



Abstract

Effects of Chronic Supplementation with Nitrate-Rich Beetroot Juice on Cardiovascular Responses in Healthy Adults [†]

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Acute and short-term supplementation with nitrate-rich (NO_3^-) beetroot juice has been shown to improve cardiovascular health and function in healthy adults; however, there are few studies looking at the prolonged effects of dietary nitrate supplementation on cardiovascular responses. The purpose of this study was to investigate the effects of acute (day 1) versus prolonged (28 days) dietary nitrate supplementation on cardiovascular health and function in healthy adults.

Based on primary data from a larger study of 48 participants (24 per group). Nine healthy adults (44.4 ± 25.6 y) consumed 250 mL of nitrate-rich beetroot juice (BR; 10.5 mmol NO_3^-) and 7 (50.5 ± 17.9 y) consumed 250 mL of placebo solution (PL; 1 mmol NO_3^-) daily for a 28-day period, in a double blind, randomized control trial design. Blood pressure (BP), heart rate (HR), mean arterial pressure (MAP), and systemic vascular resistance (SVR) were measured before and 2.25 h post-consumption, on days 1 (acute), 14 and 28 (chronic) of supplementation.

Preliminary results have shown acute BR consumption reduced systolic ($p = 0.027$) and diastolic ($p = 0.008$) BP, and MAP ($p = 0.019$) compared to PL on day 1. There were no acute effects of BR supplementation on HR or SVR. On day 14 and day 28 the reduction in BP and MAP were maintained with BR supplementation; however, prolonged BR supplementation did not result in any further reductions in BP, MAP or SVR on days 14 and 28 when compared to day 1 ($p > 0.05$).

These preliminary results suggest that the acute benefits of BR consumption on CV function are maintained during prolonged consumption over a 28-day period.



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