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Abstract

Dose–Response Relationships of Five Dietary Patterns with the Risk of Cancer: Findings from the UK Biobank Study †

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Abstract: Diet is an important risk factor for cancer. Several approaches for assessing the nutritional quality of diets have been developed and are associated with cancer risk. However, the evidence is limited for some dietary patterns. This study investigated the associations between five dietary patterns and incident all-cause cancer. This study included 159,631 adults from the UK Biobank cohort who were free from cancer at baseline. All-cause cancer was derived from cancer registry linkage. Dietary intake was evaluated according to five dietary pattern scores: the energy-adjusted Dietary Inflammatory Index (E-DII), the Recommended Food Score (RFS), the Healthy Diet Indicator (HDI), the Mediterranean Diet Score (MDS), and the Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND). All dietary scores were categorised into tertiles, and the unhealthiest tertile for each score was used as the reference group. Cox regression was performed to investigate associations between each of the five dietary scores and all-cause cancer incidence, adjusting for sociodemographic (age, sex, ethnicity, deprivation, and income) and lifestyle (smoking status, total sedentary time, and total physical activity) factors, adiposity (BMI), and multimorbidity. After a median follow-up of 7.8 (IQR: 7.3; 10.6) years, 11,978 adults developed cancer. The RFS (HR 0.96 [95% CI 0.94; 0.98]), HDI (HR 0.96 [95% CI 0.94; 0.99]), and E-DII (HR 0.97 [95% CI 0.95; 0.99]) were inversely associated with the risk of all-cause cancer. Compared with the lowest tertile, the risk of all-cause cancer was lower for adults in the healthiest tertile for the RFS (HR 0.92 [95% CI 0.88; 0.96]), HDI (HR 0.93 [95% CI 0.89; 0.97]), and E-DII (HR 0.94 [95% CI 0.90; 0.99]). No associations were found for the MDS and MIND. A lower risk of all-cause cancer was observed with greater adherence to three of the five investigated dietary patterns (RFS, HDI, and E-DII) independent of adiposity and sociodemographic and lifestyle factors.

Keywords: cancer; diet; cohort; dietary patterns

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data are available upon request from the UK Biobank admin group.

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