



Being Vegetarian: A Boon for Good Health

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Abstract

It is very correctly said by Albert Einstein that "Nothing will benefit human health and increase chances for survival of life on Earth as much as the evolution vegetarian diet". Human body is technically the most advanced and complicated machine. Like any other machine it also requires fuel to function. Food that is consumed by humans act as a necessary fuel and provides energy for the body to function in a normal manner. For a machine to function properly it requires right kind of fuel for which it is designed. If you put diesel into a petrol car it will not function properly rather it will give you lot of trouble. Likewise, incorrect food and eating habits can give rise to ailments.

The evaluation of the records regarding vegetarianism specifically focused on ancient Indian culture. The perspective of Jainism and Buddhism express that vegetarianism was supported entirely based on the concept of nonviolence against the animals that was a rule for both Jainism as well as Buddhism. As explained in the yogic thought, the concept of Saatkvik food [1] mainly defines the responsibility of the food to purify the human mind and maintain the calmness that increases the body potential and maintain the health factor of the human body. Saatkvik foods mainly involve ingredients that are cultivated within the country and mainly constitute vegetarian food.

The vegetarian food chart mainly involves heterogeneous composition that includes certain individual restrictions and certain biased practises as it imposes complete exclusion of all forms of foods that are extracted from animals. The particular diet has the characteristics of a healthy eating habit that include regular consumption of legumes, fruits and vegetables that includes nuts and grains, each of which are independently associated with positive health outcomes. Though specific diet patterns influence the control of chronic diseases such as the regular consumption of vegetarian food helps in reducing their saturation of blood level which includes a controlled level of cholesterol and blood rich in fibre, nutrients including ascorbic acid and manganese and copper. However, the consumption of vegetarian food can generate suboptimal consumption of specific nutrients that need to be taken into account while using the supplement. Additionally, there are non-dietary factors that contribute to the consumption of vegetarian food regularly which mainly involves physical activity and avoidance of practices such as alcohol consumption.

Keywords: Vegetarian Diet; Prudent Diet; Healthy Eating Index; Nutrients; Diseases; Lifestyle

Introduction

The human body is designed and evolved in a way to tolerate nothing but a vegetarian diet. Non vegetarian diet may be fulfilling to the taste buds but is not fulfilling to the body and the soul. The humans are vegetarian evolutionary as well as socially, human anatomy is the proof for this. The vegetarian animals has physiological structure of flat teeth compared to that of non-vegetarian animals who have sharp teeth (canines). Human beings have flat teeth, so the basic architecture of human teeth are not suited for a vegetarian diet. The nails of animals eating vegans are flat and blunt whereas the nails of the non-veg animals are lengthier and sharper to help them tear and cut flesh.

In vegan animals (herbivorous), the digestive architecture is lengthy so that rich, nutritious vegetarian food goes through the 3 to 5 meters [2] long intestine and stays for a longer time, the reason is that the toxic component in the vegan food is very less and it gets more time in intestine to absorb good vitamins and proteins of vegetarian food. Furthermore, Carnivores have to cut their food into smaller pieces and gulp it down and that's exactly what they do. In carnivorous animals food goes straight into the stomach bag without any change but in herbivores it already has started the digestive process right in the mouth and then it goes into stomach. This means that the stomach of a herbivore is expecting half-digested food most of the time. In the yogic system it is said that you should chew your food at least 32 times in your mouth as this will help 20 to 40% of the digestive process to take place in the mouth itself. This is getting half-digested food which becomes very easy on the stomach to digest and absorb the nutrients.

Mentioning about the effect of diet on the soul, the nature of the vegan animals are sober and are easy to handle whereas, the non-vegetarian animals are brutal and they are hard to handle. It is observed that non-vegetarian food gives more strength inducing power but if so was the scenario then how come a big animal such as elephant has more strength by intaking vegan food and Ox perform in farm the entire live long day by consuming only vegetarian leaves and grass. Whereas non-vegetarian animals (carnivorous) have been observed to pounce at their target, tear and eat it and following that rest and sleep. The only form of active work done by these animals is the rigorous search for flesh following which they prefer to sit back and relax. All these evidences, show that that the basic architecture of human body is not suited for a nonvegetarian

diet and that humans are vegetarian socially as well as anatomically.

