Twelve elite middle and long-distance runners (age = 26.3 ± 5.1yrs, VO2Max = 71.8±5.2 ml*kg⁻¹*min⁻¹) completed an incremental running test to exhaustion on a treadmill before and after a 15-days supplementation period, in which half of the group (EG) consumed a daily nitrate-rich beetroot juice and the other group. No other physiological or biomechanical variable showed substantial improvements after the supplementation period. Conclusions. Fifteen days of nitrate-rich beetroot juice supplementation produced substantial improvements in the time to exhaustion in elite runners; however, it didn't produce meaningful improvements in running economy, VO2Max or mechanical parameters.