Effect of Brief Intense Exercise on Gaming Performance of Esports Players - A Pilot Study

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INTRODUCTION

- Esports (electronic sports) is a form of team competition using video games
- Aerobic exercise has been shown to improve executive function tasks and increase in prefrontal cortex activity
- Presently, there are no studies that investigate the effect of exercise on gaming performance

AIMS

1) To evaluate the effect of a brief bout of exercise prior and during intermissions between games on players' gaming performance
2) To evaluate acceptability and enjoyment of the exercise intervention

METHODS

- Five UCI varsity League of Legends team members participated in the study
- Aerobic fitness (peak VO_2) was evaluated in PERC Human Performance Laboratory
- The study included 5 exercise sessions and 4 control sessions (no exercise)
- Intervention before and in the intermissions between the games: 1) Three minutes of intense exercise with music or 2) music only with no exercise (control)
- Heart rate monitors were used to evaluate exercise intensity
- Physical ACtivity Enjoyment Scale (PACES) contains 16 statements with a scale ranging from 1 to 5. Total score ranges from 16 to 80, with higher scores reflecting greater levels of enjoyment.
- Semi-qualitative questionnaires were used to obtain overall feedback
- Gaming performance will be evaluated using Mobalytics analytics

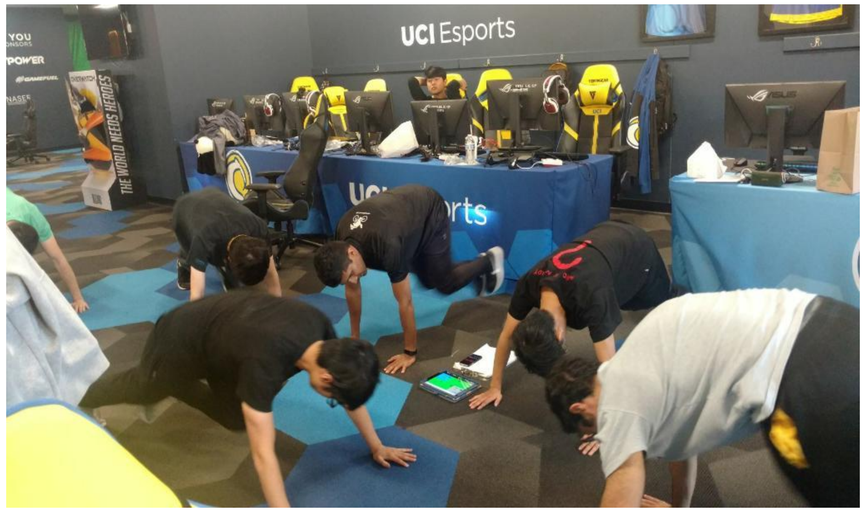
PARTICIPANTS CHARACTERISTICS

Number of participants	Age	BMI	Peak VO_2 (ml/kg/min)
5	22.7 ± 1.4	20.7 ± 1	42.2 ± 3.9

METHODS (2)

Participants were evaluated during 9 League of Legends matches

Exercise consisted of 3 minutes prior to the beginning of the first game and during the intermissions between games



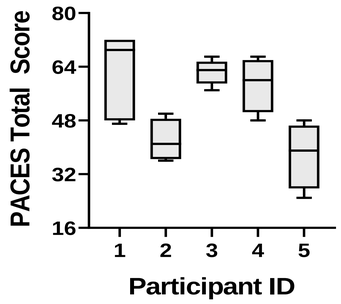
RESULTS

Participant heart rate over the course of one practice match with exercise

Heart rate during an exercise bout ranged from 68-86% of predicted maximum heart rate (reflects high intensity exercise bouts)

RESULTS (2)

Physical ACtivity Enjoyment Scale* (PACES) Total Score (out of 80)



Participant Testimonial (partial list)

Positive	Negative
"Good experience overall" "Less sleepy"	"Took too much energy"
"Good team building" "More energy"	"Sweating is uncomfortable"
"Played better with exercise"	"Exercise messes with my head"
"Would prefer to do exercise before games"	"When I exercise I lose my zone"
"Better in terms of mood and performance"	"Found the exercise exhausting"
"Improved my performance overall"	"Prefer if exercise was less intense"
"I feel more awake" "Better mood"	

SUMMARY

- Exercise in the esports arena prior to and during the intermissions between games is feasible
- Overall, 3 participants thought the exercise benefitted their performance while 2 participants found it uncomfortable
- Exercise intensity should be considered to be reduced or be prescribed for each participant based on his/her level of fitness and preference
- Gaming performance analysis is currently under way
- Exercise might prove to be a useful approach for some gamers to improve resilience and focus during the long hours of eSports matches

ACKNOWLEDGEMENTS

We would like to thank the UCI varsity League of Legends Esports team members and support staff as well as the UCI Esports Arena facility and staff

This study was supported by the UCI Esports Arena and PERC Systems Biology Fund