### Methods (cont’d)

- The participant began the 30 second Wingate test. Upon completion, the participant would wait 4 minutes, and then perform a second Wingate test. The Wingate was repeated to increase blood lactate levels to more perceivable levels.
- During the 4 minute break, participants rested on a chair without moving their legs as to not actively remove lactate.
- After the second Wingate test, blood lactate levels were taken at 5 minutes and 20 minutes post-exercise while the participant sat still without moving their legs.
- On the second study day, the participants received the opposite drink, and performed the same pattern of testing.
- After data from all participants on both days were collected, t-tests were performed to look for significance between the two drinks and their rate of blood lactate removal.

### Results (cont’d)

- t-test results showed that there was no significant difference ($p = 0.243$).
- Other variables tested included peak power (Arginine: $749.1 \pm 84.7$ watt; Placebo: $729.2 \pm 76.4$ watt), peak power / body mass (Arginine: $8.97 \pm 0.98$ watt/kg; Placebo: $8.83 \pm 1.42$ watt/kg), mean power / body mass (Arginine: $588.4 \pm 60.18$ watt; Placebo: $555.43 \pm 50.90$ watt), and mean power / body mass (Arginine: $7.08 \pm 0.60$ watt/kg; Placebo: $6.73 \pm 0.81$ watt/kg).
-Performed t-tests showed that these findings did not qualify as significantly different, either ($p > 0.05$).

### Conclusions

Our analyses indicated that while there was an observable decrease of blood lactate levels with Arginine supplementation, the decrease was not statistically significant. Furthermore, variables such as peak power and mean power differed between supplementation, but not to significant levels.

---

**Abstract**

To determine if arginine supplementation has an effect on blood lactate removal following bouts of anaerobic exercise.

**Purpose**

5 male UTA students were recruited for this study. There were two days of testing, with 48-72 hours between testing days.

**Methods**

- On the first day of testing, initial demographic measurements were taken (height, weight, age, BMI). After demographic variables were recorded, the subject’s resting blood lactate was measured.
- Immediately following the blood lactate measurement, the subject was given either an arginine mixture or placebo drink. Each drink was saturated with a flavor additive, specifically Mio Liquid Water Enhancer, so that both the placebo and arginine mixture taste similar.
- After ingesting either the mixture or placebo, participants waited 20 minutes to allow absorption. After absorption, another blood lactate measurement was taken before exercise. After the second blood lactate measurement, the participant would sit on a bicycle for a Wingate test.

**Results**

- At the 5-minute post-Wingate mark, blood lactate levels had very little variation, with the Arginine group averaging 13.94 mmol/L, and the placebo group averaging 13.06 mmol/L. However, at the 20-minute post-Wingate mark, blood lactate levels with the Arginine group had dropped to an average of 11.56 mmol/L, while the placebo group levels continued hovering around 14.24 mmol/L.

**Conclusion**

Our calculations indicated that while there were observed differences of blood lactate levels with Arginine supplementation, the decrease was not statistically significant. Furthermore, variables such as peak power and mean power differed between supplementation, but not to significant levels.

**Authors**: Robert Loflin, Nathan McEwen, KINE 4400

**Sponsor**: Judy R. Wilson, Ph.D.

Cardiovascular Research Laboratory, The University of Texas at Arlington, Arlington, TX.