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Effects of acute modafinil ingestion on exercise time to exhaustion.

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**PURPOSE:**

The purpose of this study was to investigate the effect of acute ingestion of modafinil (M) on time to exhaustion during high-intensity exercise. Modafinil (M) is a psychostimulant developed to treat narcolepsy, with "arousal" properties attributed to an increased release of dopamine in the CNS. Because other stimulants with similar properties have ergogenic effects, it was hypothesized that acute treatment with M would enhance physical performance.

**METHODS:**

Fifteen healthy male subjects, with a maximal aerobic power (VO<sub>2</sub>max) of 47 +/- SD 8 mL x kg x min, exercised on a cycle ergometer for 5 min at 50% VO<sub>2</sub>max and then at approximately 85% VO<sub>2</sub>max to exhaustion. They did this weekly for 3 wk: a control trial (C) the first week, and then 3 h after ingesting either placebo (P) or M (4 mg x kg) during the remaining 2 wk. The P and M trials were conducted with a balanced order, double-blind design.

**RESULTS:**

Mean +/- SD times to exhaustion at 85% VO<sub>2</sub>max (TE) were 14.3 +/- 2.8, 15.6 +/- 3.8 and 18.3 +/- 3.5 min for the C, P, and M trials, respectively. TE for M was significantly longer than for the C and P trials. Oxygen uptake at exhaustion was slightly but significantly greater for M compared with P and C. HR increased with time and was further elevated by M. Subjective ratings of perceived exertion (RPE) were significantly lower for M compared with C and P but only after 10 min of exercise at 85% VO<sub>2</sub>max.

**CONCLUSION:**

Acute ingestion of modafinil prolonged exercise time to exhaustion at 85% VO<sub>2</sub>max and reduced RPE. The RPE results suggest that the dampening of the sensation of fatigue was likely a factor responsible for the enhanced performance.

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