

# Head and neck cancers in young adults are more likely to be a result of inherited factors

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An article published online today in the *International Journal of Epidemiology* pools data from 25 case-control studies and conducts separate analyses to show that head and neck cancers (HNC) in young adults are more likely to be as a result of inherited factors, rather than lifestyle factors such as smoking or drinking alcohol.

Approximately 550,000 new cases of HNC are diagnosed worldwide annually, with an increased incidence in young adults (YA) also being reported. In particular, reports indicate an increase in tumours affecting the tongue and oropharynx among young adults in Europe, the United States, India, and China.

Dr Tatiana Natasha Toporcov and colleagues pooled data from 25 studies from the International Head and Neck Cancer Epidemiology (INHANCE) consortium to compare the role of major risk factors and family history in HNC for YA (45 years of age or younger) and [older adults](#) (over 45 years of age). Participants were surveyed about their history of cigarette smoking, alcohol drinking, and diet, as well as family history of [cancer](#). In total, there were 2,010 cases and 4,042 controls in YA, and 17,700 cases and 22,704 controls in older adults.

The attributable fraction (an estimate of the proportion of cases which could be avoided if the exposures were eliminated) for smoking on the risk of HNC was 20% in young women, 49% in older women, 46% in young men, and 64% in older men. The attributable fraction for [drinking alcohol](#) on the risk of HNC was 5% in young women, 20% in older

women, 22% in young men, and 50% in older men. Eating a diet rich in fruits and vegetables was shown to be inversely associated with the risk of HNC in both age groups.

Family history of any type of cancer was directly associated with HNC risk only among the older group, but a family history of [early-onset](#) cancer was associated with HNC risk only in YA. The attributable fraction for [family history](#) of early onset cancer on the risk of HNC was 23% in young adults and 2% in older adults.

Dr Toporcov says: "To our knowledge, this is the largest study to evaluate the role of the major risk factors for HNC in young adults as well as to compare risks in younger and older patients. The large sample size allowed us to elucidate any differences in the role of risk factors in HNC in YA according to age group, sex and cancer sub sites.

"Although they were less likely to be drinkers and/or smokers, alcohol consumption was a risk factor for HNC in YA. However, a stronger association with heavy drinking was observed for the older group. Our results also indicate that the inverse association with fruit and vegetable intake is similar among young and older populations. YA were more likely to have been diagnosed with oral and oropharynx cancer than older adults. Also, early onset cancer in the family was associated with HNC risk only among YA.

"Our results support public health efforts to decrease exposure to major risk factors for HNC in the population regardless of age. However, investigations of the role of other [risk factors](#), such as human papilloma virus and inherited characteristics, on HNC in the younger age group are warranted."

## **Key messages:**

- Cigarette smoking and alcohol drinking were associated with a risk of HNC in younger adults (age 45 or less) and older adults (over 45), although in younger adults the association was weaker, probably due to shorter exposure.
- The protective effects of a diet rich in fruits and vegetables on HNC was consistent across younger and older people
- Family history of early onset cancers was associated with an increased risk of HNC in [young adults](#), but not older ones

**More information:** 'Risk factors for head and neck cancer in young adults: A pooled analysis in the INHANCE consortium' by Tatiana Natasha Toporcov, Victor Wünsch Filho, et al. *International Journal of Epidemiology*, DOI: [10.1093/ije/dyu225](https://doi.org/10.1093/ije/dyu225) , [ije.oxfordjournals.org/content.../1/22/ije.dyu255.full](http://ije.oxfordjournals.org/content/.../1/22/ije.dyu255.full)

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