



*The 48th Annual Scientific Meeting of the Nutrition Society of Australia, 3-6 December 2024*

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

G. Austin<sup>1,2</sup>, J. Ferguson<sup>1,2,3</sup>, S. Eslick<sup>1,4</sup>, C. Oldmeadow<sup>5</sup>, L. Wood<sup>1</sup> and M. Garg<sup>1,4</sup>

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

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

<sup>3</sup>*School of Health Sciences, University of Newcastle, Callaghan, New South Wales, Australia*

<sup>4</sup>*Macquarie Medical School, Macquarie University, Macquarie Park, New South Wales, Australia*

<sup>5</sup>*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<sup>(1)</sup>. 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 B<sub>12</sub>, 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 B<sub>12</sub>, 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.