

occurs an immune response occurs. Often the response results in the production of allergen specific IgG and the development of immune complexes, similar to Arthus reaction/serum sickness model or a Coombs-Gell Type III reaction.

The question remains how much bio-burden of IgG antibody assault can one tolerate? There has to be a limit of tolerance and once this threshold exceeds a patient's tolerance, ill effects are seen in individuals. It is important to understand that each individual has different immunological responses that depend on the individual's genetic make-up. There are no fixed criteria that define the limits of these antibodies. Demographic variations exist including age, gender, geographical location, culture and life-style. Food sensitivity can be dose related yet there is no antigen quantity required to trigger the immunological response. Even micro or nano quantities are sufficient to express its immunological effect in terms of response. Therefore it is important that both IgE and IgG levels be used as guidelines in assessing the ill effects of food allergy and sensitivity.

A complete clinical and food history is recommended to identify the most appropriate test for each patient. For example, in pediatric populations, significantly elevated levels of antibodies to various food groups are often observed. This can be indicative of future risk factors for the future development of food allergy in these children. It is important to note that only IgG antibodies can cross the placenta from mother to child. Breast-feeding is also a carrier of IgG antibodies from mother to child. These children with elevated IgG antibodies should be tested for inhalant IgE allergy. Different methods of allergy testing are available yet

laboratory testing is the safest and most effective. Serum levels of IgE and IgG are the gold standard to assessing food allergy and sensitivity.

Yet, it is important to be aware of certain plant proteins that cross-react with different pollens. This phenomenon is known as concomitancy. Conserved homologous proteins shared by pollens and foods likely account for this cross-reactivity. During allergy season high levels of IgG plant protein antibodies are observed in food sensitive individuals. Food allergic and sensitive individuals may experience an increase in symptoms. For example, individuals with ragweed allergy may experience oropharyngeal symptoms following the ingestion of melons or bananas. Recommendations for IgE inhalant allergy testing is advised for these types of individuals. In some cases this can be attributed to some of the super protein families. The immune system cannot differentiate between the various members of this particular family causing cross reactivity. For example, increased levels of IgG antibodies to vegetables and beans (including coffee beans) are sometimes associated with Lipid transfer proteins (LTP), lectins (polysaccharides), and/or profilins (actin binding proteins). If the patient does not have a history of eating the vegetable or bean and if they show increased levels of IgG antibodies to these foods, this can be a positive reflection of LTP, lectin or profiling protein sensitivity. This response is commonly seen in pediatric populations and has been coined the term "allergic march." This suggests a future predisposition to food allergy or food sensitivity.

An advantage of measuring both IgE and IgG food allergen levels is that the test can be performed from a single blood sample. Utilizing laboratory testing to

Table 1

Allergen	Potential Cross-Reactive Foods
Ragweed	Bananas, melons (watermelon, cantaloupe, honeydew) zucchini, cucumbers, dandelions, chamomile tea
Birch	Apples, pears, peaches, apricots, cherries, plums, nectarines, prunes, kiwis, carrots, celery, potatoes, peppers, fennel, parsley, coriander, parsnips, hazelnuts, almonds, walnuts
Grass	Peaches, celery, melons, tomatoes, oranges
Mugwort	Celery, apples, kiwis, peanuts, fennel, carrots, parsley, coriander, sunflower, peppers
Alder	Celery, pears, apples, almonds, cherries, hazelnuts, peaches, parsley
Latex	Bananas, avocados, kiwis, chestnuts, papayas

*(Continued on next page)*