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SCIENTIFIC STUDIES

# EFFECTS OF TWENTY DAYS OF THE KETOGENIC DIET ON METABOLIC AND RESPIRATORY PARAMETERS IN HEALTHY SUBJECTS.

Rubini A, Bosco G, Lodi A, Cenci C, Parmagnani A, Grimaldi K, Zhongjin Y, Paoli A.
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## Introduction

Purpose The effects of the ketogenic diet (KD) on weight loss, metabolic, and respiratory parameters were investigated in healthy subjects.

## Materials and Methods

Thirty-two healthy subjects were randomized into two groups. The KD group followed a ketogenic diet for 20 days (KD t0–t20), then switched to a low-carbohydrate, no-ketogenic diet for 20 days (KD t20–t40), and finally was on a Mediterranean diet (MD) for 2 more months (KD t40–t2m). The MD group followed a MD for 20 days (MD t0–t20), then followed a MD of 1400 kcal over the next 20 days (MD t20–t40), and completed the study with the MD for 2 months (MD t40–t2m). Body weight, body fat, respiratory rate, and respiratory gas parameters (including respiratory exchange ratio (RER) and carbon dioxide end-tidal partial pressure (PETCO2), oxygen uptake (VO2), carbon dioxide production (VCO2), and resting energy expenditure (REE)) were measured at each point.

## Results

A significant decrease (p\0.05) in RER was observed after 20 and 40 days in the KD group, but not in the MD group. In the KD group, significant reductions were observed for both carbon dioxide output and PETCO2, however, there was no significant change in VO2, VCO2, and REE. While both diets significantly decreased body fat mass, the KD diet overall proved to have a higher percentage of fat loss versus the MD diet.

## Conclusions

The KD may significantly decrease carbon dioxide body stores, which may theoretically be beneficial for patients with increased carbon dioxide arterial partial pressure due to respiratory insufficiency or failure.