Peripheral arterial disease (PAD) is the manifestation of atherosclerotic plaque in the larger arteries of the legs, which results in impaired blood flow to the lower extremities. Markers of vascular health, such as endothelial function and arterial stiffness, have been shown to be attenuated in patients with PAD. Endothelial dysfunction specifically has been shown to be associated with poor nitric oxide (NO) bioavailability. Nitrate (NO\textsubscript{3}\textsuperscript{-}), an NO-donor, has demonstrated beneficial effects on improving NO bioavailability and vascular parameters in patients with PAD. Previous studies have utilized unspecified doses of beetroot juice (high NO\textsubscript{3} content) for patients with PAD, therefore a standardized dose of beetroot juice has not yet been elucidated. Therefore, the effects of a body mass-normalized dose of NO\textsubscript{3} on vascular parameters in patients with PAD has been examined in this study.

**PURPOSE**

To examine the impacts of a NO\textsubscript{3} supplement, specifically a body-mass normalized dose of beetroot juice, on endothelial function, arterial stiffness, and central and peripheral blood pressure (BP) in patients with PAD. Hypothesis: it was hypothesized that acute intake of NO\textsubscript{3} would improve vascular function.

**METHODS**

- 2 patients with PAD (stage II-III, age around 73) had vascular measurements taken pre- and post-beetroot juice ingestion.
- Beetroot juice dosage was ~0.11 mmol NO\textsubscript{3}/kg body mass
- Height, mass, body composition, and grip strength were measured to determine participant characteristics.
- Vascular measurements including resting heart rate, peripheral BP, central BP, augmented pressure, deceleration time, endothelial function (flow-mediated dilation), and arterial stiffness (carotid-to-radial pulse wave velocity and augmentation index) were taken pre- and post-nitrate ingestion.

**RESULTS**

- Our preliminary findings suggest that acute intake of a NO\textsubscript{3} supplement normalized to body mass may potentially be a useful therapeutic treatment to improve endothelial function and both central and peripheral vascular function.
- However, this is a pilot study and investigation with a larger sample size is warranted.

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