

A Comparison of Cardiopulmonary Response of Elite Indian Distance Athletes with Certain Selected Elite Power Event Groups

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ABSTRACT Cardiopulmonary Exercise Testing (CPET) was carried out on 43 elite Indian sports persons belonging to the power (anaerobic) disciplines of Sprints (n=12), jumps (n=21) and weightlifting (n=10), by graded exercise consisting of incremental treadmill running, using a computerized breath-by-breath analyzer. Similar CPET was carried out on 50 elite long distance runners (3000m and above). The physical and physiological responses, including the total duration of exercise, time taken to reach the anaerobic threshold, time spent beyond the anaerobic threshold, were measured and compared. Significant intra-group differences were observed between the elite anaerobic event athletes and the elite long distance athletes in certain physical as well as in their cardiopulmonary responses. The study concluded, among others, that the elite sprinters displayed significant higher endurance capacities, ventilatory responses and exercise time as compared with jumpers and weightlifters and had the highest physical as well as physiological fitness amongst the anaerobic group athletes. The elite long distance (aerobic) athletes displayed significantly higher values of oxygen at the anaerobic threshold and other cardiopulmonary transients. As compared to the anaerobic athletes both as group as well as separately. The study also concluded that the elite long distance athletes possessed the highest physical and physiological fitness.