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Plant-based dietary patterns and cardiovascular disease risk in Australians: the Plant-Based Diet Cohort study protocol

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Plant-based diets (PBD) emphasise higher intake of plant foods and lower intakes of animal foods and have been associated with reduced cardiovascular morbidity/mortality⁽¹⁾ and lower cardiovascular disease (CVD) risk factors including overweight/obesity⁽²⁾ and type 2 diabetes (T2D).⁽³⁾ Several regulatory bodies and health authorities (EAT Lancet Commission on Food, Planet & Health; FAO of the UN; WHO; Academy of Nutrition & Dietetics, and American Institute for Cancer Research) support PBD for optimizing health, environmental sustainability and lowering chronic disease risk.^(4,5) Evidence is limited regarding the dietary profile, diet quality and nutritional adequacy of PBD including their impact on CVD risk compared to traditional meat-eating diets among the Australian population. The Plant-based Diet Cohort is a cross-sectional cohort study that will recruit 240 adults from the Hunter region (NSW) without known CVD and habitually consuming one of the following dietary patterns: vegan (no animal flesh/animal products), lacto-ovo vegetarian (dairy and/or eggs only), pesco-vegetarian (fish/seafood only), semi-vegetarian (minimal animal flesh) or regular meat eater. The primary aim is to investigate the 5- and 10-year risk of developing CVD using the Australian Absolute CVD Risk Calculator⁽⁶⁾ and the Framingham Risk Equation.⁽⁷⁾ Secondary aims include investigating and summarising the dietary profile, diet quality and nutritional adequacy of PBD compared to a regular meat-eating diet. Participants will be enrolled in the cohort where collection of questionnaires (medical history, demographics, physical activity), blood samples (biomarkers), physical measures (anthropometry, blood pressure, body composition, bone density), dietary intake (Australian Eating Survey FFQ, diet history) will be conducted. Blood samples will also be stored long-term for future discoveries of biomarkers of PBD and chronic disease. The study is approved by the Human Research Ethics Committee, University of Newcastle (H-2020-0195) and has commenced recruitment and data collection. One-way ANOVA or Kruskal Wallis will be used for comparing CVD risk scores, dietary intake and cardiometabolic parameters across groups. Tukey's HSD and False Discovery Rate (FDR) will be employed post hoc for testing pairwise differences and FDR will control for multiple comparisons. Linear regression and propensity score matching will be used to account for covariates that may be predicting consumption of a particular dietary pattern. The Plant-based Diet Cohort study is an Australian-first population-based study examining the dietary profile, health status and CVD risk of individuals consuming PBDs. This study is strengthened by the purposeful recruitment methodology which is guided by detailed dietary criterion to capture true habits of dietary pattern, which is not logistically and financially feasible to examine via an RCT. Outcomes of this study will provide a database for studying PBDs, aid in the design of future longitudinal studies and inform current Australian dietary guidelines which are lagging regarding guidance towards sustainable dietary patterns.

References

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