Proceedings of the Nutrition Society (2024), **83 (OCE1)**, E171 doi:10.1017/S0029665124001897

47th Annual Scientific Meeting of the Nutrition Society of Australia and Nutrition Society of New Zealand, 28 November – 1 December 2023, Nutrition & Wellbeing in Oceania

Cardiovascular disease risk in Australians following plant-based dietary patterns compared to regular meat eaters

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The adoption of dietary patterns emphasising higher intakes of plant foods and lower intakes of animal foods (plant-based diets, PBDs), continue to rise worldwide. PBDs have been associated with a lower risk of cardiovascular morbidity and mortality as well as major risk factors such as overweight/obesity and type 2 diabetes. Evidence regarding the dietary profile and disease risk associated with various PBDs in comparison to traditional meat-eating diets are scarce within the Australian population. The aim of this study is to investigate the 5-year and 10-year risk of developing cardiovascular disease (CVD) among Australians habitually following various PBDs compared to a regular meat diet (RMD). The Plant-based Diet (PBD) Study is a cross-sectional study consisting of healthy adults between aged 30-75 years from the Hunter Region (NSW) between 2021-2023. A validated FFQ was used to assess eligibility and categorise individuals who were habitually consuming one of five dietary patterns for at least 6 months into the following groups: vegan (nil animal products), lacto-vegetarian (LOV, including eggs and dairy), pesco-vegetarian (PV, including seafood with/without dairy and eggs), semi-vegetarian (SV, minimal consumption of animal products) or RMDs (including animal meat daily or multiple times/day)[(1)]. 5-year and 10-year CVD risk was quantified using the Framingham Risk Equation[(2)] and the Australian Absolute CVD risk calculator, respectively. CVD risk and other quantitative measures was compared using One-way ANOVA or Kruskal Wallis, and Chi-square or Fisher's Exact for qualitative data. Directed acyclic graphs displayed confounding variables and mediators and a regression model was used to adjust for these. A total of 240 participants (median age 55(16), 77.5% female) with 48 participants in each group showed a significant difference in predicted 5-year risk of CVD ($P<0.05$), however 10-year risk did not significantly differ across groups. 5-year CVD risk was significantly lower in the vegan group (1%) compared to the RMD, SV, PV, and LOV diet groups (all 2%). In comparison to a vegan diet, crude association showed those consuming a RMD had a 2.4% (95% CI 0.7, 4.1) higher 5-year risk of developing CVD, followed by 1.7% in LOV (95% CI 0.6, 2.9), 1.8% in PV (95% CI 0.5, 3), and 1.1% in SV (95% CI 0.2, 2.1). Significance was lost after adjusting for confounders such as age, gender, smoking status, alcohol intake, physical activity levels and BMI. This is the first study to purposefully sample Australians habitually following PBD, presenting novel population-based evidence for CVD risk. These findings suggest more restrictive PBDs such as vegan diets when compared to RMD may lead to lower CVD risk, however population-based longitudinal studies primary investigating the development of CVDs in the context of PBDs are warranted.

Keywords: plant-based diets; vegetarian; vegan; dietary patterns

Ethics Declaration

Yes

Financial Support

This work was partially supported by the following grants: pilot grant from the College of Health, Medicine &Well-being at the University of Newcastle (grant no. 10-32804), Bridging Scholarship and an Early Career small grant for statistical support from the Hunter Medical Research Institute (grant no. 2101041), and Hunter Medical Research Institute Philanthropy funds (grant no. 2200517).

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