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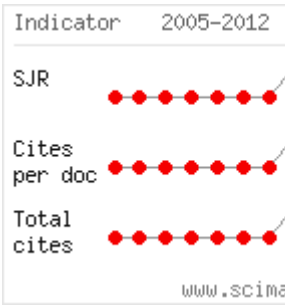




# Sodium citrate ingestion increases glycolytic activity but does not enhance 2000 m rowing performance

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## Abstract

Sodium citrate-induced alkalosis is an ergogenic strategy that has been proven to enhance physical performance in high-intensity exercises by increasing muscle buffer capacity and reducing the influence of $H^+$ on energy production and contractile processes. The objective of the present study was to evaluate whether acute sodium citrate ingestion may contribute to rowing performance in a 2000-m race simulation. Six well-trained

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competitive rowers took part in the study, but five of them have completed the whole experimental protocol. They were assessed twice for performance and lactate 2.5 h after the ingestion of a 750-mL natural mango juice containing sodium citrate (0.5 g · $kg^{-1}$) or no substance added (placebo). The two experiments occurred 7-15 days apart. The study was conducted in a double-blind, placebo-controlled, cross-over fashion. Performance was assessed in a rower ergometer and blood lactate was determined in both conditions at rest and after exercise. Heart-rate and oxygen consumption were monitored throughout the tests. Data were analyzed using the Wilcoxon's signed rank test. Sodium citrate yielded a significantly higher lactate response to exercise than placebo ($p < 0.05$), but no significant differences were found between treatments for performance, heart-rate and oxygen consumption. In conclusion, sodium citrate promoted a favorable metabolic environment for exercise performance but did not exert any influence on simulated rowing performance.

Key words: sodium citrate; alkalosis; acid-base; fatigue; rowing; performance

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