

# **Cardio-pulmonary functions of athletes involving in running events; implication for primary care physicians in Sri Lanka.**

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## **Introduction**

Most athletes visit primary care physicians especially to get medical advice to improve sports performance. Cardio pulmonary fitness assessment (CPET) of athletes is important to improve and monitor their sports performance and health status.

## **Objectives**

To determine the cardiopulmonary functions of athletes engaged in running events and the effect of training on cardiopulmonary function.

## **Method**

National and university level running athletes (n = 62; male= 40, female= 22) were studied. Cardio-Pulmonary fitness parameters (*peak O<sub>2</sub> uptake (VO<sub>2peak</sub>), anaerobic threshold (VO<sub>2AT</sub>), exercise capacity(METs), peak heart rate (HR<sub>peak</sub>), anerobic threshold(AT), heart rate at AT- HR<sub>at</sub>, blood pressure resting (BP<sub>rest</sub>) and peak (BP<sub>peak</sub>) and lung function parameters.*) were assessed by a Cardiopulmonary exercise testing machine with a Cycle ergometer (COSMED Inc. ). Data 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.

## **Results**

There was a significant improvement of some cardiopulmonary fitness parameters amongst male and female athletes compared to controls (male - FVC, FEV<sub>1</sub>, PEFR, VO<sub>2</sub>max, VO<sub>2</sub>max time, MET, BP rest, BP ex and female - FVC, RF, VO<sub>2</sub>max, HR peak, HR at, MET) (p<0.05). There were no significant correlation of cardiopulmonary functions of male athletes with training duration. Female athletes had a positive correlation of FEV<sub>1</sub>, FVC, MVV, SpO<sub>2</sub> and a negative correlation with FEV<sub>1</sub>/FVC ratio, HRpeak, HRat with training duration.

## **Discussion**

The association of improvement in VO<sub>2</sub>max and other physical performance parameters with the duration of training was poor. The reasons may be biological issues as cardio pulmonary problems, problems in peripheral circulation or training errors. Improvement of VO<sub>2</sub>max along with other parameters enhances performance.

## **Conclusions**

Primary care physicians need to be aware that sub optimal performance of an athlete should be investigated with cardiopulmonary fitness testing in consultation with an exercise physiologist.

## **References**

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