

46th Annual Scientific Meeting of the Nutrition Society of Australia, 29 November – 2 December 2022, Sustainable nutrition for a healthy life

Greater intake of fibre from fruit and vegetables is linked to lower odds of high perceived stress across the adult lifespan

S. Radavelli-Bagatini¹, M. Sim^{1,2}, J. Rees¹, L.C. Blekkenhorst¹, R. Woodman³, D.J. Magliano^{4,5}, J.E. Shaw^{5,6}, R.M. Daly⁷, J.M. Hodgson^{1,2} and J.R. Lewis^{1,2,8}

¹Nutrition & Health Innovation Research Institute, School of Medical and Health Sciences, Edith Cowan University, Joondalup, WA 6027, Australia,

²Medical School, University of Western Australia, Perth, WA 6009, Australia,

³Flinders Centre for Epidemiology and Biostatistics, Flinders University, Adelaide, SA 5042, Australia,

⁴Diabetes and Population Health, Baker Heart and Diabetes Institute, Melbourne, Vic. 3004, Australia,

⁵School of Public Health and Preventive Medicine, Monash University, Melbourne, Vic. 3004, Australia,

⁶Clinical Diabetes and Epidemiology, Baker Heart and Diabetes Institute, Melbourne, Vic. 3004, Australia,

⁷Institute for Physical Activity and Nutrition, School of Exercise and Nutrition Science, Deakin University, Geelong, Vic. 3220, Australia and

⁸Centre for Kidney Research, Children's Hospital at Westmead, School of Public Health, Sydney Medical School, University of Sydney, Sydney, NSW 2006, Australia

We previously reported that greater intake of fruit and vegetables (FV) was linked to lower perceived stress,⁽¹⁾ but the constituents responsible for this relationship remain uncertain. Several constituents such as flavonoids, fibre and vitamins in FV are thought to play a beneficial role,⁽²⁾ but this requires further investigation. Dietary fibre may improve mental health through modulating the gut microbiome. Due to the link of FV with stress and mental health, it is possible that fibre from FV could also be beneficial for stress control. The aim of this cross-sectional study was to investigate whether FV fibre and total dietary fibre intakes were associated with perceived stress in a population-based cohort of men and women aged ≥ 25 years from the Australian Diabetes, Obesity and Lifestyle (AusDiab) Study. Dietary intake was assessed using a validated Food Frequency Questionnaire ($n = 8640$). Perceived stress was evaluated using a validated Perceived Stress Questionnaire (scores ranged from 0–1, lowest to highest). High perceived stress cut-offs were obtained from the highest quartile of the perceived stress score for each sex.⁽³⁾ Multivariable-adjusted (for age, sex, BMI [body mass index], energy intake, relationship status, physical activity, level of education, SEIFA [Socio-economical index for areas], smoking status, diabetes and prevalence of cardiovascular disease) logistic regression was performed to investigate the associations. The mean age of participants (50.1% females) was 47.8 (SD = 15) years. Participants in the highest (11.9 [SD = 2.9] g) versus lowest quartile of FV fibre (3.3 [SD = 0.9] g), had a significantly lower odds (32–34%) of having high perceived stress. This relationship was similar for fibre from fruit and vegetables, separately, and when soluble and insoluble fibre from FV were analysed separately. There were no associations for fibre from non-FV foods, cereals, or discretionary foods, as well as resistant starch from these food groups, with stress. In Australian adults, intake of higher FV fibre was associated with lower perceived stress, independent of lifestyle factors such as physical activity, BMI and energy intake. Further studies are needed to determine whether the fibre from FV is superior to fibre from other foods.

References

1. Radavelli-Bagatini S, Blekkenhorst LC, Sim M, *et al.* (2021) *Clin Nutr* **40**, 2860–2867.
2. Godos J, Currenti W, Angelino D, *et al.* (2020) *Antioxidants* **9**, 346.
3. Radavelli-Bagatini S, Sim M, Blekkenhorst LC, *et al.* (2022) *Eur J Nutr* **61**, 2929–2938.