SIGNIFICANCE OF TOTAL IGG VERSUS IGG4

The goal of IgG-mediated food allergy testing is to identify foods that are capable of triggering many adverse reactions. IgG1, IgG2, and IgG3 are all capable of causing inflammation. IgG1, IgG2, and IgG3 antibodies to food antigens form large immune complexes or lattices that activate complement proteins and increase inflammation. IgG4 antibodies to food antigens will not usually trigger inflammation because IgG4 antibodies do not bind complement. However high levels of these antibodies indicate the presence of immune reactions against food antigens. Similarly IgA antibodies are not as clinically significant due to their inability to bind complement and trigger inflammation.

While most laboratories only provide a measurement of IgG4 molecules, The Great Plains Laboratory provides a measurement of total IgG antibodies to various food-based antigens and Candida, a genus of yeast native to the GI tract. Testing for only IgG4 antibodies limits the ability of the clinician to identify those foods that may be causing significant clinical reactions in their patients. IgG4 antibodies usually represent less than 6% of the total IgG antibodies. The importance of measuring all subtypes of IgG antibodies is highlighted in an article by Kemeny et al. They found that IgG1 antibodies to gluten were elevated in all patients with celiac disease but none of the patients had elevated IgG4 antibodies to gluten.