

No effect of nitrate-rich beetroot juice on microvascular function and blood pressure in younger and older individuals: A randomised, placebo-controlled double-blind pilot study

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SUPPLEMENTARY MATERIAL

| | AGE (YEARS) | | STATURE (CM) | | BODY MASS (KG) | | BMI | | WC (CM) | | BODY FAT (%) | |
|---------------|--------------------|----------------|---------------------|----------------|-----------------------|----------------|-----------------|----------------|-----------------|----------------|---------------------|----------------|
| | Young | Old | Young | Old | Young | Old | Young | Old | Young | Old | Young | Old |
| | (n = 17) | (n = 7) | (n = 17) | (n = 7) | (n = 17) | (n = 7) | (n = 17) | (n = 7) | (n = 17) | (n = 7) | (n = 17) | (n = 7) |
| 95% CI | 22.4 | 59.2 | 164.4 | 158.9 | 58.9 | 57.6 | 21.3 | 22.0 | 74.8 | 81.8 | 13.0 | 12.4 |
| | 25.9 | 78.2 | 172.2 | 177.7 | 70.8 | 95.8 | 24.1 | 31.4 | 82.9 | 111.1 | 18.8 | 33.5 |
| 90% CI | 22.7 | 61.2 | 165.1 | 160.8 | 59.9 | 61.5 | 21.6 | 23.0 | 75.5 | 84.8 | 13.5 | 14.6 |
| | 25.6 | 76.3 | 171.6 | 175.8 | 69.8 | 91.9 | 23.4 | 30.4 | 82.2 | 108.1 | 18.3 | 31.3 |
| 85% CI | 22.9 | 62.3 | 165.5 | 161.9 | 60.6 | 63.4 | 21.7 | 23.5 | 76.0 | 86.5 | 13.8 | 15.8 |
| | 25.4 | 75.13 | 171.1 | 174.6 | 69.1 | 89.6 | 23.7 | 29.9 | 81.8 | 106.3 | 18.0 | 30.0 |
| 80% CI | 23.1 | 63.1 | 165.8 | 162.7 | 61.1 | 65.4 | 21.9 | 24.0 | 76.3 | 87.8 | 14.1 | 16.7 |
| | 25.3 | 74.3 | 170.8 | 173.8 | 68.6 | 87.9 | 23.6 | 29.5 | 81.4 | 105.1 | 17.7 | 29.1 |
| 75% CI | 23.2 | 63.8 | 166.1 | 163.4 | 61.5 | 66.7 | 22.0 | 24.3 | 76.6 | 88.8 | 14.3 | 17.4 |
| | 25.2 | 73.7 | 170.5 | 173.2 | 68.2 | 86.6 | 23.5 | 29.2 | 81.2 | 104.1 | 17.5 | 28.4 |

WC = Waist circumference.

Supplemental Table 1a. Baseline 75% - 95% confidence intervals for anthropometric data in Young (n = 17) vs. Old (n = 7) participants prior to administration of NO₃ supplementation. Confidence intervals calculated to reflect descriptive statistic emphasis recommendations for pilot studies²⁰, and supplement means and SD of the main manuscript.

| | SBP | | DBP * | | RHR* | |
|---------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|
| | Young (n = 17) | Old (n = 7) | Young (n = 17) | Old (n = 7) | Young (n = 17) | Old (n = 7) |
| 95% CI | 96.9 | 88.9 | 61.8 | 71.2 | 60.4 | 56.7 |
| | 116.8 | 141.4 | 71.7 | 91.4 | 75.3 | 135.3 |
| 90% CI | 98.6 | 94.3 | 62.7 | 73.3 | 61.7 | 64.8 |
| | 115.0 | 136.0 | 70.9 | 89.3 | 74.0 | 127.2 |
| 85% CI | 99.7 | 97.4 | 63.2 | 74.5 | 62.5 | 69.5 |
| | 113.9 | 132.9 | 70.3 | 88.1 | 73.2 | 122.5 |
| 80% CI | 23.1 | 63.1 | 165.8 | 162.7 | 63.1 | 63.0 |
| | 25.3 | 74.3 | 170.8 | 173.8 | 72.5 | 72.5 |
| 75% CI | 23.2 | 63.8 | 166.1 | 163.4 | 61.5 | 66.7 |
| | 25.2 | 73.7 | 170.5 | 173.2 | 68.2 | 86.6 |

SBP = Systolic blood pressure, **DBP** = Diastolic blood pressure, **RHR** = Resting heart rate.

Supplemental Table 1b. Baseline 75% - 95% confidence intervals for blood pressure in Young (n = 17) vs. Old (n = 7) participants prior to administration of NO₃ supplementation.

