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### Effect of Light Brightness on Cycling Performance

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Many spin classes are conducted in dark rooms in gyms. **PURPOSE:** To investigate if light brightness impacts cycling performance or perception of effort. **METHODS:** Six men (age:  $21.5 \pm 0.8$  yr; height:  $176.4 \pm 6.5$  cm; mass:  $87.0 \pm 7.6$  kg; body fat:  $14.6 \pm 4.7\%$ ) and five women (age:  $21.0 \pm 1.2$  yr; height:  $165.1 \pm 4.8$  cm; mass:  $69.1 \pm 20.2$  kg; body fat:  $25.9 \pm 11.6\%$ ) completed a maximal workload test and three light brightness trials on a cycle ergometer. During session one, subjects completed a graded exercise test to volitional fatigue to determine maximal workload. Using their preferred pedaling cadence (RPM) and a standard exercise intensity (70% of their maximum workload), a distance goal was calculated for each subject. On separate days, subjects were instructed to complete their distance goal as quickly as possible under three light brightness conditions: dim (D; 5 luxes), ambient (A; 200 luxes), and bright (B; 750 luxes). The testing order of the light brightness trials was determined by counterbalanced assignment. Heart rate (HR), Ratings of Perceived Exertion (overall = RPE-O; peripheral = RPE-P), and blood lactate were measured during the exercise trials for statistical comparison. Repeated Measures ANOVAs were used to determine differences between the different light brightness conditions. **RESULTS:** There was no significant difference in completion time (D:  $30.4 \pm 3.2$ , A:  $28.2 \pm 9.6$ , B:  $30.8 \pm 3.9$  min;  $p = .386$ ), HR (D:  $157.0 \pm 12.1$ , A:  $155.0 \pm 13.4$ , B:  $155.4 \pm 10.8$  b $\cdot$ min<sup>-1</sup>;  $p = .845$ ), average RPE-O (D:  $13.5 \pm 2.1$ , A:  $13.7 \pm 2.0$ , B:  $14.0 \pm 1.3$ ;  $p = .618$ ), average RPE-P (D:  $14.6 \pm 1.9$ , A:  $14.7 \pm 2.0$ , B:  $14.8 \pm 1.1$ ;  $p = .690$ ) or average blood lactate (D:  $5.8 \pm 1.5$ , A:  $6.1 \pm 2.2$ , B:  $6.2 \pm 2.9$  mmol $\cdot$ L<sup>-1</sup>;  $p = .913$ ) between the light brightness conditions. **CONCLUSION:** Variations in light brightness had no impact on cycling performance or perception of effort.

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