

Nitrate supplementation and exercise tolerance in patients with type 2 diabetes

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Statistical analyses for the primary outcome measures reported are as follows:

1. Maximal Exercise Capacity

Group data were compared using mixed-model, two-way repeated measures analyses of variance with group (nitrate, placebo) and time (pre, post) effects. If significant F-ratios were detected, post hoc comparisons were made using Tukey's test.

2. Change in Skeletal Muscle Perfusion During Exercise

Two-way repeated measures analyses of variance compared outcome measures between groups (nitrate vs. placebo) and across time (pre-vs. post-supplementation). Tukey's post hoc analyses were used when significant F-ratios were detected.

3. Change in Skeletal Muscle Mitochondrial Function

For examination of potential benefits of nitrate supplementation, individual delta changes for each dependent variable were calculated for each group (i.e., placebo and nitrate supplementation). Then, an Analysis of Covariance (ANCOVA) was used to test differences for each dependent variable with pre-intervention values for that same variable as a covariate. This approach allowed the comparison of the main effects of the intervention while controlling for potential baseline differences between placebo and nitrate supplemented subjects that might have originated from random group assignments. Due to the lower number of subjects providing muscle biopsies, ANCOVA was generally underpowered in this subgroup and additional analyses (e.g., within group paired t test) were conducted to identify potential trends originating from the intervention. Chi-square tests were also used to compare the proportion of participants improving mitochondrial respiration or not under CHO- and FA-supported conditions among those in the nitrate supplementation and placebo groups.