

## Physical exercise and risk-taking behavior: how are they related one another?

*Tuesday, September 24, 2024 2:10 PM (20 minutes)*

Evidence shows that physical exercise (PE) improves psychological wellbeing. PE induces the release of endorphins, which in turn increase the production of dopamine. This rising has been associated with increased risk-taking and reward-seeking behavior. However, some evidence points out that physical exercise acutely reduces risk-taking related to substances abuse, decreasing cravings.

To better understand the relationships between PE –with or without concurrent electrical stimulation of the muscles - and risk-taking, we carried out a pilot study with a convenience sample of 20 healthy men (age range = 18-55 years;  $M = 37.8$   $SD = 9.48$ ). Participants were randomly allocated in either the cycling group ( $N = 10$ ) or the cycling with superimposed electrical myostimulation group ( $N = 10$ ). Electrical stimulation was applied bilaterally to lower limbs. They underwent an interval training session of moderate intensity on a cycle ergometer for a single session and two times a week for six weeks. Participant performed the Balloon Analogue Risk Task (BART), after 24 hours since the single training (T1) and after the six weeks (T2). Preliminary results showed a decrease in risk-taking in the group with electrical stimulation (baseline:  $M = 51.1$ ,  $SD = 49.5$ ; T1:  $M = 40.0$ ,  $SD = 9.26$ ; T2:  $M = 44.4$ ,  $SD = 7.80$ ), while no changes were observed in the group without electrical stimulation (baseline:  $M = 37.7$ ,  $SD = 11.0$ ; T1:  $M = 36.7$ ,  $SD = 9.34$ ; T2:  $M = 38.6$ ,  $SD = 13.4$ ). Our preliminary findings suggest that adding electrical stimulation during physical exercise may mitigate risk-taking.

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No

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**Session Classification:** Lunch & poster 2