

Effects of Italian Mediterranean Organic Diet on Gut Microbiota: A Pilot Comparative Study

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Abstract:

The quality of food within the Mediterranean Diet may influence its health-promoting potential, yet the impact of organic versus conventional products on gut microbiota remains underexplored. This randomized, controlled pilot trial investigated whether an Italian Mediterranean Organic Diet (IMOD) confers additional microbiota benefits compared to a non-organic Mediterranean Diet (IMnOD) and a free diet (No Diet). Thirty-nine healthy adults were randomly assigned to one of three arms: IMOD, IMnOD, or No Diet, for four weeks. Microbiota composition was assessed by 16S rRNA sequencing, while anthropometric parameters and bioimpedance analysis were evaluated alongside dietary adherence questionnaires. Both IMOD and IMnOD significantly modulated gut microbiota relative to the No Diet group, enriching taxa associated with short-chain fatty acid production (e.g., *Anaerobutyricum hallii*, *Anaerostipes hadrus*, *Dorea longicatena*). Notably, *Parabacteroides distasonis* was specifically increased in the IMOD group, suggesting a potential role of organic foods in shaping distinct microbial trajectories. No significant changes in body composition were observed. These findings indicate that adherence to a Mediterranean diet beneficially reshapes gut microbiota, and that organic food sources may provide additional microbial advantages. Larger and longer studies are warranted to confirm these results.

keywords:

Mediterranean diet, organic food, gut microbiota, exposome, body composition.