



The Healthy -Unhealthy Benefit of Vegetarian Diet and How to Reduce the Unhealthy Benefit?



Rosa Lelyana*

Medicine Faculty of Diponegoro University, Indonesia

*Corresponding author: Rosa Lelyana, Medicine Faculty of Diponegoro University, Semarang, Indonesia

Submission: 📅 May 12, 2018; Published: 📅 July 06, 2018

Abstract

Many diseases related to diet habit that we have chosen. If you choose more fatty foods in your daily dietary consumption, the risk of suffering from various diseases will be more often than you will get for suffering if you reduce various fatty foods. Actually we still need to consume fatty foods for our daily needs. The needs of carbohydrates, fats and proteins and the needs of vegetables and fruits still require consideration or calculation that suitable with the needs and daily activities. Lately some people have chosen to switch to a vegetarian diet. Actually, vegetarian diet is a very interesting diet for apart of people in the world but still uncommon habit for apart of people, too. The vegetarian diet is still an awkward thing for some people. This diet is not fully understood by apart of people although this diet is safety if consumers fully understand about the diet. The purpose of this review study is to understand the benefits of a vegetarian diet for our healthy body.

Keywords: Vegetarian; Diet; Health; Unhealthy; Benefit

Introduction

Apart of people love to eat vegetables. The examples of vegetables are carrots, beans, lentils, celery, cabbage, broccoli, mustard greens, red spinach, green spinach and others. But, vegetarian diet is not the same meaning of vegetables diet. Although it can be assume that vegetarian from the word of vegetable, but it can be assume, too that vegetarian from the word of dietarian.

There are many types of vegetarian diet [1] and has been a lot of informations about the vegetarian diet. However, there are people who do not like or do not want to become a person who consume only vegetables. This is maybe due to the lack of convincing information and evidence of research results on the benefits of a vegetarian diet. Therefore, this article will discuss about the benefits of a vegetarian diet and how to reduce the unhealthy benefit.

Methods

Systematic review based on several international journal articles selected through keywords that have been published and can be viewed / read online on the internet.

Results and Discussion

Healthy benefits of vegetarian diet: Actually the health benefits derived from a vegetarian diet depend on the type of vegetarian diet that is chosen for consumption. Different types of vegetarian diets that one chooses will affect the results of the benefits gained.

The general health benefits to be gained from consuming a vegetarian diet are:

1. Reduce consumption of saturated fat, cholesterol and risk of chronic diseases [2]. It is associated with high fiber content due to vegetarian diet so that the possibility of accumulation of body fat will be reduced.
2. Reduce the heart disease and the risk of high blood pressure/hypertension incidence [3-7]. The high consumption of fiber with the content of antioxidants in the body consuming a vegetarian diet than the consumption of saturated fat and cholesterol resulting in fat deposits and cholesterol in the body is reduced so that the proinflammasi response will also be reduced. High consumption of fat and fat accumulation in the body will increase the pro-inflammatory response.
3. Reduce the diseases related to gastrointestinal problem and lung cancer [5] and also the risk of cancer incidence predominantly for colon cancer [3-5]
4. Reduce the risk of diverticular disease [3,4]
5. Reduce osteoporosis and rheumatoid arthritis risk incidence [3,4]
6. Reduce constipation [5]
7. Lower concentration of uric acid, high sensitivity C-reactive protein (hsCRP) and triacylglycerol [8,9]
8. Increase consumption of antioxidants and fiber consumption in the body [2] and increase the level of plasma fasting

ascorbic acid / higher fasting plasma ascorbic acid concentration [9,10]. It also contains many phytochemicals, Mg, vitamin E, folic acid, n-6 PUFA. However low cholesterol, total fat, saturated fatty acids, sodium, Fe²⁺, zinc, vitamin A, B12, D and n-3PUFA. Low vitamin B12 and n-3PUFA levels are risk factors for non-communicable disease in vegetarian dietary consumption because it is associated with elevated plasma homocysteine levels, mean platelet volume and platelet aggregability than omnivore diet [10].

9. Vegan food without cooking or called living food (LF) or uncertified vegan food is beneficial for rheumatoid diseases where the inflammatory process is the most important thing in the management of this disease. Consumers of vegetarian diet rich in fiber, lignin and excretion of polyphenols such as enterodiol and enterolactone in their body [11] is food for rheumatoid diseases which is inflammatory process is the most important thing in the management of this disease. Consumers of the vegetarian diet have higher levels of foliate in the body than omnivore but lower vitamin B-12 [12].

10. Consumers of a vegetarian diet have low levels of total cholesterol, LDL-C and hs-CRP / high-sensitivity C-reactive protein than omnivore [13].

