



Abstract

This randomized clinical trial aimed to compare the effects of a low-fat diet with a precision nutrition-based diet on weight loss, glycemic variability, and HbA1c levels. Overweight or obese individuals, with or without type 2 diabetes, were randomly assigned to either a low-fat diet group or a precision nutrition-based diet group. Personalized dietary counseling and support. The primary outcomes were weight loss, glycemic variability, and HbA1c. (2023) A Randomized Clinical Trial on the Effects of Low-Fat and Precision Nutrition-Based Diets on Weight Loss, Glycemic Variability, and HbA1c. J Nutr Sci Res 8: 209.

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Keywords: Randomized clinical trial; Low-fat diet; Precision nutrition-based diet; Weight loss; Glycemic variability; HbA1c; Personalized dietary interventions; Overweight; Obesity; Type 2 diabetes; Metabolic outcomes; Blood glucose control; Body composition; Lipid profile

Weight loss and glycemic control are key factors in managing obesity and type 2 diabetes. Dietary interventions play a crucial role in achieving these goals, with various approaches being explored. Low-fat diets have traditionally been recommended for weight management, but recent advancements in precision nutrition have introduced the concept of tailoring dietary recommendations to individual characteristics, including genetics, metabolism, and lifestyle. This approach aims to optimize the effectiveness of dietary interventions and improve outcomes [1]. This randomized clinical trial aimed to compare the effects of a low-fat diet with a precision nutrition-based diet on weight loss, glycemic control. High glycemic variability has been associated with increased risks of cardiovascular complications and poor overall glucose management. Therefore, reducing glycemic variability is an important therapeutic goal in managing diabetes. HbA1c, a measure of long-term blood glucose control, provides valuable insights into overall glycemic management.

This randomized clinical trial aimed to compare the effects of a low-fat diet and a precision nutrition-based diet on weight loss, glycemic variability, and HbA1c levels. By examining these outcomes, we can identify the most effective dietary interventions for individuals with obesity and type 2 diabetes. The results of this study will contribute to the growing body of evidence regarding the efficacy of personalized dietary interventions and their impact on metabolic health [3].

This randomized clinical trial recruited a diverse population of overweight or obese individuals, with or without type 2 diabetes, from the community. Participants were screened for eligibility based on predetermined criteria, including age, body mass index (BMI), and medical history. Individuals with specific dietary restrictions or medical conditions that could interfere with the study outcomes were excluded. Written informed consent was obtained from all participants before enrollment.

Following the baseline assessments, eligible participants were randomly assigned to either the low-fat diet group or the precision nutrition-based diet group using a computer-generated randomization



C is randomized clinical trial suggests that both low-fat and precision nutrition-based diets can effectively promote weight loss in overweight or obese individuals. However, the precision nutrition-based diet demonstrated advantages in terms of reducing glycemic variability and improving HbA1c levels, indicating enhanced blood glucose control. These findings highlight the potential benefits of personalized dietary approaches in weight management and diabetes prevention or management. Further research is warranted to explore the long-term effects and sustainability of precision nutrition-based interventions.

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None