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### Acute Effects of Exercise Time on Mood and Stress

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Exercise has been shown to reduce stress and improve mood. The time at which exercise is performed during the day may enhance these benefits and could be useful for university students to know because of the stress that college often causes. **PURPOSE:** To examine the best time of day for college students to exercise in order to reduce stress and improve their mood.

**METHODS:** Ten male and female college students, 18 years of age and older, who exercise regularly volunteered to participate in the study. After completing a baseline survey, participants completed the Stress Scale and the International Positive and Negative Affect Schedule Short Form (PANAS) 5 minutes before and after each exercise session. Subjects also used the Borg Scale 5 minutes after the exercise to determine their rating of perceived exertion (RPE). The exercise completed during each session included a 5-minute warm-up, 20-minute jog, and 5-minute cool-down. Exercise sessions were completed once in the morning between 5 and 9 am and once in the evening between 5 and 9 pm. These two sessions were completed on different weeks, but on the same day of the week within a 4-week time period. Dependent t-tests were used to evaluate the differences in stress and mood with time. **RESULTS:** The results indicated that stress level in the morning, prior to the workout, was higher than in the evening, although the difference was not statistically significant (5.6 vs. 5.3,  $p>0.05$ ). After the workout, the reduction of stress was greater in the morning when compared to the evening, although the difference was not statistically significant (5.6 to 4.9 vs. 5.3 to 4.9,  $p>0.05$ ). Moreover, after the morning workouts, all the emotions of the participants, measured by PANAS, changed in a positive manner, whereas after the evening workouts, some of the participants' emotions changed in a negative manner. Notably, ratings of alertness and activity decreased by almost 20%. Additionally, RPE was higher during the evening workout when compared to the morning workout (13.1 vs. 10.7,  $p=0.06$ ). **CONCLUSION:** College students who exercise in the morning may experience a modest acute stress reduction and mood improvement compared to students who exercise in the evening.