11. Similarly, other studies have shown low levels of inflammatory markers, especially lipoprotein associated phospholipase A2 (Lp-PLA2) [14].

Unhealthy benefit of vegetarian diet

Homocysteine levels are higher in vegetarian diet consumers than omnivore [13]. Other studies suggest that vegetarian diet consumers have high levels of hs-CRP and triacylglycerol [14]. Consumers of vegetarian diets have risk factors for getting the non-communicable diseases [10] such as increased plasma homocysteine levels [10,12-14], mean platelet volume and platelet aggregability [10,12]. This is because the vegetarian consumers has low levels of vitamin B12 and n-3 PUFA [10], vitamin B6, valine, isoleucine, leucine, lysine, alanine, arginine but higher levels of glycine [12] so it is necessary to add vitamin B12 to prevention of non-communicable disease [13] and even increased intake of n-3 PUFA [10]. The level of 25 (OH) D is not associated with vegetarian state but there are other factors, which more closely related to vitamin D supplementation, skin pigmentation and degree number of skin pigmentation then intensity of sun exposure affecting s25 (OH) D level than diet / food consumption [15-18].

In a vegetarian diet with low protein intake and low amino acid sulphur will result in subclinical protein malnutrition. Finally, hyperhomocysteinemia will boost the sensitivity for getting the risk of cardiovascular disease [19,20].

A lower protein intake can be experienced by vegetarian consumers, so stress conditions will also increase the need for protein so that endogenous nitrogen supply will decrease. Then, the body will try to maintain methionine homeostasis so that hyperhomocysteinemia occurs and eventually the risk of cardiovascular disease increases [20]. Thus, homocysteine is an

amino acid containing sulphur, and the level of homocysteine will increase in case of body stress due to the body's efforts in maintaining methionine homeostasis. Homocysteine is an amino acid formed during demethylation methionine [21]. The level of homocysteine will increase in individuals with Inflammatory Bowel Disease [22] and vegetarian diet, but more normal homocysteine (tHcy / total homocysteine) total serum levels in a person consuming omnivore diet [12,23,24].

Consumers of the vegetarian diet are potentially at risk for vitamin B12 deficiency than the omnivore diet group because the source of vitamin B12 is found in animal products. Hyperhomocysteine due to vitamin B12 deficiency is a major independent biomarker of chronic disease [24,25]. The precautionary way to avoid vitamin B12 deficiency is to take supplements containing vitamin B12 regularly [26]. As it is known that the level of foliate plasma and vitamin B12 affect metabolism of homocysteine where they are cosubstrate and cofactor [27]. So the status of vitamin B should be considered in order not to occur hyperhomocysteine [28].

A study suggests that the mood improvements in the form of reduced stress and anxiety on vegetarian dietary consumption rather than omnivore diet, although the results are inconsistent, may be related to differences in research methodology [29]. There is an inconsistent result about the improvement of mood on the vegetarian diet. This is supported by the results of a study stating that vegetarian dieters have low levels of vitamin B12 [10,30,31] and omega 3 long chain / n-3 PUFA [10] but high folate [31]. Low levels of vitamin B12 (vitamin B12 found in animal protein) and low levels of n-3 PUFA in vegetarian diet are risk factors of non-communicable disease [10] and major depressive disorder [30]. The nutritional status of a vegetarian diet consumers will affect the neuronal function and synaptic plasticity of brain activity which relevant to the onset and maintenance function of mental disorders [30,32,33]. In Western countries also support this study that there is a link between the vegetarian diet and the increased risk of mental disorders, but there is no evidence that the vegetarian diet is the etiology of mental disorders [30].

How to reduce the unhealthy benefit of vegetarian diet?

The deficiency of protein intake due to diet of vegetarian diet is replaced by using soybean and bean (or plant protein dense product) products [34] and cereals [31]. In addition, it is necessary to take vitamin B12 supplements to avoid vitamin B12 deficiency [31]. Vitamin B12 is found in animal protein like meats or processed meats, although the consumption of meat, especially red meat and processed meats increase the risk of some types of cancer, so need to eliminate such foods. Actually a vegetarian diet is a strategy to reduce the risk of cancer [35] and effectively prevent metabolic syndrome than conventional therapy [36].

N-3 fatty acid deficiency is improved by eating fish such as tuna, mackerel, sardines, salmon and herring because these fish contain high levels of long chain omega-3s [37,38]. Omega 3 content in fish depends on the food consumed fish [39]. In addition to fish, low level of omega 3 is also found in cows but also depends on the food

consumed food consumed cows [40]. Vegetarian diet also consume drink coffee less than non vegetarian diet consumers [41,42]. Actually coffee has benefit as antioxidant [43], may boost immune

system [44] and reduce body weight [45,46]. Many results study has proved the benefit of coffee consumption in Figure 1.