The WHO national research agenda on Sustainable Development Goals (SDGs) has mentioned nutrition as one of the indicators to be focused to reach the targets and objectives by 2030 at global [3] and national level [4]. A healthy and balanced diet is essential for maintaining good health and nourishment. Various perspective and cross-sectional studies [5-7] have inspected the health status as well as vegetable diets which depicted an adequate outcome. It has been observed that the vegetarian people have not been identified in a proper estimation but the outcome of service, as well as polls, have identified a particular group of the population that it belongs to in the USA, Canada and the European Union from 1% to 10% [8]. It has also been observed that the vegan population maintains strong health and carries increased self-respect because they suffered least from the illness. It also depicted their concern about appropriate eating habits rather than the traditional diet. The nutritional value and quality of fruits and vegetables have slight differences in different areas because some of the vegetables have been cultivated in artificial fertilizers while the organic foods are cultivated on natural fertilizers [9]. It reveals that the people who consume total meat can also face benefits in maintaining proper health while comparing with the normal population. Therefore, it depicts that the dietary structure in the nutritional epidemiology contributes proper evidence that pursues a cautious diet which includes dash diet and Mediterranean diet which contains adequate improvement in the health quality which describes that the entire pattern is protective for health [10].

It has been observed from the report of the Healthy Eating Index (HEI), which depicts that the entire score of the vegan people was highest by maintaining cautious diets while the lowest score achieved by the non-vegetarian [11]. The biological impact of dietary patterns on the mortality rate may be depicted as a different outcome for women and men. Contradictorily, the Mediterranean diet achieved the proper ranking in the score where the vegetarians grabbed the best score before the omnivores, pesco-vegetarians and the semi-vegetarians [12]. Furthermore, Murthy complex analysis will analyse the probable impact modification through sex for specific nutrients or food that may illustrate the sex-specific techniques. It is suggested to ensure the proper balance of nutritional value from a broad range of foods, specifically for vulnerable

segments including children, old aged people and the woman who is pregnant or lactating [14].

It is suggested that the vegan diet is insufficient to maintain the effective value of nutrients which involve iron, protein, calcium and vitamin B12. Several articles have claimed that vegetarians have more knowledge about nutrient values than non-vegetarians and they maintain an increased BMI level while controlling the low level of cholesterol and proper balance of blood pressure. In the current scenario, inappropriate maintenance of lifestyle developed a major threat for illness because the individuals established in an increased status in socio-economic level have experienced more crucial illness in their health than the vegetarians. They can maintain their blood pressure and control obesity, cholesterol and several other diseases that mainly occur due to the consumption of fat. In this context, it can be observed that vegan people have a better chance of living a healthy life. The non-vegetarians could not achieve that limit of living because they experience some life-threatening illness. Also, it is not evident that vegetarians are safe from those diseases because most vegan people do not maintain a proper diet and the maintenance of an appropriate diet has a great impact on a Healthy lifestyle and long-living.

The habit of food diet needs to change from avoiding fast food and maintaining all the nutritional value while intaking food. It is important to include fruits and vegetables in a diet by which it can be well balanced and maintain the proper nutritional value through its consumption [15]. It has also been observed that vegan people experience limited suffering from chronic diseases, diabetes, defects in the colon and hypertension [16].

Role of vegetarian diet in various diseases

Obesity

It has been observed from different research data that animal products include more fat than vegetarian products. The vegan diet is maintaining the continuity in weight loss and most of the population have experienced obesity due to non-veg food instead of vegetables and fruits [17]. According to an estimation [18,19] provided by the Food and Agriculture Organisation, nearly 1.2 billion people across the world have experienced obesity due to processed food in the 21st century. There is an adequate relationship between the adoption of a vegetarian diet and decreased body weight in adolescents and adults. It is recommended by other research [20] that the higher chances of overweight and causes of obesity have impacted

the omnivorous people irrespective of the other diet groups. Moreover, the people who intake total meat have an increased BMI and are impacted by different sedentary and smoking addictions as well.

