

***IgG and IgE avidity characteristics of peanut allergic individuals.***

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The role of antibody avidity in allergy is poorly understood and there is no existing literature describing antibody avidity in food allergy. The main aim of this study was to investigate IgE and IgG avidity to a total peanut protein extract (TPPE) and purified Ara h 2 in a group of well-characterized peanut allergic individuals. Forty peanut allergic patients underwent a double-blind placebo-controlled low-dose peanut challenge, during which the severity of the patients' peanut allergy was scored. Serum peanut-specific IgE (psIgE) and IgG (psIgG) concentrations were measured for 37 individuals and the avidities of the same antibodies to a TPPE and purified Ara h 2 were determined using a thiocyanate ELISA method. Both IgE and IgG avidity to Ara h 2 showed weak positive correlations with challenge score [ $r = 0.459$  ( $p = 0.012$ ) and  $r = 0.486$  ( $p = 0.003$ ), respectively]. IgE avidity to TPPE showed a weak positive correlation with skin prick test results (SPT),  $r = 0.467$  ( $p = 0.004$ ) and there was an inverse relationship between the ratio of total IgE:psIgE and challenge score  $r = -0.561$  ( $p < 0.001$ ). No significant relationship was found between the ratios of IgE avidity:IgG avidity and challenge score or SPT. This is the first description of IgE and IgG avidity in peanut allergy, and it appears that the avidities of IgE and IgG antibodies to purified Ara h 2 are weakly related to the severity of peanut allergy (as measured by a challenge score).