

## The effect of Sustamine supplementation on performance and hydration of endurance cyclists

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### ABSTRACT:

This study aimed to investigate the effect of Sustamine supplementation on performance and metabolic parameters of young endurance cyclists in dehydration conditions. Road cycling is an endurance activity in which cyclists experience fatigue during long workouts and races, which causes changes in the physiological parameters of athletes. One of the causes of this fatigue is dehydration. Sustamine is a supplement with a dipeptide of the two amino acids L-glutamine and L-alanine. According to the history of taking sustamine supplement, we found that taking this supplement is effective in hydration and improvement in athletic performance. The considered variables were Maximum oxygen consumption (VO<sub>2</sub>max), Minute ventilation (VE), Electrolyte (sodium) level, Maximum heart rate, Rating of Perceived exertion (RPE), and Peak output power. Our sample number was 8 young boy cyclists in the age group of 18 to 20 years. this research was performed in 2 stages. First, the samples were sampled from their urine at rest and performed the dehydration protocol, which was to walk on a treadmill to reach dehydration, and a second urine sample was taken and they took 3 grams sustamine supplement with 500ml of water. After 40 minutes of rest, the 5 km cycling protocol was performed with a cycle ergometer (Monark 839) and the desired data was recorded from the cycle ergometer and gas analyzer device, and the third urine sample was taken. were compared using a two-way repeated-measures ANOVA. Sustamine supplementation had no significant effect on maximal oxygen consumption (VO<sub>2</sub>max)(p=0.663) and minimum ventilation (VE)(p=0.883). And showed a positive effect on the amount of electrolyte (sodium) in comparison with the placebo phase(p=0.000). At maximal heart rate (MHR), a decrease in maximal heart rate was observed in the sustamine supplementation phase(p=0.0001); In the sustamine supplement phase, the perceived effects (RPE) decreased compared to the placebo phase(p=0.000) and in the sustamine supplement phase, the peak production capacity increased compared to the placebo phase(p=0.000). taking 3 grams of sustamine supplement in 500 ml of water showed that after 40 minutes, it causes hydration, and this hydration also had a positive effect on improving the endurance performance of cyclists.

**KEY WORDS:** Sustamine, Cyclists, Performance, Hydration, Endurance activity

### Reference:

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