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Dietary intakes and nutritional adequacy of Australians consuming plant-based diets compared to a regular meat-eating diet

G. Austin^{1,2}, J. Ferguson^{1,2,3}, S. Eslick^{1,4}, C. Oldmeadow⁵, L. Wood¹ and M. Garg^{1,4}

¹*School of Biomedical Sciences & Pharmacy, University of Newcastle, University of Newcastle, Callaghan, New South Wales, Australia*

²*Food and Nutrition Research Program, Hunter Medical Research Institute, New Lambton, New South Wales, Australia*

³*School of Health Sciences, University of Newcastle, Callaghan, New South Wales, Australia*

⁴*Macquarie Medical School, Macquarie University, Macquarie Park, New South Wales, Australia*

⁵*Clinical Research Design, Information Technology and Statistical Support Unit, Hunter Medical Research Institute, New Lambton, New South Wales, Australia*

Despite the healthful nature of plant-based diets (PBDs) there is potential for nutrient inadequacies⁽¹⁾. This study aimed to compare dietary intakes and nutritional adequacy in Australians following plant-based diets compared a regular meat-eating diet (RME) in a cross-sectional study of adults (n = 240) aged 30–75yrs. Participants were habitually consuming dietary patterns for ≥ 6 months; vegan, lacto-vegetarian, pesco-vegetarian, semi-vegetarian or RME (n = 48 per group). Dietary intake was assessed using a validated food frequency questionnaire and dietitian-administered diet histories. Multivariable regression was used to adjust for potential lifestyle and demographic confounders. Compared to RMEs, vegans and lacto-ovo vegetarians had significantly lower dietary intakes of protein (percentage energy intake, EN%), saturated fat, trans fat, cholesterol, vitamin B₁₂, iodine, riboflavin, niacin, sodium, and long chain omega-3 polyunsaturated fatty acids (LCn-3PUFA), and higher carbohydrate (EN%), dietary fibre, vitamin E, folate, magnesium, iron, and n-6PUFA, whereas, pesco-vegetarians and semi-vegetarians had intermediate intakes. Individuals adhering to PBD consumed significantly more vegetables, fruit (vegan only), legumes/nuts, and less discretionary choices compared to RMEs. All dietary patterns met adequate intake for protein, exceeded for fat, were below for carbohydrate (EN%) and had adequate serves of fruit and vegetables, but not grains. Including plant-based alternatives, vegans, lacto-ovo vegetarians, and semi-vegetarians had inadequate serves of ‘meat/poultry/eggs/beans/nuts’, and semi-vegetarians and RMEs had inadequate serves of dairy. Vegans and lacto-vegetarians had nutritional inadequacies in vitamin B₁₂, LCn-3PUFA, iodine, and in addition calcium among vegans, pesco-vegetarians in iodine, and semi-vegetarians and RMEs in LCn-3PUFA. PBDs, specifically vegans and lacto-ovo vegetarians, while significantly higher in beneficial nutrients and wholefood groups than RMEs, may lead to nutritional inadequacies if not planned appropriately.

References

1. Melina V, Craig W & Levin S (2016) *J Acad Nutr Diet* **116**(12), 1970–1980.