

Thesis Title Perceived Exertion, Leg Aches and Pain, and Blood Lactate Level
During Exercise in Thai Boxers.

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ABSTRACT

The present study was undertaken in eight professional Thai Boxers (TB) to investigate their perceptual responses to a 2-min incremental cycling exercise stress in comparison with a physical fitness matched group of five soccer players (SC) and with a control group of eight non-athletes (NA). Rating of perceived exertion (RPE) and of aches and pain in the leg (RPP), blood lactate (HLA), heart rate (HR), minute ventilation ($\dot{V}E$), oxygen uptake ($\dot{V}O_2$), and respiratory exchange ratio (RER) during exercise until exhaustion were determined. Prior to the exercise anaerobic power and capacity, hand grip and leg strength were measured in each subject. It was found that both RPE and RPP of the three subject groups during exercise were similarly changed and not significantly different at any same relative intensities of exercise. Despite of significantly higher $\dot{V}O_2$ ($p < 0.05$) and lower HR ($p < 0.05$) in the TB and SC compared to the NA,

no significant differences in RER, HLa, RPE and RPP between the three subject groups. In addition, while $\dot{V}E$ was higher ($p < 0.05$) in the SC at 60, 80 and 100% $\dot{V}O_{2\max}$ compared to other subject groups the ventilatory equivalent for oxygen ($\dot{V}E \cdot \dot{V}O_2^{-1}$) was significantly lower ($p < 0.05$) in the SC and TB than the NA across all exercise intensities. RPE was more significantly correlated with $\dot{V}O_2$, $\dot{V}E$, $\dot{V}E \cdot \dot{V}O_2^{-1}$, RER, HR and HLa when compared to RPP although the two perceptions were intercorrelated. The results suggested that at the same elevated intensities of exercise both RPE and RPP were neither dependent on physical fitness level of the subjects nor the types of sport activities. It was concluded that Thai boxers, the athletes of contact sport, exhibited no differences in subjective rating of perceived exertion and aches and pain in the leg during exhaustive leg exercise compared to the soccer players and the non-athletes. This finding indicates that perceived exertion and perception of pain as measured by the newer Borg scale, CR-10, did not discriminate between Thai boxers, soccer players and the non-athletes during incremental load exercise when relative exercise intensity was employed, despite of differences in physiological strains.