Ammonia and Anaerobic Power

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Introduction: The use of nutritional supplements and other potential ergogenic aids is of high interest in sports, where a slight performance edge can be the difference between winning and losing. Ammonia inhalants (AI), which are sometimes used clinically to revive people who are unconscious, have also been used in an attempt to improve sports performance. However, existing research does not differentiate between physiological and psychological effects of AI. This study's purpose is to evaluate both the psychological and physiological effects of AI on anaerobic power. The results from the study will allow people who use these supplements to know if they are benefiting the user physically or if it is just a placebo. **Methods**: Participants, who are Division III athletes, will perform identical exercise protocols on each of the two sessions, spaced a week apart. In one session (intervention) they will inhale ammonia carbonate two seconds prior to performing a 30-second Wingate test; in the other session (control) they will not inhale anything before the Wingate test. Session order will be randomized across participants. In each session, participants will complete a questionnaire asking about perceived effects of AI on performance. The subject will then be weighed and fitted to the Monark 894E cycle. After a warm up on the unweighted cycle, subjects will pedal as quickly as possible until 150 RPM, at which time a resistance equivalent to 7.5% of the subject's body weight will be added. The subject will continue pedaling as fast as possible for 30 seconds. Once the test is completed, the resistance will be removed and subjects will complete a cool-down. Peak power, mean power, and fatigue index from the Wingate test will be calculated and compared between intervention and control conditions. **Conclusion**: By examining the power output following use of AI compared to the control and documenting subject perceptions of AI use, we hope to shed light on the physiological and psychological impacts that AI might bring to a sport that requires a maximal power output.