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Oxygen uptake plateau occurrence in trained male and female adults

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The attainment of an oxygen uptake () plateau during maximal incremental exercise is often considered as a criterion for the elicitation of a maximal effort. However there is growing evidence that a () plateau does not occur in all adult subjects despite exercise to volitional exhaustion. One school of thought is that aerobically trained subjects or subjects with a higher maximal were more likely to demonstrate the plateau phenomenon than subjects with lower maximal . The study investigated the frequency of occurrence of the plateau, defined as an increase in of less than 1.5 ml/kg/min in trained Asian male (n=158, age=21.7±4.9y; body mass=64.8±8.6kg) and female (n=28, age=21.9±7.0y; body mass=53.0±7.0kg) athletes during a maximal treadmill run to volitional exhaustion, to determine maximal . The plateau phenomenon was only detected in 53% of the male athletes and 64% of the female athletes, despite the lower ratio-scaled peak values (48.4±7.2 vs. 58.0±6.9 ml/kg BM/min; p<0.05) of the female athletes compared to the male athletes. These data refuted the assertions that athletes with higher aerobic fitness were more likely to show a plateau, and that the lack of a plateau was due to poor motivation on the part of untrained adults to give a maximal effort.

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