

Latest global data on cancer burden and alcohol consumption: More than 740 000 new cases of cancer in 2020 attributed to alcohol

Questions and Answers (Q&A)

A new study led by scientists from the International Agency for Research on Cancer (IARC), published in *The Lancet Oncology*,¹ provides the latest data on the global cancer burden associated with alcohol consumption.

What are the key results of this study?

The scientists estimated that more than 740 000 new cases of cancer in 2020 were attributable to alcohol consumption. This equates to about 4% of the total cancer burden globally.

Men accounted for about three quarters of the total alcohol-attributable cancer cases. The cancer types with the largest numbers of alcohol-attributable cases were oesophageal cancer, liver cancer, and female breast cancer.

When the researchers quantified the proportion of new cancer cases associated with various levels of alcohol consumption, risky and heavy drinking patterns – the equivalent of more than two alcoholic drinks per day (20 grams or more of alcohol per day) – represented the largest burden of alcohol-attributable cancers. However, light to moderate drinking (up to two alcoholic drinks per day) represented 14% of the total alcohol-attributable cases and accounted for more than 100 000 new cancer cases worldwide.

What methodology was used to obtain these estimates?

The scientists estimated the impact of alcohol consumption on the incidence of cancer worldwide in 2020 by using population attributable fractions (PAFs) to calculate how many new cancer cases were attributable to alcohol consumption, or how many could have been avoided if no one in the population consumed alcohol. The PAFs were estimated by combining data on alcohol consumption, the increased risk of developing cancer due to alcohol consumption, and estimates of cancer incidence.

What are the most common cancer types associated with consumption of alcohol?

Alcohol consumption increases the risk of cancers at seven sites: the oral cavity, pharynx, larynx, oesophagus (squamous cell carcinoma), colorectum, liver (hepatocellular carcinoma), and female breast.

¹ Rumgay H, Shield K, Charvat H, Ferrari P, Sornpaisarn B, Obot I, et al. Global burden of cancer in 2020 attributable to alcohol consumption: a population-based study. *Lancet Oncol*. Published online 14 July 2021. [https://doi.org/10.1016/S1470-2045\(21\)00279-5](https://doi.org/10.1016/S1470-2045(21)00279-5)

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The cancer types with the largest numbers of new cases in 2020 associated with alcohol consumption were oesophageal cancer (190 000 cases), liver cancer (155 000 cases), and female breast cancer (98 000 cases).

Which regions of the world are the most affected by cancers caused by alcohol consumption?

The proportions of new cancer cases attributable to alcohol consumption were lowest in Northern Africa and Western Asia (less than 1%) in both sexes, and highest in men in Eastern Asia (9%) and Central and Eastern Europe (8%), and in women in Central and Eastern Europe (3%), Australia and New Zealand (3%), and Western Europe (3%).

Why are these regions more affected?

The results reflect patterns of alcohol consumption per capita. The proportions of new cancer cases attributable to alcohol consumption were lowest in countries in Northern Africa and Western Asia, where religious-based policies have ensured that population alcohol consumption remains low and lifetime abstention rates remain high.

Alcohol consumption in Central and Eastern Europe has in the past been higher than that in other world regions but has decreased in recent years, whereas increases in alcohol consumption are predicted in some countries in Eastern Asia.

In countries with a higher Human Development Index, such as Australia and New Zealand and countries in Western Europe, increases in alcohol consumption have been reported in women, and breast cancer was the main driver of the high incidence rates of alcohol-attributable cancers in women in these regions.

Where can I find maps and graphs to illustrate the impact of alcohol consumption on cancer?

The results of this study can be explored by country and world region in the [Cancers Attributable to Alcohol visualization tool](#), which is part of the Cancer Causes subsite of the IARC Global Cancer Observatory. The database has user-friendly facilities to produce maps and explore visualizations of the global burden of cancer attributable to alcohol consumption by sex, cancer site, and country or world region.

How does alcohol consumption increase the risk of developing cancer?

There are several reasons why alcohol consumption can cause cancer. It is likely that different types of cancer are caused in different ways, for example:

- Ethanol and acetaldehyde: alcohol (as ethanol) is converted in our bodies into a chemical called acetaldehyde. Both ethanol and acetaldehyde are cancer-causing substances.

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- Liver cirrhosis: alcohol damages the cells of the liver and can cause a disease called liver cirrhosis. People with cirrhosis are more likely to develop liver cancer.
- Hormones: alcohol can increase the levels of some hormones, such as estrogen. High levels of estrogen increase the risk of breast cancer.

Where can I find more information on this topic?

More information about alcohol and cancer, and about actions that individuals can take to reduce their risk of cancer, can be found in the [European Code Against Cancer](#).

To find out more about the burden of alcohol-related cancer in Europe, read the fact sheet "[Alcohol and cancer in the WHO European Region: An appeal for better prevention \(2020\)](#)".

Read more about [World Health Organization initiatives related to alcohol](#).

Is there any difference in the risk of cancer by type of alcoholic beverage consumed?

Although this study did not present differences in the burden of cancer by type of alcoholic beverage consumed, the evidence suggests that cancer risk increases with consumption of any type of alcohol, whether it is beer, wine, or spirits. The most important measure is the total volume of alcohol or ethanol consumed.

Is there any difference in the risk of cancer with heavy episodic drinking or binge drinking?

This study did not cover differences in drinking patterns or intensity. The existing evidence shows that there is little difference in cancer risk whether consumption is spread out over several occasions throughout the week or the same amount of alcohol is consumed all at once. Again, the most important measure is the total volume of alcohol or ethanol consumed.

For more information, please contact

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The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer and the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships. If you wish your name to be removed from our press release emailing list, please write to com@iarc.fr.