

## Effect of Acute Exercise Mode on Test Anxiety: Aerobic vs. Resistance

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### ABSTRACT

Test anxiety is a specific type of state anxiety when a person experiences perceived pressure to excel on a test. Test anxiety not only hinders test performance, but the person's long term psychophysiological health. Many students struggle with test anxiety, but females have a higher incidence of test anxiety than males. Bouts of aerobic exercise have been shown to decrease state anxiety, but no work has been done examining the effects of resistant training on state anxiety. **PURPOSE:** the purpose of this study was to compare the effects of acute aerobic and resistance exercise bouts on test anxiety among recreationally active females. **METHODS:** Recreationally females ( $n=30$ ,  $23\pm 4$  yr.,  $79\pm 15$  kg,  $161\pm 7$  cm) participated in three experimental trials [bout of aerobic exercise (AER), bout of resistance exercise (RES); and a control bout with no exercise (CON)] where a balanced cross-over design was used. During the exercise bouts the subjects were required to exercise at a moderate intensity equal to 40%-59% of their peak oxygen consumption rate, which was determined relative to the subject's age predicted maximal heart rate (65-75% HRmax). Subjects were asked to perform the exercise bout in their target heart rate range (65-75% HRmax) for approximately 20 min. For the CON trial, the subject rested quietly for 20 min. After each bout, the subjects were required to take a standardized mathematics examination where they were told that they would be classified based on how they performed (good, average, poor). At the beginning, middle, and end of the standardized math exam perceived test anxiety (emotionality, worry, overall) was assessed via the Spielberg's Test Anxiety Inventory (TAI). TAI scores were not different between the three administrations ( $p>0.05$ ), so the middle assessment was used for the subsequent analyses. **RESULTS:** The exercise heart rates (Mn  $\pm$  SD) did not differ ( $p>0.05$ ) between exercise trials at 10 min (AER=  $133.6 \pm 3.8$  bpm; RES= $133 \pm 4.1$  bpm) and 20 min (AER= $133.5 \pm 3.3$  bpm; RES= $134.3 \pm 3.5$  bpm), confirming that subjects were in a steady state and that exercise intensities were similar between the modes. Perceived emotionality (TAI score=8-32) was not different ( $p>0.05$ ) between trials (Md, Range: CON=18,8-31; AER=19,8-32; RES= 18,8-32). Perceived worry (TAI score= 8-32) was not different ( $p>0.05$ ) between trials (Md, Range: CON=16, 8-32); AER=18, 8-32; RES=17, 9-32). Overall anxiety scores (TAI score=20-78) was not different ( $p>0.05$ ) between trials (Md, Range: CON=46, 20-78); AER=49, 20-75; RES= 46, 24-73). **CONCLUSION:** Acute exercise had no effect on test anxiety in the recreationally active young females who participated in the study, regardless of mode. It is possible that the test administration in the study did not effectively simulate the anxiety-inducing effects of a test in a real-world setting.