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Physiological characteristics of sprint and endurance Masters runners.

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Abstract

Data were obtained from 13 sprint (age range 41-58) and 13 distance (age range 4-78) Masters track athletes. The mean VO₂max value for the distance runners was 54.4 +/- 3 ml kg min compared with 47.2 +/- 2 ml kg min for the sprinters. The highest VO₂max (71.0 ml kg min) was obtained on a 45-year-old distance runner while the lowest (27.3 ml kg min) was obtained on the oldest (78 years) distance runner. VO₂max decreased by 34.5% from age 40 to 70 in the distance runner in spite of continued training that ranged from 40 to 120 miles/week. Maximum ventilation rates were 122.5 +/- 6.8 and 116.8 +/- 7.0 l min for the sprint and distance runners, respectively. Percentage of body fat was 16.5 +/- 0.5 for the sprinters and 18.0 +/- 1.1 for the distance runners. Serum cholesterol values were 218.7 +/- 8.7 and 203.0 +/- 13.8 mg/dl, while triglyceride values were 101.5 +/- 8.2 and 84.1 +/- 9.3 mg/dl for the sprint and distance groups, respectively. These data indicate that, VO₂max decreases significantly with aging despite the continuation of long distance training. Percent body fat and serum lipid levels were significantly lower in these athletes compared to those for sedentary adults, suggesting a protective effect against coronary heart disease. Only one subject had S-T segment depression during the exercise test.

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