“Fleshing Out” the Benefits of Adopting a Vegetarian Diet

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Dietary and lifestyle changes remain the cornerstone of heart disease prevention. It has been estimated that >80% of cardiovascular events can be prevented with dietary and lifestyle modifications. Vegetarian diets are one approach to achieving a healthy dietary pattern, low in saturated and trans-fats and high in fiber and antioxidants. While other heart healthy dietary strategies such as low-carbohydrate, low-glycaemic index and Mediterranean diets have been shown to reduce incidence of cardiovascular disease, recent meta-analyses have found that these diets do not consistently reduce low density lipoprotein-cholesterol (LDL-C), a major therapeutic blood lipid target to improve cardiovascular health. This lack of consistent effect represents a possible major barrier to recommending these diets to dyslipidemic individuals. The inconsistent lipid benefit with these dietary strategies relate to the higher consumption of saturated fats and an incomplete avoidance of red meat intake, both of which have been implicated in cardiovascular disease risk. Therefore, a complete avoidance of red meat consumption such as the vegetarian diet may represent a dietary strategy to which cardiovascular risk can be reduced through improving blood lipids.

The cardinal feature of vegetarian diets is the absence of animal products, but there are those who claim to follow a vegetarian diet that include some forms of animal flesh. The variation in actual practice, thus has led to subtypes of vegetarianism: (1) pesco-vegetarians, who omit all animal products other than fish; (2) lacto-ovo-vegetarians, who omit all animal products but include eggs and dairy products; (3) lacto-vegetarians, who omit all animal products but dairy products; (4) ovo-vegetarian, which omits all animal products but eggs; and (5) vegans, who omit all animal products including honey. Although there is variation in the practice of vegetarian diets, the common underlying practice amongst them all is the avoidance of consuming red meat. This avoidance of red meat consumption may confer important blood lipid effects that other dietary strategies have not been able to produce.

To provide high-quality evidence to assess the above relationship, Wang et al systematically review and meta-analyze the effects of vegetarian diets on blood lipids from randomized controlled trials to help assess the impact of vegetarian diets on cardiovascular risk, unconfounded by lifestyle habits. The 10 trials assessed the effects of vegetarian diets on blood lipids over an average of 24 weeks. The main finding is that vegetarian diets, compared with omnivorous diets, improve therapeutic targets for cardiovascular disease risk reduction including low-density lipoprotein cholesterol (mean difference [MD] = –0.34 mmol/L [95% CI: –0.57, –0.11]; P < 0.001) and non-high-density lipoprotein cholesterol (HDL-C) (MD = –0.30 mmol/L [95% CI: –0.50, –0.10]; P = 0.04). There were also relative reductions in HDL-C (MD = –0.10 mmol/L [95% CI: –0.14, –0.06]; P < 0.001), total cholesterol (MD = –0.36 mmol/L [95% CI: –0.55, –0.17]; P < 0.001), with no effect on triglycerides (MD = –0.04 mmol/L [95% CI: –0.05, 0.13]; P = 0.40). The effect on low-density lipoprotein cholesterol alone would be expected to reduce coronary heart disease risk by ≈22% in someone with average lipid levels. Importantly, the meta-analysis also showed a large and important relative reduction in body weight (MD = –2.88 kg [95% CI: –3.56, –2.20]; P < 0.001). Thus it appears that vegetarian diets compared to omnivorous diets may improve body weight and blood lipids (except for HDL-C and TG), representing a dietary strategy that can improve cardiovascular risk through improvements on dyslipidemia.

One potential concern noted in this meta-analysis is that HDL-C was significantly reduced on vegetarian diets, which may offset the observed health benefits. The observed effect, however, must be interpreted in context of the other findings. Although there was a significant reduction on HDL-C, other
vegetarian diet are also healthy because of the reciprocal increases in the intakes other healthy foods.18 In a national survey lead by the United States Department of Agriculture (USDA), the overall dietary pattern of self-defined “vegetarians” compared to non-vegetarians were generally found to be healthier.19 Compared with non-vegetarians, vegetarians eat diets lower in total fat, saturated fat, and cholesterol and higher in fiber.19 They also consume more grains, legumes, vegetables (green leafy and yellow), fruit, and wine.19 The health benefits seen with vegetarian diets are likely related to synergy among many healthy plant foods. Nevertheless, it is possible to eat a vegan diet that is highly processed, rich in fat and hydrogenated oils and low in fiber; this sort of diet will not provide health benefits solely because it is devoid of animal flesh. Other dietary patterns such as Mediterranean diets, plant-based diets, or the DASH diet, have been consistently associated with good health and also combine a number of healthy and highly-nutritious minimally processed foods, including of some of the same ones found in vegetarian diets.1,2 These shared characteristics underscore the importance of viewing diets as more than a defining characteristic of avoidance or overconsumption of single nutrients or food groups.

Beyond effects on cardiovascular health, plant-based diets may be kinder to the environment, if harvested and supplied responsibly. The environmental and economic impact of food choice must be considered in light of air and water pollution, loss of biodiversity, and destruction of ecosystems. A plant-based diet reduces the demand for raised livestock, which is a major stress on ecosystems and on the planet as whole.20 Adopting a plant-based diet will not eliminate these problems altogether, especially in the face of a growing global population, but switching to more locally produced, plant-based foods will reduce the burden of agriculture and fossil fuel used for transportation. In a comparative study between nonvegetarians and vegetarian diet adopters living in California, vegetarian diets still demonstrated needs for natural resources for cultivation, but compared to nonvegetarians, these diets required 2.9 times less water, 2.5 times less primary energy, 13 times less fertilizer, and 1.4 times less pesticides.21 Thus, a switch to a more sustainable diet primarily based on plant foods represents a way to ensure both environmental sustainability and human health.

In conclusion, other established dietary strategies such as the low-carbohydrate, low-glycaemic index and Mediterranean diets have been shown to improve cardiometabolic risk because of the combination of healthy foods eaten together, but effects of these diets on serum lipid risk factors for CVD is less clear.4 While the vegetarian diet is similar in dietary composition to the Mediterranean diet, it also includes the complete avoidance of red meat and...
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reciprocal increases in other healthy foods. This difference in dietary practice may explain the improvement in blood lipids (except for HDL-C) that is not seen previously in these dietary strategies. Therefore, vegetarian diets may represent an alternative and sustainable dietary strategy to which individuals with dyslipidemia can follow to improve cardiovascular risk.

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References

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