

Alcohol and Smoking – Combined Use Increases the Health Risks

Alcohol and tobacco are harmful to health

The use of the legal recreational drugs alcohol and tobacco is widespread, although it is associated with many negative health effects and social consequences.⁹ Both substances independently cause serious health problems. They can be addictive and are a significant burden to society.⁴ Alcohol and tobacco are often used combined and reinforce each other's harmful effects.

How do the health risks change with simultaneous consumption?

Smoking is associated with serious health effects. It damages almost every organ in the human body. Alcohol plays a pivotal role in the development of many diseases such as cancer, cardiovascular and metabolic diseases, accidents and injuries. When both substances are used in combination, there is an interaction and reinforcement of the effects, and the health risks increase.²³

Key points in brief

- *The problem:* Alcohol and tobacco are often used together. The combined use increases and reinforces health risks.
- *The facts:* The risk of developing cancer of the mouth, pharynx, larynx and oesophagus increases in a dose-dependent manner. The risk of developing nicotine and/or alcohol dependence increases.
- *The solution:* Alcohol and nicotine use is never without risk. To protect health, the use of both substances should be avoided.

The combination of smoking and alcohol increases the risk of developing cancer. Both substances increase each other's carcinogenic effects, especially in the oral cavity, pharynx, larynx and oesophagus.^{2,13,18} This



synergistic effect is dose-dependent: The more cigarettes are smoked and the more alcohol is consumed, the greater the risk of cancer (Figure); alcohol may increase the absorption of carcinogenic substances from tobacco smoke via the oral mucosa^{2,19}. Women with a high family risk of breast cancer have an increased risk of developing breast cancer if they drink alcohol and also smoke²⁵.

Studies suggest that the combined and excessive use of alcohol and tobacco is associated with an increased risk for certain mental health conditions, such as depression, anxiety or stress disorders, compared with the use of either substance alone or neither^{6,17,20}. The combined use of both substances increases the risk of premature death.^{1,23}

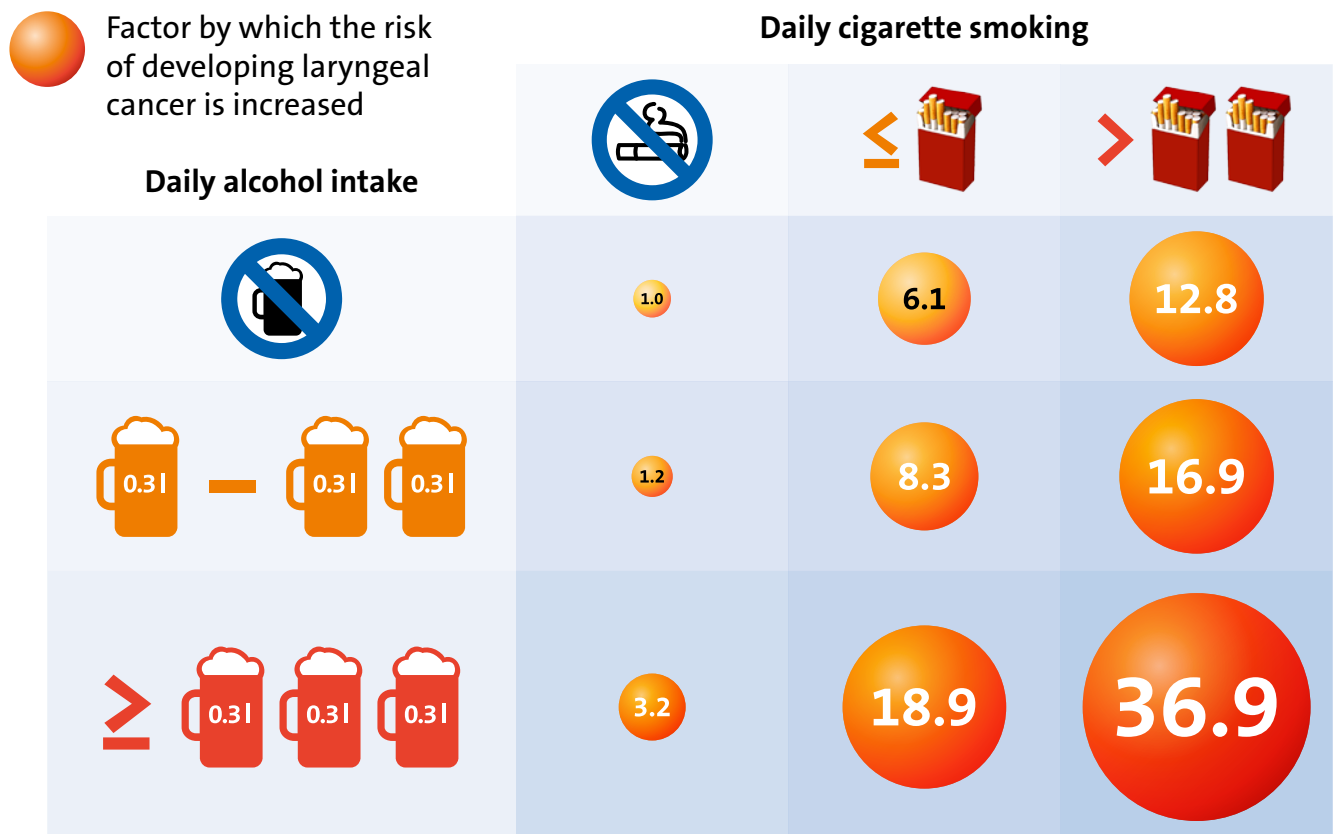
Smokers who also drink alcohol have a **significantly higher risk of several tobacco-related diseases, such as cardiovascular disease and lung disease**, compared to smokers who do not drink alcohol^{1,15}.

