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Meat consumption is associated with esophageal cancer risk in a meat- and cancer-histological-type dependent manner

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Abstract

Background: We conducted a systematic review and meta-analysis of meat intake and esophageal cancer risk, with subgroup analyses based on meat type and histological type of cancer.

Aims: The purpose of this study was to investigate the association between meat intake and risk of esophageal cancer.

Methods: We searched MEDLINE, EMBASE and Cochrane Library (April 2013) for cohort and case-control studies that assessed meat intake and esophageal cancer risk. Random-effect or fixed-effect models were used to pool relative risks (RRs) from individual studies with heterogeneity and publication bias analyses carried out. Seven cohort and 28 case-control studies were included.

Results: The summary RRs for esophageal cancer for the highest versus lowest consumption categories were 1.19 (95 % confidence interval [CI] 0.98-1.46) for total meat, 1.55 (95 % CI 1.22-1.96) for red meat, 1.33 (95 % CI 1.04-1.69) for processed meat, 0.72 (95 % CI 0.60-0.86) for white meat, 0.83 (95 % CI 0.72-0.96) for poultry, and 0.95 (95 % CI 0.76-1.19) for fish. When striated by histological subtype, positive associations were seen among esophageal squamous cell carcinoma and red meat, white meat and poultry, and esophageal adenocarcinoma with total meat and processed meat.

Conclusions: Meat consumption is associated with esophageal cancer risk, which depends on meat type and histological type of esophageal cancer. High intake of red meat and low intake of poultry are associated with an increased risk of esophageal squamous cell carcinoma. High meat intake, especially processed meat, is likely to increase esophageal adenocarcinoma risk. And fish consumption may not be associated with incidence of esophageal cancer.

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