Japan
Mandatory List
Commonly Allergenic Foods

- Crustacean shellfish (shrimp, prawn, crab)
- Milk
- Peanut
- Wheat
- Egg
- Buckwheat
<table>
<thead>
<tr>
<th>Japan Recommended List</th>
<th>Commonly Allergenic Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Abalone</td>
<td>- Orange</td>
</tr>
<tr>
<td>- Squid</td>
<td>- Kiwi</td>
</tr>
<tr>
<td>- Salmon</td>
<td>- Banana</td>
</tr>
<tr>
<td>- Salmon roe</td>
<td>- Peach</td>
</tr>
<tr>
<td>- Mackerel</td>
<td>- Apple</td>
</tr>
<tr>
<td>- Cashew</td>
<td>- Soybean</td>
</tr>
<tr>
<td>- Walnut</td>
<td>- Sesame seed</td>
</tr>
<tr>
<td></td>
<td>- Matsutake mushroom</td>
</tr>
<tr>
<td></td>
<td>- Yam</td>
</tr>
<tr>
<td></td>
<td>- Gelatin</td>
</tr>
<tr>
<td></td>
<td>- Pork</td>
</tr>
<tr>
<td></td>
<td>- Chicken</td>
</tr>
<tr>
<td></td>
<td>- Beef</td>
</tr>
</tbody>
</table>
Korea
List of Commonly Allergenic Foods

- Crustacean shellfish (crab, shrimp, prawn)
- Eggs
- Milk
- Peanuts
- Soybean
- Mackerel (but not other fish)
- Wheat
- Buckwheat
- Peach
- Pork
- Tomato
Hong Kong
List of Commonly Allergenic Foods

- Cereals containing gluten (wheat, rye, barley, oats, spelt)
- Crustacean shellfish
- Eggs
- Milk
- Peanuts
- Soybean
- Fish
- Tree nuts
Taiwan
List of Commonly Allergenic Foods

- Shrimp and crab (but not other crustacean shellfish)
- Eggs
- Milk
- Peanuts
- Mango
Other Countries
With Big 8 or Big 8 + Wheat

• Argentina
• Bolivia
• Chile
• Colombia
• Costa Rica
• Cuba
• Mexico
• Nicaragua
• Venezuela
What Criteria Do Countries Use to Establish Priority Allergen Lists?
Criteria

- Some countries simply follow Codex guidance
- Prevalence (incl. local/regional)
- Severity
Comparative Prevalence Studies

- Information is lacking
  - few studies
  - scientific methods limitations
Comparative Prevalence Studies

- Some based on skin test results
  - high false positive rate for foods
- Some based on in vitro test results
  (ex. RAST)
  - high false positive rate for foods
- Few based on blinded challenges
  (“gold standard”)

©2014
Ideal Future Situation

• Decisions should be based upon sound clinical science
• Many foods have some potential to cause allergic (even severe reactions)
• Labeling is important but priority labeling should be restricted to foods with high prevalence and severity