

Oral Supplementation with Serum-derived Bovine Immunoglobulin Protein Isolate is Associated with a Reduction in the Incidence of Dietary Endotoxemia

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Background

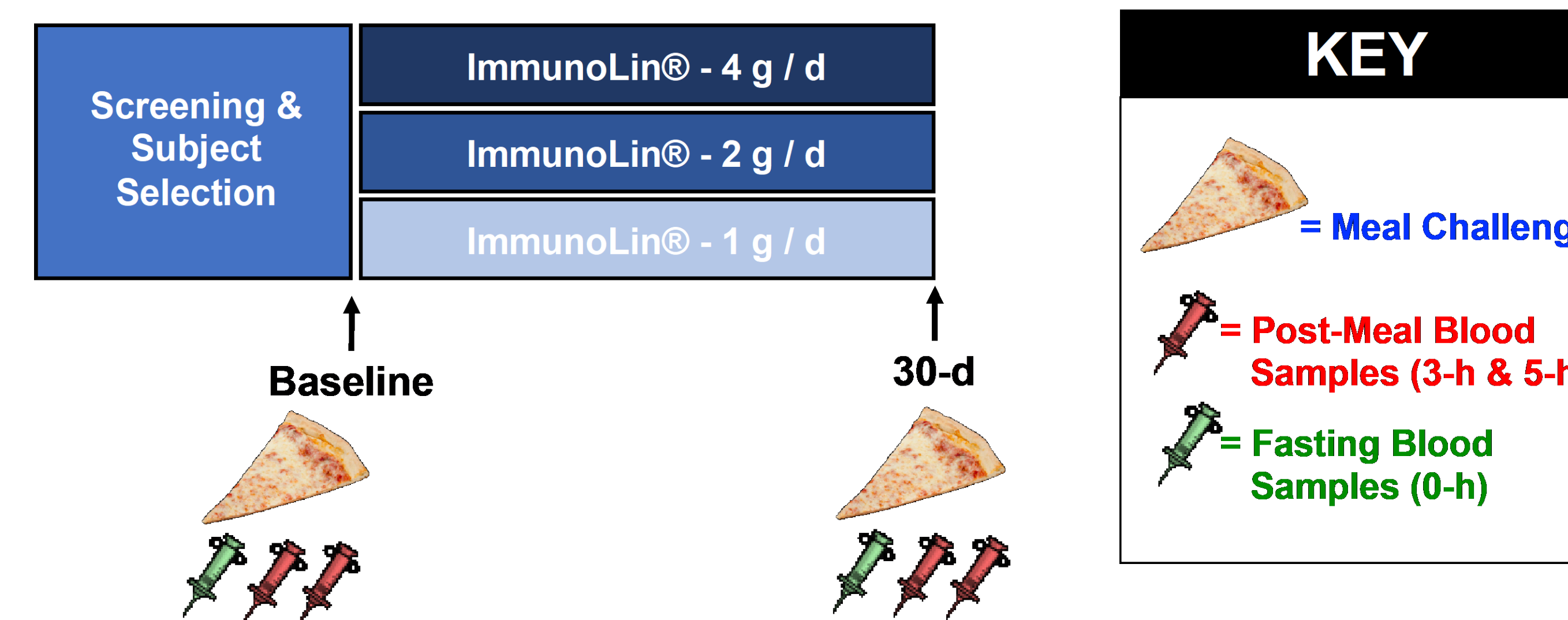
Long-term exposure to dietary endotoxemia may result in the development of a variety of chronic inflammatory diseases (i.e. cardiovascular disease, type II diabetes mellitus, etc.). A combination of genetic and environmental factors are speculated to impact the prevalence of dietary endotoxemia. Nutritional supplementation represents an attractive treatment for addressing endotoxemia when dietary change alone isn't effective.

The purpose of the present study was to determine if 45-d of oral supplementation with serum-derived bovine immunoglobulin protein isolate could result in a decreased dietary endotoxemia.

