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Effects of Submaximal Intensity Rowing vs Cycling on Cognitive Performance

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PURPOSE: The purpose of the present study was to compare cognitive performance resulting from submaximal bouts of rowing and cycling in college-aged subjects. **METHODS:** Nineteen (10 female, 9 male) physically active college-aged students (20.4 ± 1.5 years) participated in three laboratory sessions. Maximal aerobic capacity (VO_{2max} ; 39.1 ± 9.3 ml/kg/min) was recorded using the Astrand Maximal Cycling Protocol during a familiarization session to determine subsequent submaximal experimental intensity. Experimental sessions included pre- and post-exercise cognitive tests and a 20-minute bout of moderate intensity exercise at 40-60% (15.9 ± 3.7 - 23.9 ± 5.5 ml/kg/min) of subjects' VO_{2max} on a cycling and rowing ergometer. Heart rate (HR), Rating of Perceived Exertion (RPE), Oxygen Consumption (VO_2) and power output (watts) were recorded throughout the exercise sessions to ensure participants maintained the appropriate prescribed intensity. **RESULTS:** Results indicated no significant difference between rowing and cycling protocols. With each modality, post-exercise elicited significant improvement compared to pre-exercise in Switching MRT ($p < 0.01$) and SCW MRT ($p < 0.01$), Switching Correct ($p < 0.01$) and SWC Correct ($p < 0.01$), and SCW Interference Score ($p = 0.028$). **CONCLUSION:** These results show that moderate intensity exercise is effective in improving acute cognitive function. Rowing, a non-traditional exercise modality, can be used equally as effectively as more traditional exercise modalities like cycling in order to improve acute cognitive function.