

Fruit and vegetable intake and head and neck cancer in a large United States prospective cohort study.

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Head and neck cancer is the sixth leading cause of cancer related mortality worldwide, resulting in more than 350,000 deaths annually. The main causes of head and neck cancer are thought to be alcohol and tobacco use. Diet may also play an etiological role, with fruit and vegetables protecting against disease incidence, and consumption of other foods such as meat increasing risk. However, few prospective studies have examined the role of diet in head and neck cancer. Therefore, we prospectively examined the association between fruit and vegetable intake and head and neck cancer risk in 490,802 participants of the NIH-AARP Diet and Health cohort study. We used Cox proportional hazard models adjusted for potential confounders, including categories of alcohol intake, smoking dose and current/former/never smoking status, body mass index, physical activity, education, and continuous variables for age and total energy intake. We report hazard ratios (HR) and 95% confidence intervals per serving per 1000 calories. During 2,193,751 person years of follow-up from 1995/1996-2000, 787 participants were diagnosed with head and neck cancer. We found an inverse association between combined fruit and vegetable intake and head and neck cancer risk (HR: 0.94, 0.89-0.99). In models mutually adjusted for fruit and vegetable intake, a significant protective association was observed for vegetables (HR: 0.89, 0.82-0.97) but not fruits (HR: 0.98, 0.91-1.06). The associations were similar in men and women. When we examined anatomic sub-sites of head and neck cancer, the association between vegetable consumption and cancer was significant for the oral cavity (319 cases, HR: 0.84, 0.73-0.95) and suggestive inverse associations were seen for cancers of the oro-hypopharynx (142 cases, HR: 0.90, 0.74-1.09) and larynx (279 cases, HR: 0.91, 0.79-1.05). We found no significant associations between fruit intake and individual head and neck cancer sub-sites. We further examined fruit and vegetable consumption by classifying foods into 13 separate botanical groups. Leguminosae (dried beans, string beans, and peas, HR: 0.66, 0.50-0.87), rosaceae (apples, peach, nectarines, plums, pears, and strawberries, HR: 0.62, 0.48-0.80), and umbelliferae (carrots, 0.54, 0.31-0.93) were among those botanical groups associated with decreased risk. Our results suggest that higher fruit and vegetable consumption is associated with reduced risk of head and neck cancer.