

Do Dietary Patterns During Early Young Adulthood Predict the Risks of Metabolic Syndrome and Insulin Resistance During Later Young Adulthood? A Longitudinal Study

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Objectives: Whether early young adulthood dietary patterns predict the risk of metabolic syndrome (MetS) and diabetes-related endpoints prior to middle age remains unknown. We examined the prospective associations of dietary patterns in early young adulthood with MetS and diabetes-related endpoints at later young adulthood.

Methods: We used data of young adults from a long running birth cohort in Australia. Western and prudent dietary patterns were derived using principal component analysis at the 21-year follow-up from dietary data obtained by a food frequency questionnaire. After 9-years, fasting blood samples were collected from each participant and their blood biomarkers, anthropometric and blood pressure were measured. MetS, insulin resistance, and prediabetes were based on clinical cut-offs;

increased β -cell function and insulin resistance were based on upper quartiles. Log-binomial models were used to estimate diet-related risks of each outcome adjusting for potential confounders.

Results: Greater adherence to the Western pattern predicted higher risks of MetS (RR: 2.32; 95% CI: 1.34, 4.00), increased insulin resistance (1.69; 1.07, 2.65), high β -cell function (1.60; 1.10, 2.31) and less likelihood of increased insulin sensitivity (0.57; 0.39, 0.84) in adjusted models. Conversely, adhering more to the prudent pattern predicted lower risks of MetS (RR: 0.47; 95%CI: 0.29, 0.75), increased insulin resistance (0.57; 0.39, 0.82), high β -cell function (0.69; 0.50, 0.93) and more likelihood of increased insulin sensitivity (1.84; 1.30, 2.60).

Conclusions: This prospective study of young adults indicates greater adherence to unhealthy Western diet predicted higher risks of MetS and increased insulin resistance, whereas a healthy prudent diet predicted lower risks. Optimising diets to improve later cardiometabolic health needs to occur in early adulthood.

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