Purpose: Dominant (D-leg) and nondominant (ND-leg) legs exhibited differences in terms of postural control. Warm-up increased temperature elevation improves the output of sensory, integration, and motor functions. The aim of the present study was to evaluate the postural control between D-leg and ND-leg over time after a warm-up.
Methods: Twelve well trained students (8 m, 4 f) participated. The experiment consisted in a basal balance assessment (pre) followed by a warm-up (10 min of cycle ergometer at an intensity of 20 on the CR-100 Borg's scale) then, balance assessments after 2 (post), 5 (p5), 10 (p10), 15 (p15) and 20 (p20) minutes. The balance was assessed standing one-legged barefoot and as motionless as possible during 25.6 sec on a force platform. Were measured displacements center of foot pressure ($COP_{tot\ sway}$) in antero-posterior ($COP_{AP\ sway}$), medio-lateral ($COP_{ML\ sway}$) directions and calculated the ellipse ($COP_{ellipse}$).
Results: The Wilcoxon sign rank test showed a positive warm-up effect on D-leg after 20 min in all the parameters considered: $COP_{tot\ sway}$ ($p = 0.0009$), $COP_{AP\ sway}$ ($p = 0.002$), $COP_{ML\ sway}$ ($p = 0.009$) and $COP_{ellipse}$ ($p = 0.002$). Friedman's ANOVA showed a warm-up effect on the D-leg for the variables: $COP_{tot\ sway}$ ($p = 0.005$), $COP_{AP\ sway}$ ($p = 0.008$) and $COP_{ML\ sway}$ ($p = 0.02$) no significance differences were observed for ND-leg. The multiple comparison obtained by the Nemenyi post hoc test shows significant decrease in $COP_{tot\ sway}$ in D-leg between pre and p20 ($p = 0.005$), $COP_{AP\ sway}$ D-leg between pre and p20 ($p = 0.02$) and $COP_{ML\ sway}$ D-leg between pre and p20 ($p = 0.008$).
Conclusions: the results suggested that Warm-up induced an improvement of postural control 20 min after the end of the exercise but not in the same way between D-leg and ND-leg. This might be due to a different physiological response to the warm-up between the two legs.
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OP4 SPORTS AND EXERCISE PHYSIOLOGY

OP4-1 KEYNOTE
Cardiorespiratory responses to cycle exercise during a low-intensity sinusoidal work rate

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Purpose: Sinusoidal varying protocols have been recently re-proposed in assessing the cardiorespiratory response (CRR) to exercise to reflect the variability in long-lasting physical activities. Contrary to square-wave tests, the cyclic nature of sinusoidal work rate allows to explore the CRR kinetics several times. Previous studies used to overlap CRR of successive periods; however, so far no study assessed whether CRRs are constant along different cycles. Therefore, this study aimed at investigating the CRR during an exhausting low-intensity sinusoidal work rate.
Methods: Seven subjects (age: 27 ± 7 yr, body mass: 72.5 ± 6.7 kg; stature: 1.8 ± 0.1 m) participated to the study. After determining on different days the maximum oxygen uptake (V'O2max) by ramp cycle ergometric test and critical power (CP) via different submaximal exercises, they underwent a sinusoidal work rate until exhaustion. The exercise varied according to a sinewave function with a midpoint (MP) equal to 50 W below CP (CP-50), an amplitude (A) of 50 W and a period of 4 min. Expiratory ventilation (V'E), carbon dioxide output (V'CO2), oxygen uptake (V'O2) and heart rate (HR) were obtained breath-by-breath and fitted off-line by the sinewave functions that minimized the residuals. Thereafter, A, MP and the time-delay (tD, the latency between mechanical and CRR signals) were obtained for each cycle. A one-way ANOVA for repeated measures was applied to test the effect of fatigue.
Results: MP of V'E, V'O2 and HR significantly increased as well as A of V'E and V'CO2 ($p < 0.05$ for all parameters). On the contrary, A of HR decreased during the test ($p < 0.05$). No changes were detected on tD in all CRRs parameters.
Conclusions: This study demonstrates that despite the low intensity level of the sinusoidal protocol, the dynamics of CRRs are not constant. Therefore, averaging the CRRs of different cycles might introduce a bias in the outcomes concealing a marked change in CRRs.
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OP4-2
Effects of a half-marathon run on mitochondrial respiration in women platelets

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Purpose: This study was designed to test the hypothesis that metabolic perturbations induced by a single prolonged running session (half-marathon) result in changes of activity of mitochondria. Due to the invasive nature of muscle biopsies, minimally-invasive alternatives are gaining interest. It is known that acute strenuous exercise is linked to perturbations of inflammatory cells[1]. However, the effects of a single physical strain on mitochondrial metabolism in human blood cells have been investigated only in one study[2].
Methods: Nine female recreational athletes (average age: 39 ± 12 years; BMI 21.5 ± 2.3 kg/m^2) participating to the 2019 edition of R4S (21 Km) joined our study. Measurements were performed in the days before the competition (PRE) and immediately after finishing the race (POST) by taking whole blood (15 ml). Mitochondrial respiration in freshly purified human platelets was performed using O2 K Oxygraph with an optimized protocol. Data for the ROUTINE (R), LEAK (L), and maximal electron transfer