

# AFFECTIVE RESPONSES OF POSTMENOPAUSAL WOMEN TO AN ACUTE EXERCISE BOUT

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## Introduction

Weight gain and the associated increased risk of coronary artery disease are associated with the postmenopausal period (Shangold & Sherman, 1998). However, moderate intensity physical activity may be protective for postmenopausal women through attenuation of weight gain (Gaspard, Buicu & Creutz, 2001). Despite this evidence, many postmenopausal women do not engage in regular exercise. The affective responses to an acute exercise bout are thought to influence future exercise behaviour.

This study examined the physiological and psychological responses of exercising and non-exercising postmenopausal women to an acute exercise bout. It was hypothesized that the exercise behaviour of postmenopausal women would influence exercise induced affect.



## Methods

Postmenopausal women (N=101) resident in North Queensland volunteered and gave their written informed consent to participate in this study as approved by the James Cook University Human Research Ethics Committee. A self-report questionnaire determined participants' recent exercise history. Participants performed 20 minutes of stationary cycling at 60% VO<sub>2</sub>max. Measures of pre, during (5, 10, 15 and 20 minutes) and post-exercise affect were obtained using the Subjective Exercise Experiences Scale (SEES) (McAuley & Courneya, 1994). HR and RPE were also recorded.

Following data collection, participants were categorised as exercisers (n=53) or non-exercisers (n=48) based on whether they had performed a minimum of 150 minutes of accumulated moderate intensity exercise in the past 7 days. Separate mixed design repeated measures ANOVAs were performed on affect data. Follow-up univariate contrasts (Bonferroni) were performed on significant effects to determine the significance of pairwise comparisons. SEESb was excluded from the analysis because of the high number of extreme outliers and large values for both kurtosis and skewness at each measurement.

## Results

No significant between-group differences were found for positive well-being (SEESa) and fatigue (SEESc) during the acute exercise bout. Therefore, the hypothesis that exercise behaviour of postmenopausal women will influence exercise induced affect was not supported. The exercise bout did however significantly influence SEESa and SEESc for both groups. Pairwise comparisons of Time of measure levels revealed that SEESa values were significantly higher postexercise compared to preexercise (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ), 5 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ), 10 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ), 15 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ) and 20 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.01$ ).

SEESc scores were also found to be significantly lower at 5 minutes during the exercise bout compared to 15 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ) and 20 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ). SEESc scores were also significantly lower postexercise compared to 15 minutes (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.01$ ) and 20 minutes during the exercise bout (Bonferroni adjusted  $p < 0.05$ ,  $P = 0.00$ ).

### Mean $\pm$ SD positive well-being (SEESa) and fatigue (SEESc) values for preexercise (pre), during (5 mins -20 mins) and postexercise (post)

Variable	Exercisers (n=53)	Non-exercisers (n=48)
SEESapre	23.39 $\pm$ 3.30	22.04 $\pm$ 4.71
SEESa5mins	23.13 $\pm$ 3.46	22.66 $\pm$ 4.16
SEESa10mins	23.47 $\pm$ 3.43	22.71 $\pm$ 4.05
SEESa15mins	23.79 $\pm$ 3.32	22.92 $\pm$ 4.34
SEESa20mins	24.32 $\pm$ 3.21	23.04 $\pm$ 4.51
SEESapost	24.83 $\pm$ 3.00	24.12 $\pm$ 3.59

Variable	Exercisers (n=53)	Non-exercisers (n=48)
SEEScpre	8.26 $\pm$ 4.58	9.66 $\pm$ 5.80
SEESc5mins	8.39 $\pm$ 4.68	9.10 $\pm$ 5.08
SEESc10mins	8.62 $\pm$ 4.85	10.23 $\pm$ 6.30
SEESc15mins	8.77 $\pm$ 4.89	10.98 $\pm$ 6.64
SEESc20mins	9.28 $\pm$ 5.43	11.06 $\pm$ 6.74
SEEScpost	8.15 $\pm$ 4.65	9.64 $\pm$ 6.62



## Discussion/Conclusion

The non-significant interaction between SEESa and SEESc and exercise behaviour would suggest that current exercise history may be unrelated to exercise-induced affect. The significant increase in positive well-being for the non-exercisers may have represented an increase in exercise self-efficacy through mastery experience. This positive affective response of the non-exercisers may influence future exercise participation for this population.

Additionally, as the non-exercisers were able to complete the exercise bout feeling no ill effects despite being fatigued during the task, this may also increase the likelihood for future exercise participation. Giving non-exercising postmenopausal women the opportunity to successfully complete exercise activities may promote a sense of accomplishment and the perception that exercise can be an enjoyable experience.

## References

- Gaspard, U., Buicu, C. & Creutz, V. (2001). Multiple benefits of physical exercise in menopausal women. *Revue Medicale de Liege*, 56(4), 219-222.
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