Hypertension

The chances of hypertension also tended to affect the non-vegetarian population instead of the vegetarian population. Academic research [21] has depicted that there is a difference in the values for systolic blood pressure and diastolic blood pressure among vegetarians as well as omnivorous people. After evaluating different confounding variables, the researchers signified that most of the indifferences in the blood pressure level was detectable in the comparison of BMI level among the vegan and non-vegan population.

Diabetes

Most of the vegan population intake an increased amount of carbohydrates and a limited amount of fat have developed affordable protection against diabetes because it increases the insulin sensitivity in cells [22]. It is observed that the disease of type 2 diabetes appeared in the non-veg populations including fish eaters, meat-eaters. While vegetarians and semi-vegetarians have a limited amount of risk of attacking diabetes. Another research [23] has recommended an interrelationship between the intriguing capability of vegetables and grains with the cellular sensitivity of insulin. Therefore, the authors have considerably decreased the prevalence of diabetes in vegan people instead of non-vegetarians [24]. Finally, evaluating the adequate value of the nutritional composition and the quality of a vegan diet has depicted that the chances of type 2 diabetes are involved in traditional diets.

Heart diseases

The chances of heart diseases have also maximised for the non-vegetarians than the vegetarians because of the decreased amount of mean plasma in the total cholesterol concentration. A current medical report [25,26] illustrated that the Lacto ovo-vegetarians and vegetarian diets are interlinked with decreasing the LDL-C and TC which recommended the impact of lipid-lowering in the vegetarian diet is based on the appropriate portfolio of the dietary elements that are consumed by the people [27]. There is a guideline regulated by the National Cholesterol Education Program Adult Treatment Panel III [28], which suggested that the increasing consumption of vegetables help to control the cholesterol limit and

also restrict the chances of heart disease. The National Institutes of Health has also defined another guideline in their research which includes that nearly half a million adults who are aged between 50 to 70 years have experienced a critical risk of mortality and heart diseases because of consuming a total meat diet and processed food [29]. Additionally, vegan people have also avoided the addiction to alcohol and tobacco which increased their physical activity.

Cancers

After analysing different strategies of the dietary plan for vegetarians as well as non-vegetarian people, it has been observed that non-vegetarian food consumption increased the risk of gastrointestinal cancer and some female-specific cancers [30]. Some of the medical studies [31] have recommended that colon cancer and prostate cancers were appropriately harmful to omnivore people instead of the vegan. Although it is not static for breast cancer because the high level of vegetable intake decreased the risk of breast cancer after post-menopause [32].

Lung diseases

There are several lung diseases including asthma, tuberculosis, COPD which restrict the chances of affecting the body for the vegetarian diet instead of the non-vegetarian diet. It is common because the weight loss and improved functionality of the organs help the body to restrict these diseases while the association among COPD [33] and diet was explored and described that the vegetables and fruits have protected lungs from impairing functionality and COPD [34]. The protective measure of fibre on the quality of lung is apparently lacking in antioxidants components and the anti-inflammatory fibre. Therefore, the nutritional value is adequate consideration for the patients affected by COPD [35-37] and they have been influenced to eat a nutritional diet that provides an effect in improving the lifestyle. Nutritional supplementation and dietary counselling are signified for improving the lifestyle of COPD patients which recognises the obstructive pulmonary disease for malnutrition [38]. It is necessary to restrict the association of mortality for the function-

ality of the pulmonary organ. Therefore, the patients affected with COPD [39-41] have an increased chance of hospitalised compared with the other lung diseases.

