

## **Analysis of Selected Physiological Parameters of an Elite Male Triathlete in Sri Lanka**

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A triathlon is an endurance event, consists of three individual disciplines such as swimming, cycling, and running which should be completed in this sequential order. This study aimed to identify the distribution of selected physiological parameters and the relationships of those physiological parameters with elite Sri Lankan triathletes' performance. Among fifty-five (N=55) elite male triathletes who participated in Defence Triathlon Meet 2018, twenty (n=20) elite male athletes, age ( $25.6 \pm 2.68$  years) were randomly selected for this study which was conducted under pre-experimental design. The Cooper 12-minute test, running-based anaerobic sprinting test, 35m sprinting test, modified sit & reach test standing broad jump test were performed to identify the mean values of the VO<sub>2</sub> max, peak power output, speed, flexibility and elastic strength of lower limb respectively. Bioelectrical Impedance Analysis (BIA) was performed to identify the fat mass (FM), fat-free mass (FFM) and muscle mass (MM). The finishing timings of the above meet of selected triathletes were taken as their triathlon performance. Descriptive statistics, Pearson correlation and ANOVA were used to analyse the data. There was strong negative relationship between triathlon performance and maximum power (R= -0.892), minimum power (R= -0.611), average power (R= -0.838) values of peak power, VO<sub>2</sub> max (R= -0.844), flexibility (R= -0.852) and elastic strength (R= -0.929). Moreover, resting heart rate (RHR) (R= 0.845), speed (R= 0.930) and FM (R= 0.572) had shown strong and moderate positive relationships on performance respectively. There was a significant effect of an early engaged event ( $p= 0.002$ ) on triathlon performance. Furthermore, there was a significance difference of VO<sub>2</sub> max ( $p= 0.024$ ) between early swimmers (62.23 ml/kg/min) and pure triathletes (57.27 ml/kg/min). The VO<sub>2</sub> max, peak power output, speed, flexibility and elastic strength were found to have a significant impact on triathletes' performance. Moreover, type of early engaged event was a significant determinant of the triathlete's performance.

**Keywords:** *physiological parameters, triathletes, Sri Lanka*