

A LOW FAT, HIGH FIBER DIETARY INTERVENTION LEADS TO CHANGES IN SERUM PROTEOMIC PATTERNS IN CROHN'S DISEASE PATIENTS COMPARED TO HOUSEHOLD CONTROLS

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An 8-week catered low-fat, high-fiber diet intervention in Crohn's disease patients led to decreased inflammatory proteins and altered pathways associated with immune function and mucosal healing.

KEY POINTS

- Ten Crohn's disease patients and matched healthy household controls received an identical catered low-fat, high-fiber diet for 8 weeks, with serum proteomics performed at baseline and post-intervention using the SOMAscan assay identifying approximately 7,500-8,000 proteins.
- At baseline, Crohn's disease patients had elevated pro-inflammatory proteins (serum amyloid A-1, C-reactive protein, fibrinogen, fibrinogen-like protein 1), immunomodulatory proteins (CLEC12A, IgA), and reduced transcobalamin-2 and alcohol dehydrogenase 1C compared to healthy controls.
- After 8 weeks, Crohn's disease patients showed marked decreases in C-reactive protein, fibrinogen, fibrinogen-like protein 1, and CLEC12A, with upregulation of alcohol dehydrogenase 1C and Rab proteins important for intestinal epithelial maintenance.
- Both Crohn's disease patients and healthy controls demonstrated significant downregulation of leptin and complement component 1Q subcomponent-binding protein, which impairs goblet cell formation in inflammatory bowel disease.
- Pathway analysis revealed enrichment in amino acid and fatty acid metabolism, endothelial cell development, and cellular response to DNA damage pathways; this study may be of interest to clinicians and researchers exploring non-pharmacologic dietary interventions for Crohn's disease management.

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