

Epidemiology

Nutrition, lifestyle and colorectal cancer incidence: a prospective investigation of 10 998 vegetarians and non-vegetarians in the United Kingdom

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In a cohort of 10 998 men and women, 95 incident cases of colorectal cancer were recorded after 17 years.

Risk increased in association with smoking, alcohol, and white bread consumption, and decreased with frequent consumption of fruit. The relative risk in vegetarians compared with nonvegetarians was 0.85 (95% CI: 0.55-1.32).

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Health Risks Associated with Meat Consumption: Review of Epidemiological Studies

Recent evidence from large prospective US and European cohort studies and from meta-analyses of epidemiological studies indicates that the long-term consumption of increasing amounts of red meat and particularly of processed meat is associated with an increased risk of total mortality, cardiovascular disease, colorectal cancer and type 2 diabetes, in both men and women. The association persists after inclusion of known confounding factors, such as age, race, BMI, history, smoking, blood pressure, lipids, physical activity and multiple nutritional parameters in multivariate analysis. The association has not always been noted with red meat, and it has been absent with white meat. There is evidence of several mechanisms for the observed adverse effects that might be involved, however, their individual role is not defined at present. It is concluded that recommendations for the consumption of unprocessed red meat and particularly of processed red meat should be more restrictive than existing recommendations. Restrictive recommendations should not be applied to subjects above about 70 years of age, as the studies quoted herein did not examine this age group, and the inclusion of sufficient protein supply (e. g. in the form of meat) is particularly important in the elderly.

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Processed and Unprocessed Red Meat and Risk of Colorectal Cancer: Analysis by Tumor Location and Modification by Time

Although the association between red meat consumption and colorectal cancer (CRC) is well established, the association across subsites of the colon and rectum remains uncertain, as does time of consumption in relation to cancer development. As these relationships are key for understanding the pathogenesis of CRC, they were examined in two large cohorts with repeated dietary measures over time, the Nurses' Health Study (n = 87,108 women, 1980-2010) and Health Professionals Follow-up Study (n = 47,389 men, 1986-2010). Cox proportional hazards regression models generated hazard ratios (HRs) and 95% confidence intervals (CIs), which were pooled by random-effects meta-analysis. In combined cohorts, there were 2,731 CRC cases (1,151 proximal colon, 816 distal colon, and 589 rectum). In pooled analyses, processed red meat was positively associated with CRC risk (per 1 serving/day increase: HR = 1.15, 95% CI: 1.01-1.32; P for trend 0.03) and particularly with distal colon cancer (per 1 serving/day increase; HR = 1.36; 95% CI: 1.09-1.69; P for trend 0.006). Recent consumption of processed meat (within the past 4 years) was not associated with distal cancer. Unprocessed red meat was inversely associated with risk of distal colon cancer and a weak non-significant positive association between unprocessed red meat and proximal cancer was observed (per 1 serving/day increase: distal HR = 0.75; 95% CI: 0.68-0.82; P for trend <0.001; proximal HR = 1.14, 95% CI: 0.92-1.40; P for trend 0.22). Thus, in these two large cohorts of US health professionals, processed meat intake was positively associated with risk of CRC, particularly distal cancer, with little evidence that higher intake of unprocessed red meat substantially increased risk of CRC. Future studies, particularly those with sufficient sample size to assess associations by subsites across the colon are needed to confirm these findings and elucidate potentially distinct mechanisms underlying the relationship between processed meat and subtypes of unprocessed red meat with CRC.

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