

Comparing Perceptual Responses Between Different Modalities of Sprint Interval Training (SIT)

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ABSTRACT

Although the time-efficiency and physiological benefits of SIT are well-documented, it has been criticized for eliciting adverse psychological responses in many adults, which are a potential barrier to long-term exercise adherence. To date, minimal research has studied the influence of exercise modality on perceptual responses to SIT. **PURPOSE:** To compare perceptual responses between different modalities of SIT in adults. **METHODS:** Subjects consisted of 11 healthy, non-obese men and women (age= 27±9 year, %BF=16±5%) who are physically active (PA=5±2hr). Participants initially underwent graded exercise testing to determine VO₂max and peak power output (PPO) on the arm (ACE) and leg cycle ergometer (LCE). On two separate days, subjects performed four 20-second sprints at 130% PPO at cadence between 120-130 rev/min, interspersed with 2-minute recovery on the ACE or LCE at 20% PPO. Gas exchange data, HR, and perceptual responses including affective valence (FS) and rating of perceived exertion (RPE) were obtained throughout exercise. PACES was administered post-exercise to assess overall enjoyment of each modality. Blood samples were acquired to assess changes in blood lactate concentration (BLa). **RESULTS:** Repeated Measures Anova showed no significant differences in affective valence (FS) (P=0.74) between exercise modalities. Although results showed no effect of mode for RPE (P=0.38), there was a significant time X mode interaction (p=0.017) and higher RPE was revealed during ACE. Mean PACES was equal to 108.5±14.3 for LCE and 105.9 ± 19.9 for ACE (P>0.05). In response to LCE and ACE, BLa increased pre- to post-exercise (P<0.001); however, no significant difference between modes was found (P=0.67). **CONCLUSION:** Results showed no significant difference in affective valence or enjoyment in response to SIT between modalities. Nevertheless, ACE elicits higher RPE compared to LCE. This contradicts prior findings which propose that exercise having a greater contracting muscle mass may induce higher BLa that is associated with change in affective valence. By further understanding perceptual responses elicited by specific SIT modalities, clinicians may improve the efficacy of exercise prescription and resultant alterations in health and fitness in adults.