

Re: Fruit and Vegetable Intake and Overall Cancer Risk in the European Prospective Investigation Into Cancer and Nutrition

Boffetta et al. (1) reported in the Journal a weak but statistically significant association between fruit and vegetable intake and the overall cancer risk by analyzing data from the European Prospective Investigation into Cancer and Nutrition (EPIC) cohort. The reduced cancer risk associated with an increased daily intake of 200 g of fruits and vegetables combined was 3% (95% confidence intervals = 1% to 4%) only. The large health campaigns organized in several countries using TV commercials or other public media to encourage the population to eat five daily portions of fruits and vegetables at first seem disproportionate for such a small benefit. However, in our opinion, the associations that are limited to overall cancer risk are not sufficient to provide adequate information on the benefit of increased daily intake of fruits and vegetables for cancer prevention. Such associations should be assessed in the context of other EPIC results.

Despite the weak association between fruit and vegetable intake and overall cancer risk, a strong association could be observed for some specific cancer sites, in particular among smokers. For breast, prostate, renal, and pancreatic cancers, previous EPIC results showed no association between fruit and vegetable intake and overall cancer risk (2–5). For epithelial ovarian, esophageal, and stomach cancers, the association was small or limited to some food items or histological subtypes of the tumors (6,7). For lung, upper aerodigestive, and colon cancers, the association was strong with the following results: 1) lung cancer risk was reduced by 40% in the highest vs the lowest quintile of fruit intake (8); the association between fruit and reduced cancer risk was particularly strong in Northern Europe, where the overall median intake of fruits and vegetables is lower than in other parts of Europe; 2) lung cancer risk was reduced in current smokers by 10% and 22%, per 100 g increase in

daily intake of fruits and vegetables, respectively (9); 3) upper aerodigestive tract cancer risk was reduced by 9%, per 80 g increase in daily intake of fruits and vegetables combined (10); and 4) colon cancer risk was reduced by 24% in the highest vs the lowest quintile of fruits and vegetables combined (11). Because these cancers represent approximately 30% of cancers in men and 20% of cancers in women, the association between nutrition and overall cancer risk is diluted.

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Notes

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