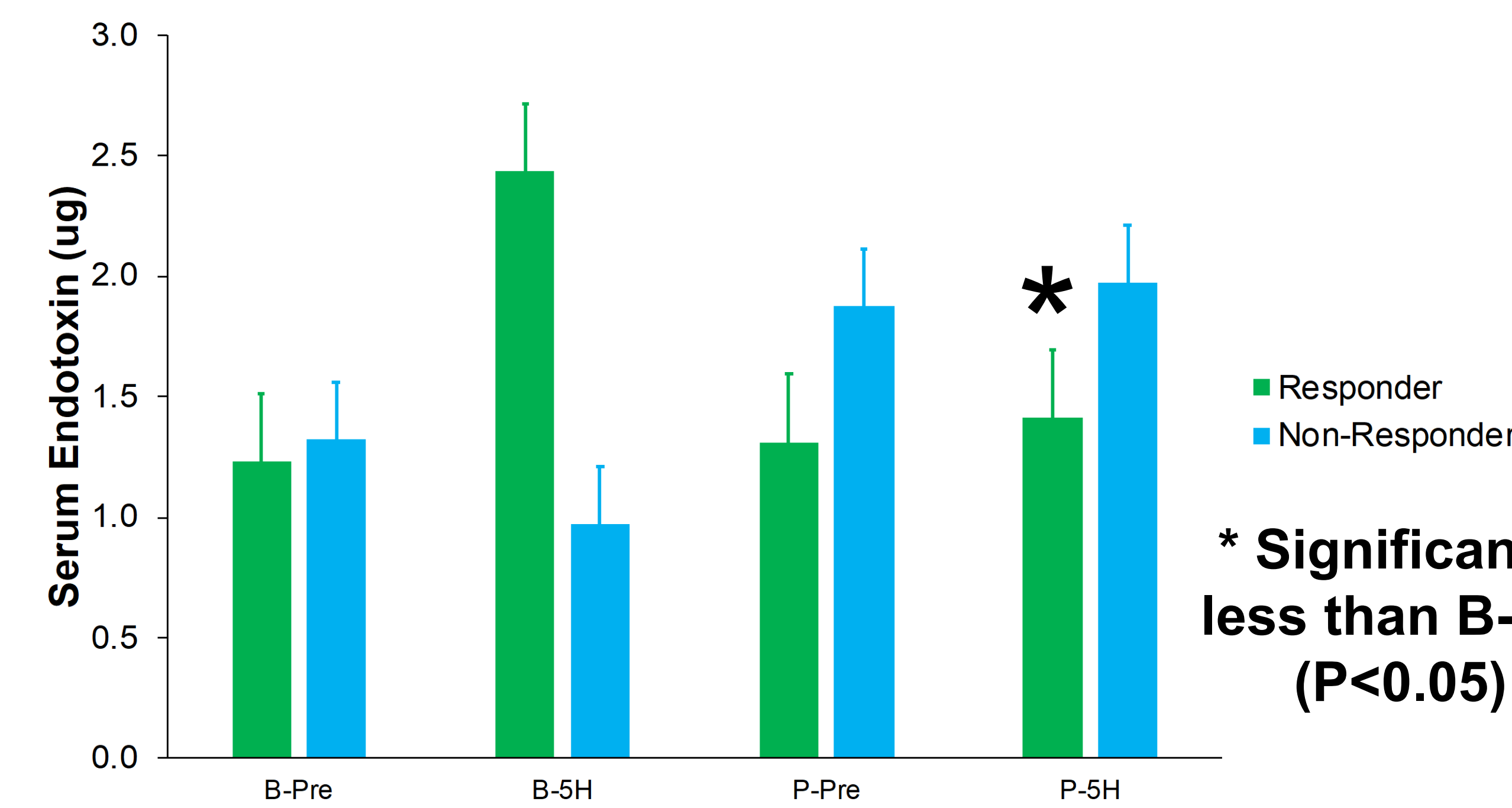
Methods

- Subjects:** IRB-approved consent given to participate (N=19). Venous blood samples were collected into SST serum separator tubes (Griener Vacuette). Serum was separated and frozen at -70°C until analysis.
- Experimental Meal Challenges:** Subjects were screened for dietary endotoxin response prior to and after 45-d of supplementation. Blood was tested at 5-h after consuming a high-fat, high-calorie meal (cheese pizza; ~80% of daily RMR).
- Supplementation:** Subjects were randomized to one of three experimental treatments: 1, 2, or 4 g/d of ImmunoLin® (EnteraHealth) for 45-d
- Endotoxin:** Serum endotoxin was measured using a standard LAL assay (Lonza Biotech).
- Cytokines:** A commercially-available, high-sensitivity Luminex assay kit (MilliporeSigma) was used to measure IL-1b, IL-8, and TNF-alpha.

