

UNIVERSITY OF SOUTHERN QUEENSLAND

EFFECTS OF SYNCHRONOUS MUSIC ON PSYCHOLOGICAL
RESPONSES, PERFORMANCE INDICES AND PHYSIOLOGICAL
FUNCTIONING AMONG ELITE TRIATHLETES AND RUNNERS

A Dissertation submitted by

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Abstract

To date, most studies looking at the effects of music in sport have focused on non-elite populations. The use of synchronous music has demonstrated ergogenic, psychological, and physiological benefits when used as an accompaniment to physical activity. The aim of the present research programme was to extend previous investigations of synchronous music to elite athletes. Study 1 assessed the benefits of synchronous music during submaximal and exhaustive treadmill running among elite triathletes. Time-to-exhaustion, mood responses, feeling states, ratings of perceived exertion (RPE), blood lactate concentration, oxygen consumption, and running economy were measured during three treadmill runs. Participants ($n = 11$) ran to motivational music using self-selected tracks, a neutral music condition, and a no-music condition. Time-to-exhaustion in the motivational and neutral music conditions increased by 18.1% and 19.7%, respectively, compared to the no-music condition. Other measures that indicated a benefit of music over no music included RPE (lowest in neutral music condition), blood lactate (lowest in motivational music) and oxygen consumption (lower by 1.0%-2.7%). In Study 2, the software necessary to conduct similar testing outdoors using Apple iPhones was developed. Six iPhones were programmed to gather GPS, cadence, RPE, Feeling Scale and BRUMS data, and were evaluated by two experienced runners. Study 3 investigated the benefits of music on training effectiveness. Participants were elite triathletes ($n = 2$) and elite runners ($n = 6$) who used iPhones while running to a synchronous music condition, a music-led condition, and a no-music condition. Both music conditions were associated with greater distances covered, lower RPE, and more positive feelings and

mood responses. Results suggest that the judicious use of music can potentially provide significant benefits to elite athletes during training activities.

Certification of Dissertation

I certify that the ideas, experimental work, results, analyses, software, and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

Alessandra Mecozzi Saha

Date

ENDORSEMENT

Prof. Peter C. Terry (Supervisor)

Date

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