



IMPACT OF TRAINING CARDIO-PULMONARY FITNESS OF SRI LANKAN NATIONAL LEVEL ATHLETES ENGAGED IN RUNNING EVENTS

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Most Sri Lankan national level athletes do regular training at high intensity for about five to six days per week. Even with a high level of training their performance at local and international competitions is poor. Cardio pulmonary fitness assessment (CPET) of athletes is important to improve and monitor their sports performance and health status. The study aimed to determine the cardiopulmonary fitness parameters of athletes engaged in running events and the effect of training on cardiopulmonary fitness. National running athletes (n = 62; male= 40, female= 22) were studied. Cardiopulmonary fitness parameters; maximum O₂ uptake (VO₂peak), exercise duration (VO₂max time), anaerobic threshold (VO₂AT), exercise capacity(METs), peak heart rate (HRpeak), heart rate at VO₂AT (HRat), heart rate after 3minutes of exercise (HR3min), peripheral oxygen saturation (SpO₂), maximum energy expenditure (EE) and maximal load (W) were assessed by a cardiopulmonary exercise testing machine with a cycle ergometer (COSMED Inc.). The cardiopulmonary fitness parameters were compared with age, height, weight and gender matched controls not engaged in regular sports training (n= 60; male=30, Female=30). Data were analyzed using SPSS-16 statistical package. In male athletes VO₂max, VO₂max time, MET, W and in female athletes VO₂max, HR peak, HR at, HR3min, MET and EE were significantly improved when compared to controls (p<0.05). The correlation between cardiopulmonary functions of male athletes was not significant with training duration. Female athletes had a positive correlation of SpO₂ and a negative correlation with HRpeak, HRat with training duration. The association between improvement in VO₂max with the duration of training was poor (p>0.05). Improvement of VO₂max along with other parameters enhances performance. In conclusion; the training schedules of the national level male and female running athletes should be re-evaluated and fine tune to achieve more precise cardiopulmonary fitness and performance outcomes.

Keywords: *national athletes, cardiopulmonary exercise fitness, training duration*