

Investigation of Various Physical and Physiological Properties of Ethiopian Elite Men Distances Runners

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Abstract : The purpose of this study was to investigate the key physical and physiological characteristics of 16 elite male Ethiopian national team distance runners, who have an average age of 28.1 ± 4.3 years, a height of 175.0 ± 5.6 cm, a weight of 59.1 ± 3.9 kg, a BMI of 19.6 ± 1.5 , and training age of 10.1 ± 5.1 yrs. The average weekly distance is 196.3 ± 13.8 km, the average 10,000m time is $27:14 \pm 0.5$ min sec, the average half marathon time is $59:30 \pm 0.6$ min sec, the average marathon time is $2hr\ 03min\ 39sec \pm 0.02$. In addition, the average Cooper test (12-minute run test) is 4525.4 ± 139.7 meters, and the average VO_2 max is 90.8 ± 3.1 ml/kg/m. All athletes have a high profile and compete on the international label, and according to the World Athletics athletes' ranking system in 2021, 56.3% of the 16 participants were platinum label status, while the remaining 43.7 % were gold label status-completed an incremental treadmill test for the assessment of VO_{2peak} , submaximal running, lactate threshold and test during which they ran continuously at 21 km/h. The laboratory determined VO_{2peak} was 91.4 ± 1.7 mL/kg/min with anaerobic threshold of 74.2 ± 1.6 mL/min/Kg and VO_{2max} 81%. The speed at the AT is 15.9 ± 0.6 Km/h and the altitude is 4,0%. The respiratory compensation RC point was reached at 88.7 ± 1.1 mL/min/Kg and 97% of VO_2 max. On RCP, the speed is 17.6 ± 0.4 km/h and the altitude/slope are 5.5% percent, and the speed at Maximum effort is 19.5 ± 1.5 and the elevation is 6.0%. The data also suggest that Ethiopian distance top athletes have considerably higher VO_2 max values than those found in earlier research.

Keywords : long-distance running, Ethiopians, VO_2 max, world athletics, anthropometric

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