Metabolic syndrome

The metabolic syndrome has also affected the non-vegetarian people instead of vegetarian and semi-vegetarian people. It has been demonstrated that the reasonable diet of vegetarian people has also helped in controlling the metabolic syndrome [38] because a controlled trial has depicted and improved the efficiency of the vegetarian diet in a comparison between the weight loss for postmenopausal women and the conventional weight loss diet. The association between menstrual disorder and low consumption of energy [42] were represented in research which figured out that the female athletes who intake low amounts of energy deal with an irregular menstrual cycle [43]. Contradictorily, the women consuming increased amounts of energy significantly experience regular cycles for their menstruation.

Mental disorders

There are some medical studies [44] that have investigated that vegetarian people have a proper mood for solving conflicts compared to non-vegetarian people. Mental disorders or food security has increased its risk by demonstrating the conflict. It has been observed that a strict vegetable diet has not impacted mood in a negative manner. But the decrease in animal food consumption provided benefits for mood while the domains of improved mood were not static in the studies.

Mortality and morbidity

There are different medical articles [45] that depicted the association of processed meat intake with the higher chance of mortality. However, semi-vegetarian and vegetarian diets are gaining popularity because of the decreased chances of mortality. There is a relationship between mortality and vegetarian diet structure which provide a mixed result that concerned morbidity for vegetarians.

<p>1. Cardiovascular disease</p>	<p>The physiological structure of individuals consuming vegetarian food is healthy compared to individuals eating non-vegetarian food. The analysis of the body of vegetarians indicates that the level of total along with LDL cholesterol is quite low which decreases the blood pressure to a moderate level. Additionally, the plasma lipids are lower in vegetarians compared to that of non-vegetarians which helps in controlling obesity that maintains the BMI of the vegan.</p> <p>Davey GK, Spencer EA, Appleby PN, Allen NE, Knox KH, Key TJ. EPIC-Oxford: lifestyle characteristics and nutrient intakes in a cohort of 33,883 meat-eaters and 31,546 non meat-eaters in the UK. <i>Public Health Nutr</i> 2003;6:259–69 [46].</p>
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<p>2. Cancer</p>	<p>The vegan diet involves increased consumption of legumes including vegetables having high proteins and mineral values including vitamin C compared to that of a non-veg diet. The consumption of nutritious foods and healthy minerals protects the body from cancer, specifically, the foods that have lycopene such as tomatoes helps in avoiding prostate cancer.</p> <p>World Cancer Research Fund. Food, nutrition, physical activity, and the prevention of cancer: a global perspective. Washington, DC: American Institute for Cancer Research, 2007 [47].</p>
<p>3. Bone Health</p>	<p>The study of the articles published in the last two decades indicates that there exists no evident difference between the bone mineral density of vegetarians and non-vegetarians. The study also indicated that the trabecular, as well as cortical bone, are almost the same. However, the human bones can be strengthened by regular consumption of potassium, magnesium, vitamin D and fruits and vegetables.</p> <p>Lanham-New SA. Importance of calcium, vitamin D and vitamin K for osteoporosis prevention and treatment. Proc Nutr Soc 2008;67:163-76 [48].</p>
<p>4. Iron Absorption</p>	<p>Research has indicated that the absorption of heme iron is more compared to non-heme irons in plant foods. Contradictory, the chances of iron deficiency anaemia and the inappropriate concentration of haemoglobin is seen between the vegetarians and the non-vegetarians. However, the weekends have the option of consuming food rich in vitamin C to improve the capability of the body to absorb non-heme iron.</p> <p>Craig WJ. Iron status of vegetarians. Am J Clin Nutr 1994;59(suppl): 1233S-7S [49].</p>
<p>5. Zinc Absorption</p>	<p>The evaluation of the body composition of non-vegans and regions indicate that the vegan has a comparatively lower zinc intake. However, the difference in the consumption of zinc has no difference between the vegan and non-vegan individuals in terms of immunocompetency which maintains the cytotoxic activity of the natural killer cells.</p> <p>Haddad EH, Berk LS, Kettering JD, Hubbard RW, Peters WR. Dietary intake and biochemical, hematologic, and immune status of vegans compared with nonvegetarians. Am J Clin Nutr 1999;70(suppl): 586S-93S [50].</p>

Studies have shown that the risk cardiovascular diseases, cancers and overall mortality is significantly lower in people on vegetarian diet as compared to Mediterranean and pescatarian diet [51].

