

**Letter to Editor****Nutrition and Health between Vegetarians and Non-Vegetarians****Key words:** Health diets, vegetarianism, non-communicable chronic diseases**Dear Editor:**

As a 35 years-long lacto-ovo-vegetarian, I have been always asked by others why my family converted and what health benefits had been. To answer them, the comparison about nutrition and health between vegetarians and non-vegetarians was summarized here.

There are different types of vegetarian depending on their different food components namely, semi-vegetarians (vegetables with dairy products, eggs and fish), lacto-ovo-vegetarians (with milk and eggs), pescatarians (with fish) and vegans or “Jay” (no milk and eggs) (1). Generally, vegetarian foods have no meat, poultry, seafood, or any animal products including eggs, milk, honey, etc. Vegetarians consume more vegetables, fruits and grains. Compared to meat foods, plant-based foods contain more healthy compounds including vitamins, minerals, dietary fiber and essential non-nutrients. Plant-based diets have been widely known and popular especially among people with health concern. A numerous research articles have reported the health benefits of vegetarian diet in the prevention and healing of non-communicable chronic diseases (NCDs) including obesity, cardiovascular diseases, type-2 diabetes, some cancer types and hypertension (1,2).

By the evidence-based review, the American Dietetic Association (ADA) and Dietitians of Canada (DC) concluded that appropriately planned vegetarian diets, including vegetarian and vegan diets, are nutritionally adequate and may be beneficial to the prevention and treatment of certain diseases (3, 4). The vegetarian diet was found to lower risk of death from ischemic heart disease. As compared to the non-vegetarians, vegetarians had about 32% lower cholesterol levels and blood pressures, which reduce the risk of cardiovascular disease (CVD) and certain types of NCDs (4, 5). Hypercholesterolemia is a major risk factor of CVDs including coronary heart disease and

ischemic stroke, as well as peripheral arterial disease (6, 7).

The well-planned plant diets are confirmed to be appropriate for persons from birth to adults and aging stages as well as sportsman. However, statistically, vegetarians are not always healthier than non-vegetarians. The variable difference of dietary components among vegetarian individuals can lead to the unbalanced diets. The deficiency of essential nutrients such as vitamin B<sub>12</sub> and iron causes mild and severe anemia as well as some essential amino acids (lysine and methionine.) and fatty acids (omega-3 and -6), among vegetarians and vegans (8-11). To have adequate and balanced intake of the essentials, vegetarians should be educated about sources of specific nutrients, food ingredients and right cooking for their healthy life.

However, a vegetarian diet has both advantages and disadvantages. Its healthful benefit has been found to reduce the risk of heart disease, obesity, hypertension, type 2 diabetes and some types of cancer, leading to a longer life expectancy. Adversely, the higher prevalence of mild hyperhomocysteinemia in vegetarians may decrease the preventive effect of vegetarian nutrition in cardiovascular disease. Therefore, vitamin B<sub>12</sub> deficiency may reduce the risk of CVD prevention, vegetarians should be advised to consume vitamin B<sub>12</sub> supplement, as well as fermented-plant foods and dried purple laver (nori) which contain high vitamin B<sub>12</sub> and its analogs (12, 13).

Most non-vegetarians are not used to and do not like such veggie foods due to the lack of meaty flavor and taste. There are many vegetarian meat alternatives (tofu, soy products, tempeh, beans) and mocking meat products made from a mixture of konjac, shitake mushroom and soy meal in the market, so the main vegetarian benefits and disadvantages are related to health rather than taste. (13)

Not only for the health benefits, has vegetarianism also emphasized the compassion to all lives. Most of Thai and Taiwanese vegetarians are “Jay” vegans which belong to and have faith in Mahayana Buddhism, They are more restricted than general vegetarians, since they don’t consume meat, poultry, seafood, or any animal products including eggs, milk, honey, etc. Besides, Jay vegetarians also prohibit 5 kinds of pungent vegetables including garlic, onion, single-head garlic, chive and tobacco. Spiritually, they have to follow basic Buddhist precepts by thinking, speaking and doing right behaviors especially during the 10-days Jay Vegetarian Festival during September October. “Jay” actually comes from a Chinese word, Jain” (no killing) which saves a great the number of animals.

In conclusion, there are different types of vegetarians according to a variability of food components. Compared to non-vegetarians, they mainly consume plant foods containing more essential compounds and non-nutrients. The health benefits of vegetarian diet in the prevention of NCDs have been reported. ADA and DC concluded that appropriately planned vegetarian diets are nutritionally adequate and may be beneficial to the prevention and treatment of certain diseases including CVDs, atherosclerosis and hypertension. However, the variable difference of dietary components among vegetarian individuals can lead to the unbalanced diets. To have adequate and balanced intake of the essentials, vitamin B<sub>12</sub> and omega-3 fatty acids, vegetarians should need more education about sources of specific nutrients for their healthy life.

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