



Letter to the Editor

Letter to the editor concerning: Stroke and diets: A review

Dear Editor,

It is with great interest that we read the recently published review entitled “Stroke and Diets” in the *Tzu Chi Medical Journal* [1]. The authors provide a concise and up-to-date discussion on the role of different dietary patterns in the prevention of stroke. Lin *et al.* concluded that “vegetarian (meatless) diets have a significant impact on major risk factors of stroke” and highlighted their importance in both stroke prevention and management.

We agree that plant-based diets are beneficial with regard to stroke risk factor management (including hypertension, obesity, and atrial fibrillation [2]), yet we also believe that it is of paramount importance to differentiate between different plant-based eating patterns in greater detail. In particular, the lacto-ovo-vegetarian diet (which includes dairy products such as milk, cheese, and yoghurt) and the vegan diet (defined by the absence of all animal foods) may have different effects on several established stroke risk factors.

The Adventist Health Study-2 cited by Lin revealed that lacto-ovo-vegetarians had a significantly higher body mass index ($25.7 \pm 5.1 \text{ kg/m}^2$) than those consuming a vegan diet ($23.6 \pm 4.4 \text{ kg/m}^2$) [3]. Diabetes, another major stroke risk factor, was also found more frequently in vegetarians than in vegans [Figure 1] [3].

One important difference between both dietary patterns is that vegan diets exclude cheese, a food high in (saturated) fat and sodium. Excessive intake of both of these nutrients has been frequently associated with an increased stroke risk [4].

The higher cheese (and subsequently sodium) intake in vegetarians also served as one of several potential explanations why vegetarians were shown to have higher rates of hemorrhagic and total stroke than omnivores in the EPIC-Oxford study [5]. Of note, this study has been often criticized for combining vegetarians and vegans in the same group and a recent cohort study by Chiu *et al.* revealed opposite finding [6].

A Taiwanese vegetarian diet was associated with a lower risk of ischemic and hemorrhagic strokes [6]. Yet, the low number of daily dairy servings in this examined Taiwanese cohort (compared to European or American vegetarian cohorts)

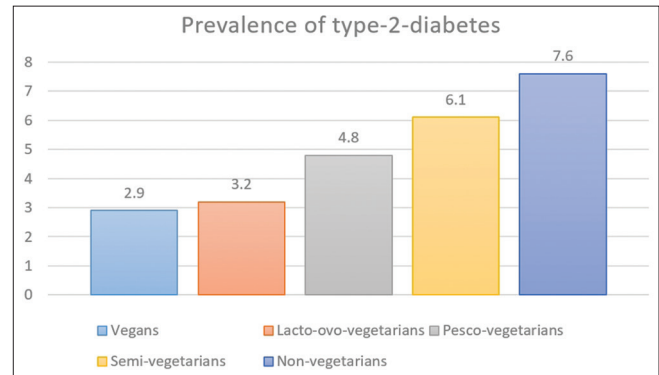


Figure 1: Prevalence of type-2-diabetes (in %) among different dietary patterns in the Adventist Health Study-2

warrants special consideration. Taiwanese vegetarians had a median daily intake of only 0.2 dairy servings (1 serving of dairy was defined as 8 g protein) per day, whereas EPIC-Oxford vegetarians consumed significantly more: 232.3 (± 207.3) ml dairy milk and 26.8 (± 25.4) g dairy cheese per day [5].

This raises the question whether the comparably low dairy intake is potentially a unique feature to the Taiwanese vegetarian diet? Is it not conceivable that this substantial difference (and the implied reduction in daily saturated fat and sodium intake) could mediate some of the health effects of the Taiwanese vegetarian diet? Finally, it would also be interesting whether the authors are aware of different stroke risk profiles of Taiwanese vegetarians (consuming few dairy products) and Taiwanese vegans (avoiding all dairy products)?

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Conflicts of interest

There are no conflicts of interest.

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