



Opinion

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Plant-Based Diet Is It Suitable for CrossFit Athletes?



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Abstract

In the general population, a good percentage of people base their diet on plant-foods; by combining a good variety of vegetables, it is possible to obtain a sufficient amount of complete proteins. Strength athletes (bodybuilding, weight-lifting, CrossFit) usually consume high quantity of meat and dairy products because they think it is necessary to get a high quantity of proteins. Surprisingly, the same athletes may follow a plant-based diet to ensure their protein intake and sport performances, as shown in this opinion article.

Keywords: Vegetarian; Vegan; Strength athletes; CrossFit; Athletes diet

Introduction

Founded in 2000 in the West Coast of United States, CrossFit is a very attractive modality of high interval intensity training (HIIT) that is involving more and more athletes from all over the world[1]. The amount of training sustained by these athletes may be unbelievable. In a recently published case series of arthroscopic repair of torn shoulder tendons, it was reported that CrossFit competitors may reach more than 2 hours a day of training for 7 days a week. [2] In some cases, athletes used to train almost 3/hours a day (18 hours/week), that is an unbelievable amount considering the extreme conditioning nature of CrossFit training[2]. To sustain such heavy training, athletes need to eat a good quantity and quality of food, with a daily intake of kilo calories (Kcal) that often exceed 3000, or even more[3]. Usually, these Kcal come from healthy and high energy food that are included in a variety of diet programs, as the Paleo diet, the Zone diet, and etc. These diets provide animal-based and plant-based foods, and athletes easily reach their macro- and micro-nutrients intakes such as carbohydrates, proteins, fats, vitamins and mineral salts. Because of ethic, health and environmental reasons, a considerable percentage of people became vegetarian or vegan, and they are starting to base their diet on plants. Why do we eat animals? Meat is a good source of energy and essential nutrients as iron, zinc and vitamin B₁₂. Literature evidenced that in the general population, it is possible to obtain a sufficient intake of such nutrients without eating meat if a wide variety

of plant-based foods are consumed [4,5]. Is it possible in high-demanding athletes? Typically, CrossFit athletes have specific morphometric characteristics, with BMI often exceeding 28kg/m² and very low-fat percentage (less than 10%), similar to that of body builders [2]. In strength athletes, it is generally believed that it is necessary to eat big amounts of red meat, chicken, eggs and dairy products. Probably, this is what currently happens in most of the sportsmen who have a protein intake target of 2grams/kg bodyweight daily,[6] or even more. Nevertheless, athletes and trainers are not aware about the adoption of a plant-based diet on strength and power performance. It is well known that proteins coming from plants have not a complete aminoacidic profile because of the absence of one or more essential amino acids (leucine, isoleucine and valine). By simply combining and varying plant-foods, this drawback is overcome, and surprisingly, our digestive tract will tend to absorb much more proteins from plants respect to meat or animal-products. It may be argued that in plant-foods there are many ant nutritional factors affecting digestibility of the proteins [7]. However, the impact of ant nutritional factors may be lessened through a variety of different preparation techniques as soaking, germination and fermentation; overall, home cooking results in better digestibility compared to commercial preparation[7]. Generally, people that follow a plant-based diet (vegetarian or vegan) pay much more attention to their food respect to omnivorous. This lead to have a more complete

and higher assumption of micronutrients (vitamins and mineral salts),[8] that are essential for oxidative processes; in high-demanding athletes, micronutrients are necessary in much higher intakes. Muscle activity is based on processes that burn oxygen and glycogen, with some catalysators as vitamin B₁₂; so, oxidative stresses caused by the production of free radicals are enormously higher in athletes. To face these natural processes, sportsmen who follow a plant-based diet have much more available anti-oxidants and other substances fighting the tendency to develop an acid local environment. As Cross Fit athletes well know, acid development in muscles lead to pain, and pain lowers with no mercy the athletic performance. Additionally, digestion and metabolism of meat (red, poultry, processed) lead to a much higher production of acids and oxidants, that negatively alter performances and are associated to development of cardiovascular diseases, some kind of cancer as digestive and urinary tract and even lung (24%increased risk of lung cancer for high consumption of red meat) [9]. What about other aspects of a plant-based diet and life-style? What about their quality of life? Is a plant-based diet difficult to be followed and so, is it stressing? Are people who do not eat animal's sadder respect who do that? Do they feel to be less strong respect to meat eaters? Some colleagues in 2018 have administered the World Health Organization Quality of Life Brief questionnaire to 281 recreational runners [10]. Their conclusions were that vegetarian and vegan athletes have high-quality of life, and their consciousness about saving animals and environment from meat-industry related pollution make them with a high psychological well-being.

Conclusions

In conclusion, Cross Fit athletes may follow a plant-based diet to ensure their macro (carbohydrates, proteins, healthy fats) and micro (vitamins and mineral salts) nutrients. With an energy intake that usually exceeds 3000 Kcal, athletes will certainly be able to combine proteins with a complete amino-acidic profile, as

long as they eat a wide variety of plant-based foods. Their athletic performances and general well-being will be not inferior to the meat eaters.

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