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The Physiological & Performance Effects of Different Tempos of Music during Exercise

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Music is commonly perceived to enhance exercise performance. Music tempo may also influence exercise performance. **PURPOSE:** To evaluate the effects of music tempo on exercise performance, blood pressure (BP), heart rate (HR), blood lactate, and rate of perceived exertion (RPE) during leg ergometry exercise. **METHODS:** Twelve male and female individuals between the ages of 18 to 23 years were asked to participate in a 4-week study. The subjects were given a Health History Questionnaire to assess their health. Prior to the exercise, the subjects had their resting HR, BP, and blood lactate level measured. After a 3-minute warm-up on the Monark 828e Ergometer with no load, subjects pedaled at a specified resistance ($k_p = 1.5\%$ of body mass). Subjects performed at 10-min cycle session for each of three tempo conditions: slow (S), medium (M), fast (F); and a no music control trial (C). The tempo of the music was randomly assigned for each trial. Subjects were instructed to maintain a minimum of 50 rpm for each trial. Upon completion of each cycle test, the subjects' HR, BP, RPE and distance traveled were recorded. A One-Way Analysis of Variance was used to compare the differences in the measures under four different conditions. **RESULTS:** As expected, there were differences in pre- and post-exercise systolic BP (131.28 ± 14.07 vs. 138.38 ± 14.22 mmHg) and blood lactate levels (5.55 ± 4.78 vs. 7.63 ± 4.28 mmol/L), although these differences were not statistically significant. When comparing music conditions, there were no significant differences in HR (S = 108.7 ± 20.2 ; M = 114.9 ± 15.2 ; F = 118.1 ± 26.3 ; C = 123 ± 14.2 BPM), diastolic BP (S = 72.2 ± 16.7 ; M = 74.2 ± 8.6 ; F = 78.9 ± 15.1 ; C = 82.6 ± 19.2 mmHg), or RPE (S = 10.9 ± 1.7 ; M = 10.4 ± 1.3 ; F = 10.4 ± 1.5 ; C = 11.4 ± 1.8). There were no differences in distance covered based on tempo: $4.83 \pm .48$ km for C; $4.82 \pm .20$ km for F; while the M and S conditions covered $4.56 \pm .48$ km and $4.62 \pm .23$ km, respectively. **CONCLUSIONS:** When looking to maximize exercise performance, fast-paced music seems to yield more of a benefit than medium or slow-paced music. However, no music at all yields the same amount of benefit in exercise performance as fast-paced music. **SIGNIFICANCE/NOVELTY:** Anyone who wants to accomplish the most production from their exercise session may benefit from this study. While the differences were not significant, the fast tempo and control condition did travel about 5% farther than the slower tempos. Had the exercise been longer or more difficult, more substantial differences may occur.