Increased risk of addiction

Alcohol and nicotine are psychoactive substances that have a direct effect on the user by releasing various neurotransmitters.

Figure

Effect of alcohol use and smoking on the risk of cancer using the example of laryngeal cancer¹⁶



Nicotine has a stimulating effect, increasing alertness and concentration¹¹, while alcohol has a more relaxing and disinhibiting effect¹⁰. When used in combination, they can interact with each other. For example, nicotine counteracts the calming effect of alcohol, and alcohol enhances the rewarding effect of nicotine.¹

If both addictive substances are used together on a regular basis, there is a mutually reinforcing habituation to the addictive substances: More of the substances are needed to achieve the same effect, which in turn increases the risk of addiction.¹

Conditioning can occur when smoking and alcohol are combined regularly: Certain places, drinks or meals are associated with the use of the substance. This can trigger cravings for both substances, even in the absence of alcohol or tobacco.²¹

If alcohol and nicotine are used together over a long period of time, one substance

may cause and increase cravings for the other.^{1,7} This connection is dose dependent: **If you smoke more, you drink more – if you drink more, you smoke more.**^{1,7,8,12} Moderate to heavy drinkers smoke significantly more often and more cigarettes per day than non-drinkers^{7,21}. About 80 per cent of people with an alcohol use disorder also have a tobacco dependence⁹. Nicotine dependence is often very severe in these people, and they have great difficulty quitting smoking.^{1,3,7,14} During a smoking cessation attempt, the relapse rate is significantly higher if alcohol is used at the same time.²⁴

Excessive nicotine and alcohol consumption is particularly problematic in adolescence, as the adolescent brain is in a remodelling phase and reacts very sensitively to addictive substances. Disrupting this phase can lead to long-term increased craving for addictive substances.^{7,12} Adolescents who consume nicotine at a young age often drink more alcohol and use addictive substances more frequently in adulthood than adolescents who have never smoked.^{5,7,22}

Conclusion

The combined use of alcohol and nicotine leads to interactions and reinforcements. This is associated with increased health risks; in particular, the risk for cancer increases significantly.

The risk of addiction also increases, and quitting is more difficult if one of the two substances continues to be consumed. To avoid disease and addiction, neither alcohol nor tobacco should be used.

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More information

Further English publications are available at:
<https://www.dkfz.de/en/krebspraevention/Downloads/Downloads.html>.

Support increases the likelihood of successfully quitting smoking

The World Health Organization (WHO) *Quitting Toolkit* provides resources to help quit smoking, including toll-free quitlines worldwide, text message support, and mobile applications.



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