

Preliminary Findings: Relationship Between IgG-Based Food Elimination and Whole-Body Inflammation

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ABSTRACT

High levels of whole-body inflammation are associated with increased risk of poor health outcomes and chronic disease. Inflammatory symptoms (e.g., digestive, psychological, and whole-body irritation) are commonly addressed via food elimination diets, yet individual differences may exist for persons with unique immunoglobulin-G (IgG) mediated food sensitivities. Few studies have examined IgG food sensitivities using an understood biomarker of inflammation, high-sensitivity C-Reactive Protein (hsCRP). Identification of IgG mediated food sensitivities may be a feasible means for targeted-food elimination seeking to address inflammatory symptoms. **PURPOSE:** To assess measurable changes in primary outcomes, hsCRP and inflammatory symptomology, within subjects following an IgG targeted-food elimination diet compared to standard diet. **METHODS:** From 2021-2023, 20 subjects (male: n=20, Age=26 ± 7.6, Wt (kg)=88.43 ± 20.74, LBM (kg)=67.44 ± 10.15) underwent both a 4-week standard diet and 4-week IgG-targeted elimination diet, in a cross-over design ordered by random assignment. Body composition (InBody 570, BIA), inflammation (hsCRP blood draw), and symptomology (Inflammatory Symptom Screening Questionnaire) were assessed at baseline. Participants completed hsCRP and symptom screeners at the following appointments: start and end of baseline (days 1, 8), after week one and week four of first (days 15, 36) and second diet assignment (days 43, 64). Food logging was done throughout the duration of the study. Correlations and ANOVAs were run to assess relationships between demographics and hsCRP and symptom screener scores, as well as any interaction between diet condition, time point, or diet order. Data are reported as mean ± standard error. **RESULTS:** No meaningful correlations were found between InBody assessments and primary outcomes. No differences were found in hsCRP measurements between any of the time points in the standard and elimination diet conditions (p=.810). On the contrary, differences in inflammatory symptom scores were dependent on diet condition (p<.001). During their standard diet, participants reported increased symptom frequency at week one (20.40) and week four (20.33). Greater differences in inflammatory symptomology were found the longer participants eliminated food; after one week of elimination (15.20) compared to one week of standard diet (-5.20, p=.001) and four weeks of standard diet (-5.13, p=.003). Differences were magnified by the fourth week of elimination (10.67) compared to week one (-9.73, p<.001) and week four of standard diet (-9.667, p<.001). **CONCLUSION:** This study suggests targeted IgG-based food elimination diets significantly reduce inflammatory symptoms despite finding no detectable changes in whole body inflammation via hsCRP. The results presented here influenced a subsequent study examining the effect of plant versus animal protein on athletic performance in individuals with and without whey IgG sensitivities.