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This study addressed the role of the musical constituent of lyrics with reference to a range of psychophysiological variables during submaximal cycle ergometry. In a two-factor repeated measures design, participants (N = 25; 20.88 ± 1.42 years of age) performed three 6-min cycling trials at 75% HR max under conditions of music with lyrics (ML), music without lyrics (NL), and a no-music control (NM). Cadence (revolutions per minute; RPM), heart rate (HR) and perceived exertion (RPE) measures were taken at 2-min intervals during each trial. Positive (PA) and negative (NA) affect was assessed before and after each trial. An interaction effect (p < 0.05) emerged for RPM which showed that participants cycled at a higher cadence under ML and NL conditions when compared to NM at minutes 2, 4, and 6. No interaction effects (p > 0.05) were found for HR, RPE, PA, and NA, although there was a significant main effect (p < 0.05) across time points for each of these variables. Specifically, HR and RPE increased from minutes 2 through to 6, while PA increased and NA decreased from pre- to post-trials. Findings showed that music increased participants’ cadence during cycling although RPM and HR did not differ across conditions. This indicates that musical accompaniment may elicit enhanced efficiency, as participants pedalled faster while listening to music. No differences in cadence were found between the two music conditions, although the track played with lyrics was rated as being significantly more motivating than the same track without lyrics.

Effects of relaxing and arousing music on imagery for dart throwing.

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The purpose of this study was to examine the effect of relaxing and arousing music during imagery rehearsal on dart-throwing performance. Forty-five volunteer sports science students with intermediate imagery ability, as measured by the Sport Imagery Ability Measure, were matched into three groups: 1) Unfamiliar relaxing music with imagery; 2) Unfamiliar arousing music with imagery; and 3) no music with imagery (control). Unfamiliar music was chosen to minimize the potential confound of past associations. A pre-test-intervention post-test design study was conducted, involving dart throwing at a concentric circles dartboard. To measure state anxiety the CSAI-2R and Sport grid-R were administered before the 40-trial dart-throwing performance pre-test. Participants completed 12 sessions of imagery of accurate dart-throwing, then the CSAI-2R and Sport grid-R were re-administered in session 12 followed by the 40-trial performance post-test. In sessions 1 and 12, HR, GSR, and peripheral temperature were measured. ANOVA revealed a significant main effect for music (F = 3.25, p < .05, ?2 =.134). A significant interaction effect was observed for dart-throwing performance across the music conditions (F = 12.0, p < .05, ?2 =.36). Paired t tests in each music condition revealed that there was a significant improvement of performance in the relaxing music (p < .05) and arousing music groups (p < .05), but not in the no-music control group (p > .05). In conclusion, relaxing and arousing music both showed improvements in dart throwing performance, although unfamiliar relaxing classical music showed a larger performance increase in this fine motor skill. Self-report and psychophysiological measures of anxiety and arousal showed changes that were consistent with those expected for relaxing and arousing music.

Ergogenic, psychological, and psychophysiological effects of synchronous music on treadmill running.

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Music has been shown to exert various ergogenic (i.e., work-enhancing), psychological (e.g., improved mood), and psychophysical (i.e., lowered perceptions of exertion) benefits during physical activity. When movements are performed in synchrony with music, some of the benefits (e.g., work-enhancement) appear to be amplified.
(see e.g., Karageorghis, Mouzourides, Priest, Sasso, Morrish, & Whalley, 2009). To further develop the train of research on synchronous music and to extend it to elite athletes, the present study utilised a sample of Australian triathletes (N = 11) who were exposed to either self-selected motivational music, a neutral equivalent (in terms of its motivational qualities), or a no-music control during steady-state and exhaustive treadmill running. The measured variables were work output (aerobic endurance), psychological (mood states, feeling states), psychophysical (RPE scale), and physiological (blood lactate, oxygen consumption, metabolic efficiency). Both music conditions, in particular the motivational selection, were found to exert consistent benefits across each dependent measure when compared to the no-music control. Notably, feeling states remained more positive throughout the test in the motivational music condition when compared to the other conditions. However, the differences in endurance between motivational and neutral music conditions were negligible, indicating that that music's affective/aesthetic qualities are of lesser importance when used synchronously. The present findings also indicate that both music conditions enhanced metabolic efficiency to a degree that implies a practical value at the highest levels of competition. Guidelines will be offered to facilitate the application of synchronous music among elite endurance athletes.

**Interactive Session with one World Champion Windsurfer**

**Coordinator:** Sidonio Serpa, Faculty of Human Kinetics - Technical University of Lisbon  
**Speaker:** João Rodrigues, Portuguese Sailing Federation; Secretariat of Education & Sport (Autonomous Government of Madeira)

Excellence in sport is a result of multidimensional aspects including the psychological issues. Moreover, competing at World top level for 20 consecutive years demands a unique psychological approach as it is the case of the five times Olympian Joao Rodrigues, also World Champion and 4 times European champion. A phenomenological perspective will be presented in regard to the athlete’s career development. The personal meaning of sports participation will be reported, as well as major life and sports events, and the coordination of sports, academic and professional projects. Moreover, the coach’s and family’s influence along the career will be discussed. The evolution of the motivational process, the personal coping strategies for competition and for overcoming frustration, the development of personal training methods, and challenging the personal limits will be presented and discussed in an interactive bases with the audience.