University of Victoria | Graduate Studies

Notice of the Final Oral Examination
for the Degree of Master of Science

of

ALLISON RODWAY

BAET (Camosun College, 2013)

"Changes in Heart Rate Variability in Varsity Athletes from Baseline to Post-injury and Return to Play"

School of Exercise Science, Physical and Health Education

Monday, December 11, 2017
10:00 a.m.
McKinnon Building
Room 179

Supervisory Committee:
Dr. Lynneth Stuart-Hill, School of Exercise Science, Physical and Health Education, University of Victoria (Supervisor)
Dr. Brian Christie, Division of Medical Sciences, UVic (Co-Supervisor)

External Examiner:
Dr. Jodie Gawryluk, Department of Psychology, UVic

Chair of Oral Examination:
Dr. Steve Garlick, Department of Sociology, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

Objective: To determine the change in HRV in concussed varsity athletes from baseline to post-injury to return to play. **Design**: Quasi-experimental, repeated measures design. **Participants**: five male varsity athletes four rugby, one basketball (mean age 19.6 ± 1.52 years), number of previous concussion 1.6 ± 0.55. **Measurements:** HR & HRV frequency domain (LF n.u., HF n.u., LF/HF ratio, Total Power) & Heart rate (bpm) during both seated rest and steady state exercise using a stationary cycle. **Results:** Repeated measures ANOVA revealed a significant difference between baseline (preinjury) resting heart rate and first post-injury assessment resting heart rate ($p=0.037$). Resting Total Power was significantly different between baseline (pre-injury) and first post-injury assessment ($p=0.044$) and between first post-injury and second post-injury assessment ($p=0.010$). No statistical significant differences in any variables were found during exercise, however the trends in the changes of HRV were similar to other research studies and could be of clinical importance. **Conclusion:** Athletes display dysfunction in neuroautonomic cardiovascular regulation post-concussion as seen with changes in HRV. Findings of this study warrant further investigation into the use of HRV as a marker of concussion and concussion recovery.