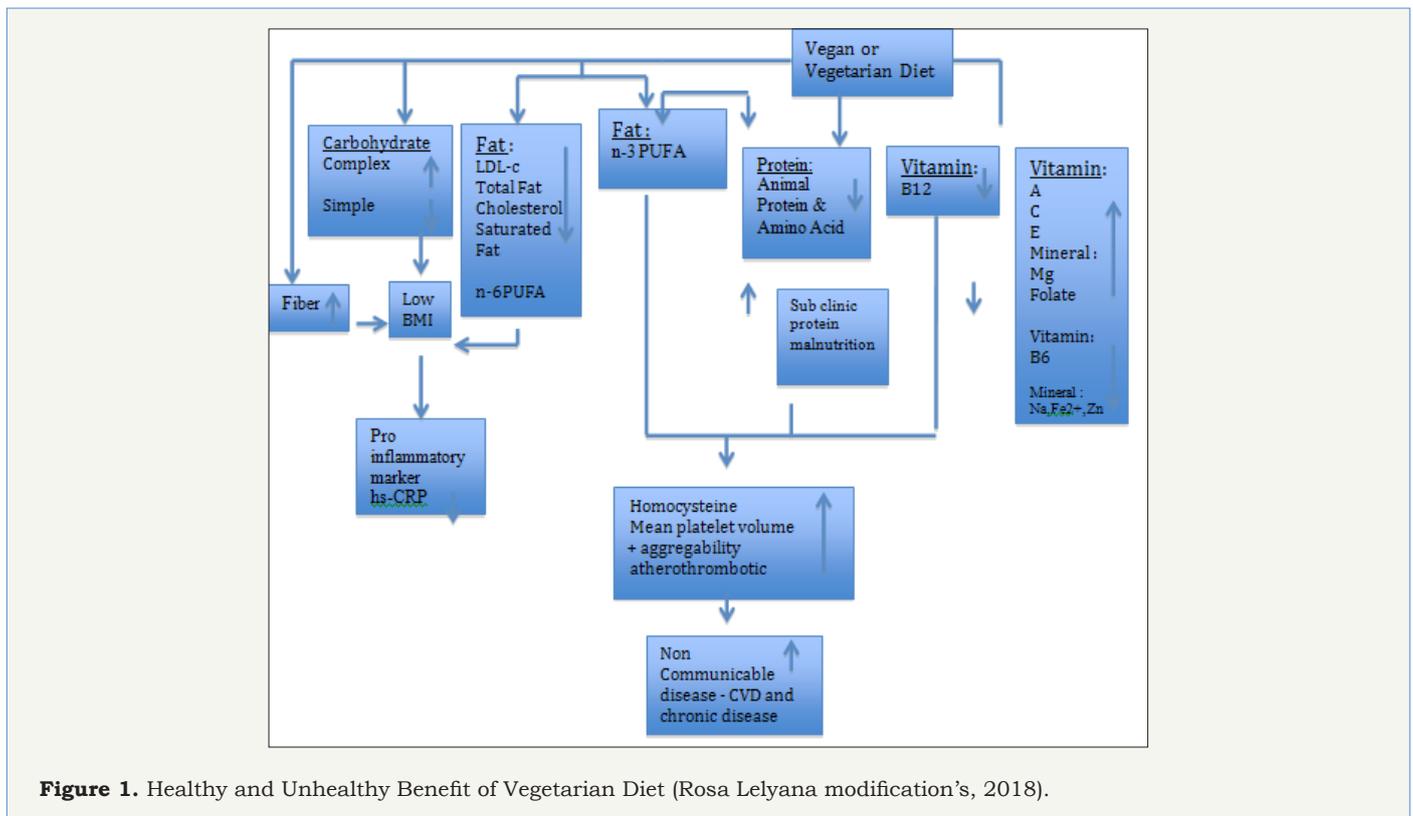


Figure 1. Healthy and Unhealthy Benefit of Vegetarian Diet (Rosa Lelyana modification's, 2018).

Conclusion

Many healthy benefits of vegetarian diets, but we have to give B12 supplementation for disease prevention of non communicable disease with vegetarian diet.

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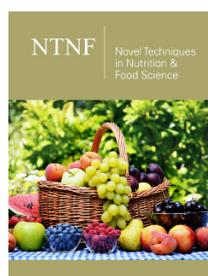
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