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Pulse-rich diets and risk of cardiovascular diseases: findings from the UK Biobank prospective study

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Cardiovascular diseases (CVDs), including ischemic heart diseases (IHD) and stroke, are a leading cause of death globally and significantly impact quality of life⁽¹⁾. Current guidance suggests increasing the consumption of pulses rich in fibre and iron, to reduce CVD risk⁽²⁾. However, longterm observational studies investigating pulse consumption and CVD incidence are limited⁽³⁾. In the current analysis, the UK Biobank, a prospective cohort study of over 500,000 UK adults was used to investigate the association between pulse consumption and CVD incidence⁽⁴⁾.

A total of 119,914 (males: 51,540 and females: 68,374) participants with \geq two 24-hour dietary recalls, not pregnant and free from CVD at baseline were included. Total CVD was defined as IHD and cerebrovascular diseases. Multivariable-adjusted Cox proportional hazard regression models were used to estimate the incidence of CVD by pulse consumption, reported as hazard ratios (HR) and 95% confidence intervals (CI). Pulse consumption was modelled as a categorical variable with non-consumers (0g/day, n = 76,531) and 3 tertiles (T) of pulse intake T1 (1-20.4g/day, n = 14,785); T2 (20.5-40g/day, n = 14,015); T3 (40.5-360g/day, n = 14,583). The fully adjusted model was controlled for sex, age, dietary energy, region, ethnicity, smoking status, physical activity level, education, income, employment, body mass index (BMI), alcohol intake, supplement use, processed red meat intake, sodium intake and trans-fatty acids intake, family history of stroke, heart disease and diabetes, insulin use, blood pressure or cholesterol-lowering medication use. The analysis was performed in STATA 18.

The cohort had a mean \pm SD age of 55.9 ± 7.8 years, BMI of 26.6 ± 4.5 kg/m² and pulse intake of 13.2 ± 24.3 g/day. There were 8,937 incidences of CVD after a mean follow-up of 12.4 years. Compared with non-consumers, pulse intake was not significantly associated with the incidence of total CVD, T1 (HR: 0.95, CI: 0.89–1.01), T2 (HR: 0.98, CI: 0.92–1.05), T3 (HR: 0.97; CI: 0.91–1.04).

In conclusion, pulse-rich diets were not significantly associated with a lower total CVD incidence in middle-aged adults participating in the UK Biobank compared to non-consumers. Further work will model the replacement of red and processed meat with pulses on CVD incidence and mortality.

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