Experimental Timeline

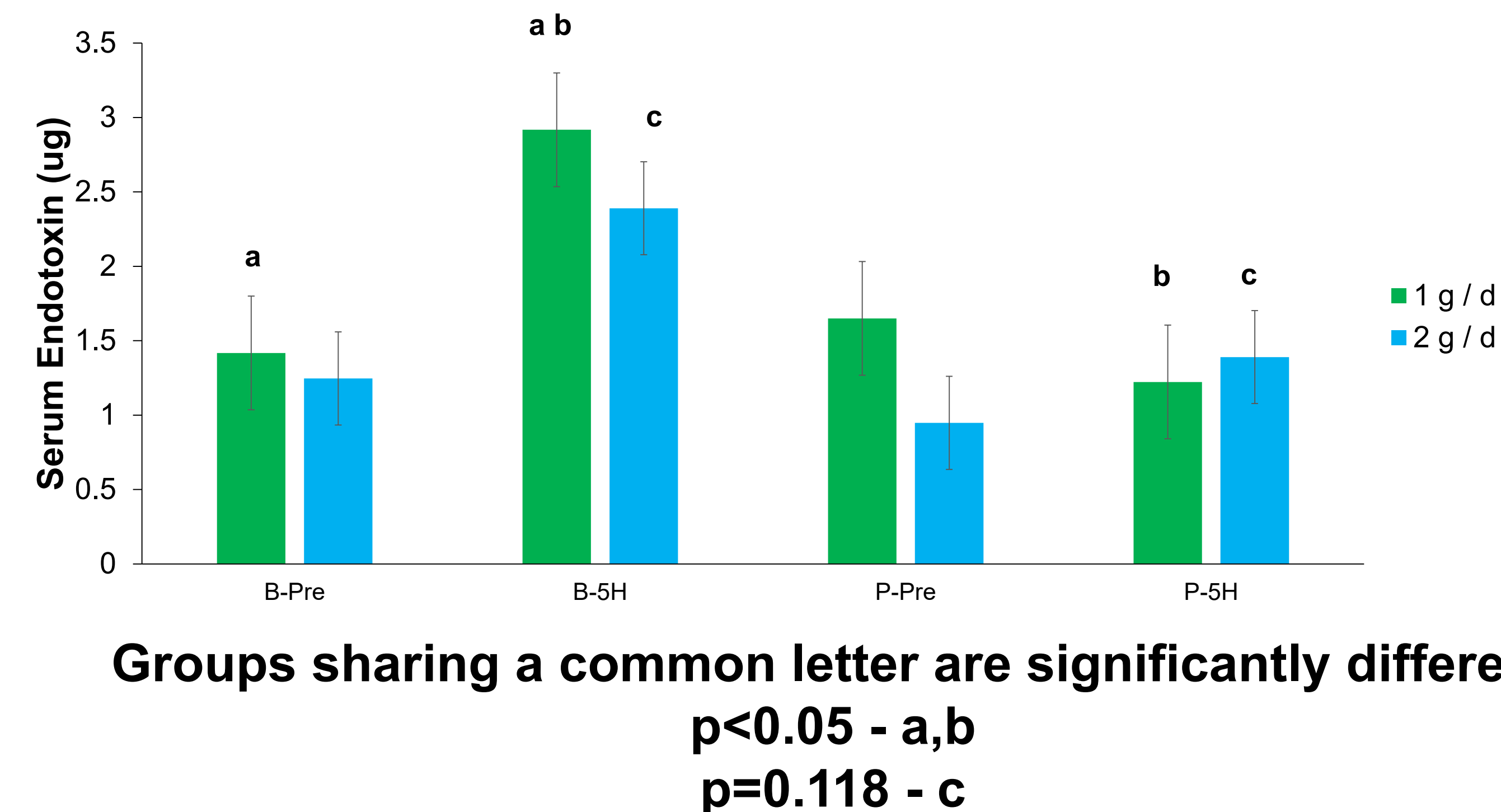


Dietary Endotoxemia

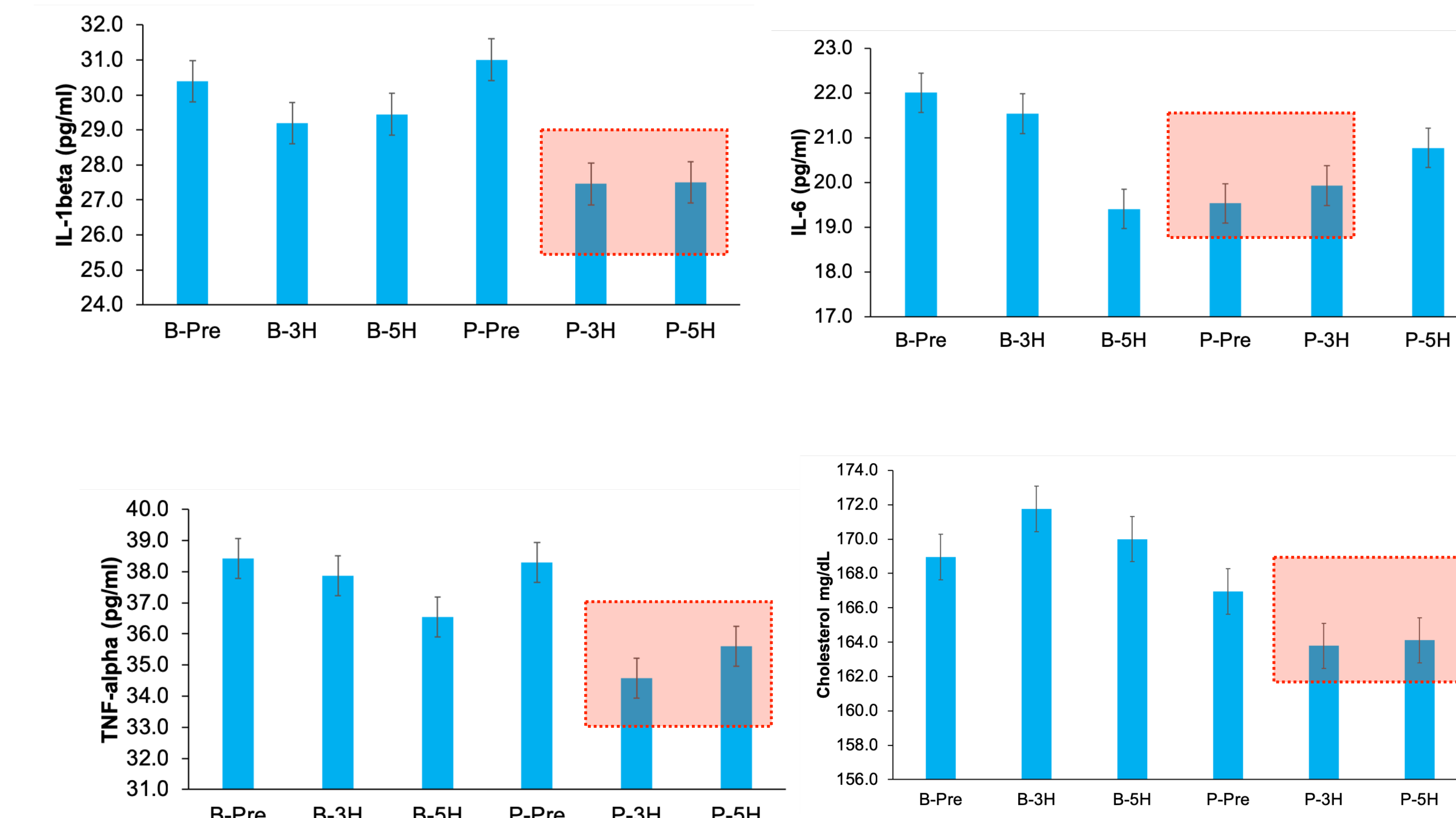


11 of 19 subjects were dietary endotoxin "responders"

Dose Efficacy – Dietary Endotoxemia



Serum Biomarkers



Trend toward reduction various time points following 45-d supplementation

Summary

- Regardless of dose, 45-d of ImmunoLin® significantly reduced dietary endotoxemia in responder subjects
- Low dose administration of ImmunoLin® were shown to improve dietary endotoxemia, 1 g/d (p<0.05), 2 g/d (p=0.118).
- Trends toward reduced post-prandial cholesterol and PI cytokines reflect additional disease/metabolic improvements.
- The trial shows good efficacy for lower doses of ImmunoLin® related to dietary endotoxemia

Acknowledgements

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