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ARTICLE



Body composition, energy expenditure and physical activity

Is a vegan diet detrimental to endurance and muscle strength?

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Abstract

Background/objectives In the general population, there is a popular belief that a vegan diet may be associated with a lower exercise performance due to the lack of certain nutrients in vegan individuals. Thus, the purpose of the present study was to examine endurance and muscle strength differences between vegan and omnivore participants.

Subjects/methods We studied 56 healthy young lean physically active women (age: 25.6 ± 4.1 years; body mass index: 22 ± 1.9 kg/m²). Participants were classified as vegan ($n = 28$) or omnivore ($n = 28$) based on their eating habits. All volunteers followed either a vegan or an omnivore diet for at least 2 years. Anthropometric measurements, body composition, estimated maximal oxygen consumption (VO₂ max), a submaximal endurance test (70% of VO₂ max), muscle strength (leg and chest press), and dietary factors were measured.

Results Both groups were comparable for physical activity levels, body mass index, percent body fat, lean body mass, and muscle strength. However, vegans had a significantly higher estimated VO₂ max (44.5 ± 5.2 vs. 41.6 ± 4.6 ml/kg/min; $p = 0.03$, respectively) and submaximal endurance time to exhaustion (12.2 ± 5.7 vs. 8.8 ± 3.0 min; $p = 0.007$, respectively) compared with omnivores.

Conclusions The results suggest that a vegan diet does not seem to be detrimental to endurance and muscle strength in healthy young lean women. In fact, our study showed that submaximal endurance might be better in vegans compared with omnivores. Therefore, these findings contradict the popular belief of the general population.