

Effects of Motivational Music on Post-Exercise Recovery

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ABSTRACT

Previous literature suggests “motivational” music has a tempo between 120-140 bpm to elicit positive responses to exercise performance. While music that is considered “motivational” has been known to elicit a positive response during exercise performance, it’s impact on exercise recovery has not been determined. **PURPOSE:** To examine responses of physiological variables to motivational music during the exercise recovery period. Hypothesis: calm music, or no music would allow the participants to recover more quickly during the excess post-exercise oxygen consumption (EPOC) period. **METHODS:** This study consisted of 10 healthy, college-aged (19-25 years) individuals (6 M, 4F). Participants performed the Bruce treadmill exercise test to volitional fatigue to determine their aerobic fitness level (VO_{2peak}) (2.97 ± 0.97 L/min). At each stage of exercise, heart rate (HR), blood pressure (BP), and blood lactate via finger stick were collected. Participants then completed three additional exercise sessions for 20 minutes at 70% VO_{2peak} . During these trials, participants listened to motivational music selected from songs rated using the Music Brunel Rating Inventory which is a validated survey tool to determine if a song is motivational. Calming music was selected from a list of songs with a slower tempo from a posted report of “calming” songs. Blood lactate, BP, and HR were collected at the 10 and 20 minute mark during exercise, as well as at immediate post-exercise (IPE), 7, and 15 minutes into recovery. During recovery, all participants completed all three trials and listened to either motivational (MM), calming (CM), or no music (NM) while sitting. Each condition was randomly assigned. **RESULTS:** No significant differences between trials were observed for any measured time point during the EPOC: Oxygen consumption (VO_2): IPE (MM: 0.7 ± 0.2 ; CM: 0.6 ± 0.2 ; NM: 0.7 ± 0.2 L/min), 7 min post-exercise (MM: 0.7 ± 1.2 ; CM: 0.4 ± 0.1 ; NM: 0.4 ± 0.1 L/min), or 15 min post-exercise (MM: 0.3 ± 0.1 ; CM: 0.3 ± 0.1 ; NM: 0.3 ± 0.1 L/min). Ventilation (VE): IPE (MM: 19.94 ± 3.76 ; CM: 19.10 ± 5.55 ; NM: 20.18 ± 6.06 L/min), 7 min post-exercise (MM: 9.61 ± 2.48 ; CM: 10.25 ± 2.17 ; NM: 11.48 ± 4.03 L/min), or 15 min post-exercise (MM: 7.17 ± 1.82 ; CM: 8.63 ± 2.57 ; NM: 9.89 ± 4.33 L/min). Respiratory exchange ratio (RER): IPE (MM: 1.13 ± 0.07 ; CM: 1.14 ± 0.05 ; NM: 1.13 ± 0.11), 7 min post-exercise (MM: 0.95 ± 0.06 ; CM: 1.02 ± 0.14 ; NM: 0.97 ± 0.12), or 15 min post-exercise (MM: 0.90 ± 0.11 ; CM: 0.83 ± 0.05 ; NM: 0.85 ± 0.07). Lactate: IPE (MM: 4.7 ± 2.6 ; CM: 4.5 ± 2.1 ; NM: 4.2 ± 2.3 mmol/L), 7 min post-exercise (MM: 3.1 ± 1.6 ; CM: 3.1 ± 2.0 ; NM: 3.0 ± 1.6 mmol/L), or 15 min post-exercise (MM: 2.0 ± 1.1 ; CM: 2.1 ± 1.1 ; NM: 2.1 ± 0.94 mmol/L). Heart Rate (HR): IPE (MM: 146 ± 13 ; CM: 135 ± 14 ; NM: 136 ± 12 bpm), 7 min post-exercise (MM: 100 ± 8 ; CM: 100 ± 8 ; NM: 98 ± 9 bpm), or 15 min post-exercise (MM: 91 ± 8 ; CM: 91 ± 9 ; NM: 92 ± 8 bpm). **CONCLUSION:** These findings conflict with our research hypothesis that calm music, or no music would allow the participants to recover more quickly during the EPOC. No significant differences were found between music trials for any physiological variable associated with recovery during the EPOC.