Role of nutrients

The regular debate between vegetarian and non-vegetarians indicates that the controlled consumption of animal protein generates deficiency of the consumption of nutrients such as vitamin B12, calcium, iron and protein to some extent. However, consideration of dietary pattern analysis indicates that it is one of the complementary methods that help in evaluating the influence of the overall diet. The analysis of the dietary pattern indicates that the approach of eating single food does not have any complex interaction between the consumption of nutrients and the consumption of food. The prudent diet based on vegan food mainly characterises the consumption of plant protein which have low SFA value as well as high dietary fibres that combine to decrease. The consumption of refined carbohydrates. Rogerson., *et al.* express that the com-

parison of the weekend and meat-eaters implies the reduced level of monounsaturated along with saturated fats ($p < 0.01$), level of fibre ($p < 0.001$), copper ($p < 0.01$), ascorbic acid ($p < 0.05$), cholesterol ($p < 0.001$) and folic acid along with manganese ($p < 0.01$). Vegans indicated that the level of leukocytes is also low along with the platelet count and the urea however the concentration of aluminium is quite high in vegans [52.53].

Carbohydrates: As discussed by Deriemaeker., *et al.* the consumption of mono, as well as disaccharides by human males, is more compared to the humans within the vegetarian diet that is competitively more than the traditional meat consumption. Kanter., *et al.* authenticated the situation by explaining that the increased consumption of carbohydrates in the human diet has a positive influence over endurance in the human body [54].

Protein: It is believed that the decreased creatinine level in vegetarian athlete’s needs to be increased as it helps in strengthening the muscles which are necessary for practising athletic activities. Rogerson., *et al.* explain that creatinine has a strong impact on the

physical capability of athletes, specifically those who follow a vegan diet because the intake of creatine supplement helps in overcoming the deficit of the nutrient in the body. Despite the research, the exact benefits of a vegan diet have not been considered as a priority while focusing on power sports which require regular endurance in day to day life. Besides, Pilis., *et al.* confirm that vegans often generate a deficiency of protein energy [55].

Fats: The vegan diet has lower N3 fatty acid compared to the non-veg diet and higher n-6 fatty acids that involve linoleic acid. However, there is a process to convert the linolenic acid extracted from plants to DHA as well as EPA *in vivo* condition however the rate of conversion is much lower compared to the natural process. The vegan diet is quite restricted which decreases the total intake of energy as well as the fat profile which involves the direct intake of cholesterol, saturated fat as well as polyunsaturated fat along dietary intake and protein which is entirely different from the non-veg diet. Since the consumption of fat is low in vegan diets, the serum level is also low in terms of DHA as well as EPA that directly involved the level of n-3 erythrocyte phospholipids [56]. It is necessary to include foods such as Olive Oil, supplements for vegan DHA and flaxseed which helps the individual, specifically the patient shifting to a low-fat vegan diet who needs to improve the AHEI score by increasing the consumption of fruits and vegetables.

Vitamins and minerals: The consumption of vegetarian food on regular basis increases the risk of generating the deficiency of minerals such as amino acid, zinc, iron and calcium to such extent along with vitamin B12 and vitamin D. As observed by Shenoy, *et al.* the decreased consumption of vitamin B12 within the vegetarian disturbs the plasma level that directly elevates the concentration of homocysteine which is a medical condition that directly indicates the onset of cardiovascular disease [57]. Simultaneously, the adoption of a vegetarian diet specifically the female athletes causes the chances of anaemia where the deficiency of iron disturbs the capacity of the body [58]. The American Dietetic Association and dieticians of Canada expressed that it is necessary to increase the intake of iron among vegans as well as meat-eaters [59]. The increase in the intake of Fiber as well as phytic acid is also necessary as it helps in controlling the level of iron and zinc in the body.