Confidence intervals calculated to reflect descriptive statistic emphasis recommendations for pilot studies²⁰, and supplement means and SD of the main manuscript.

| Young (n = 17) | | | | |
|-----------------------|-------|--------------|--------------|-------------|
| | | Δ SBP | Δ DBP | Δ HR |
| MIC | | 2.8 | 2.1 | 2.4 |
| 95% CI | Lower | -3.5 | -0.7 | -2.0 |
| | Upper | 2.0 | 3.5 | 2.8 |
| 90% CI | Lower | -3.0 | -0.3 | -1.6 |
| | Upper | 2.0 | 3.2 | 2.4 |
| 85% CI | Lower | -2.7 | -0.1 | -1.3 |
| | Upper | 1.3 | 2.9 | 2.1 |
| 80% CI | Lower | -2.5 | 0.1 | -1.1 |
| | Upper | 1.0 | 2.8 | 1.9 |
| 75% CI | Lower | -2.3 | 0.2 | -0.9 |
| | Upper | 0.8 | 2.6 | 1.8 |
| Old (n = 7) | | | | |
| | | Δ SBP | Δ DBP | Δ HR |
| MIC | | 10.6 | 5.3 | 6.1 |
| 95% CI | Lower | 10.7 | 6.3 | -12.4 |
| | Upper | 50.0 | 25.7 | 10.1 |
| 90% CI | Lower | 14.8 | 8.2 | -10.1 |
| | Upper | 46.0 | 23.7 | 7.8 |
| 85% CI | Lower | 17.1 | 9.4 | -8.8 |
| | Upper | 43.6 | 22.5 | 6.4 |
| 80% CI | Lower | 18.8 | 10.3 | -7.8 |
| | Upper | 41.9 | 21.7 | 5.5 |
| 75% CI | Lower | 20.2 | 10.9 | -7.0 |
| | Upper | 40.6 | 21.1 | 4.7 |

Supplemental Table 2. 75% - 95% confidence intervals and minimally important change for difference between placebo vs. nitrate blood pressure and heart rate in Young (n = 17) vs. Old (n = 7) participants.

Minimally Important Change (MIC) calculated via SEM.

Confidence intervals and MIC data for Δ SBP and DBP could indicate a clinically important treatment difference warranting further investigation via a further confirmatory trial²⁰, supplementing the inferential analyses of the main manuscript.

| Young (n = 17) | | | | | | | |
|----------------|-------|----------|----------|--------------|----------|----------|----------|
| | | Baseline | | Initial Peak | | Plateau | |
| | | Δ | Δ | Δ | Δ | Δ | Δ |
| | | Nitrate | Placebo | Nitrate | Placebo | Nitrate | Placebo |
| MIC | | 1.8 | 1.1 | 11.3 | 7.9 | 2.9 | 3.0 |
| 95% | Lower | -1.2 | 1.6 | -8.1 | 0.3 | -8.2 | -11.7 |
| CI | Upper | 6.4 | 6.2 | 40.5 | 34.7 | 4.5 | 1.4 |
| 90% | Lower | -0.5 | 2.0 | -3.8 | 3.5 | -7.1 | -10.5 |
| CI | Upper | 5.7 | 5.8 | 36.2 | 31.5 | 3.3 | 0.2 |
| 85% | Lower | -0.1 | 2.3 | -1.1 | 5.4 | -6.4 | -9.8 |
| CI | Upper | 5.3 | 5.6 | 33.5 | 29.6 | 2.6 | -0.5 |
| 80% | Lower | 0.2 | 2.5 | 1.0 | 6.8 | -5.8 | -9.3 |
| CI | Upper | 5.0 | 5.4 | 31.5 | 28.2 | 2.1 | -1.1 |
| 75% | Lower | 0.5 | 2.7 | 2.6 | 8.0 | -5.4 | -8.8 |
| CI | Upper | 4.7 | 5.2 | 29.8 | 27.0 | 1.7 | -1.5 |
| Old (n = 7) | | | | | | | |
| | | Baseline | | Initial Peak | | Plateau | |
| | | Δ | Δ | Δ | Δ | Δ | Δ |
| | | Nitrate | Placebo | Nitrate | Placebo | Nitrate | Placebo |
| MIC | | 2.2 | 2.5 | 10.5 | 15.5 | 3.0 | 2.5 |
| 95% | Lower | 0.3 | -7.0 | -17.4 | -38.9 | -10.2 | -7.6 |
| CI | Upper | 11.8 | 5.0 | 36.8 | 36.8 | 5.4 | 4.6 |
| 90% | Lower | 1.6 | -5.8 | -11.5 | -31.1 | -8.5 | -6.3 |
| CI | Upper | 10.6 | 3.8 | 31.0 | 29.0 | 3.7 | 3.4 |
| 85% | Lower | 2.3 | -5.1 | -8.2 | -26.6 | -7.6 | -5.6 |
| CI | Upper | 9.9 | 3.0 | 27.6 | 24.5 | 2.7 | 2.6 |
| 80% | Lower | 2.8 | -4.6 | -5.9 | -23.3 | -6.9 | -5.1 |
| CI | Upper | 9.4 | 2.5 | 25.3 | 21.2 | 2.1 | 2.1 |
| 75% | Lower | 3.2 | -4.2 | -4.0 | -20.7 | -6.3 | -4.7 |
| CI | Upper | 9.0 | 2.1 | 23.4 | 18.7 | 1.5 | 1.7 |

Supplementary Table 3. 75% - 95% confidence intervals and minimally important change for skin blood flow in Young (n = 17) vs. Old (n = 7) participants.

Confidence intervals and MIC for Δ Nitrate and Δ Placebo could indicate a clinically important treatment difference for Baseline CVC in Old participants²⁰ and supplement the inferential analyses of the main manuscript.