Vitamin B12: Vitamin B12 is one of the important nutrients required by the human body in an optimum amount however is only found in food extracted from animals. The deficiency of the specific vitamin in the human body generates pernicious anaemia which

creates megaloblastic anaemia among the central nervous system along with demyelination which can prove to be fatal. Studies have indicated that there exists a decreased level of vitamin B12 along with higher homocysteine level within the vegetarian compared to the meat-eaters [60]. It is necessary for vegans to have supplements for vitamin B12 that might include 45 soya materials in breakfast [61].

Vitamin D: Vitamin D is mainly available in oily fish which is a restricted item for vegans that generates a risk of deficiency among individuals. Specifically, the weekends living in northern latitudes have limited exposure to sunlight which is another substitute for vitamin D. The decreased level of 25 hydroxyvitamin D is majorly observed in the vegans compared to the meat-eaters [62,63]. Additionally, the minimum level of vitamin D among the patients can generate the threat of cancer and CVD along with T2DM [64-66].

Iron: The iron deficiency occurs due to the inappropriate consumption of iron in the diet that involves consumption of ascorbic acid along with carotenes which help in increasing the adoption of non-heme iron. The consumption of iron within the week would not be the same as that of meat-eaters because of the reduced consumption of non-heme iron. The evaluation of the components of iron including the HEI 2010 as well as the MDS expresses that the regions can focus on consuming legumes as well as vegetables which can somewhat help in overcoming the deficiency of iron in the human body. Clarys expressed that the consumption of vegetables plays an important role in females consuming vegetarian food compared to non-vegetarian women specifically in terms of maintaining iron balance.

Sodium: Sodium consumption in the vegetarian diet is also low compared to that of the meat-eaters. Even though the magnitude of the sodium level is not similar, the reports indicate that the vegans need to take a supplement of sodium whereas the meat-eaters do not require the supplement.

Calcium: Appleby expressed that the chances of fracture are more in vegans compared to meat-eaters because of the compromised level of calcium in the body. However, the vegans have nearly 525MG per day consumption of calcium on average which does not exhibit any fracture risk. It has been observed that the mean calcium intake by vegan (738 SD = 456 mg/day) is likely above that of vegan consumption by EPIC-Oxford (603 SD = 232 mg/day) [67,68].

Conclusion

The overall evaluation of the food items that are included in the vegetarian diet I mainly extracted from plants which involve fruit crops, fruits, mushrooms, nuts, oilseeds and cereals. It has been established that the food items extracted from plant origin have benefits to human health as it helps in reducing certain medical conditions which can increase the life expectancy of humans. The pattern of the vegetarian diet helps in controlling diseases such as diabetes mellitus, hypertension and ischaemic heart disease. The controversy regarding the vegan diet mainly indicates the reduction of certain nutrients in the food chart. However, it is yet under discussion whether the benefits experienced by the vegetarians can be considered as a counter for the absence of animal diet within the lifestyle of vegans. The non-dietary factors such as exercise have a strong influence over the health status of the vegans who support vegetarianism. Along with the consumption of plant fibres, the avoidance of smoking and consumption of alcohol helps in maintaining the quality of life.

According to the yogic life, diet is one of the important components that influence the lifestyle of a human. There is a saying, "Jaisa Ann Waisa Man, Jaisa Pani Waise Vanni".

According to the saying, the quality of food as well as the kind of food consumed by individual influences physical as well as mental capability. The individual having a proper diet is following the principles of eating which allows the individual to maintain their mental as well as physical capability. The individual can recognise the inappropriate act among the eating habit which can be observed in the action as well as the behaviour of the individual. The above-mentioned saying explains the entire concept as well as the importance of a vegan diet.

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