
ALCOHOL AS A RISK FACTOR FOR CANCER

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OBJECTIVE: *To summarize epidemiologic evidence of alcohol as a risk factor for many types of cancers and discuss available resources to help patients reduce alcohol intake.*

DATA SOURCES: *Published epidemiologic literature and resources available for alcohol reduction.*

CONCLUSION: *Heavy alcohol intake has been linked to increased risk of several cancers, including cancer of the colon, rectum, female breast, oral cavity, pharynx, larynx, liver, and esophagus; whereas light-to-moderate drinking (up to one drink per day for women and up to two drinks per day for men) is not appreciably associated with cancer risk and may be beneficial for cardiovascular disease. Among the healthy population and cancer survivors, those already drinking in moderation may continue to do so. Interactive tools can be used to track drinking and set goals for reducing alcohol intake. Medications and social support are available for alcoholics.*

IMPLICATIONS FOR NURSING PRACTICE: *Nurses may utilize epidemiologic evidence and resources available to educate patients about their cancer risk associated with alcohol intake and provide support for reducing intake.*

KEY WORDS: *alcohol, standard drink, light-to-moderate drinking, alcoholism, cancer, cancer survival.*

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Alcohol is commonly consumed in our society. In the United States, 87.6% of people 18 years of age and older reported that they drank alcohol at some point in their lifetime and 71.9% reported that they drank in the past year.¹ The fact that the use of alcohol is so visible and accepted globally has overshadowed the fact that alcohol contributes to many health and social problems. It is estimated that 3.6% of all cancers worldwide (1.7% in women, 5.2% in men) were attributable to alcohol consumption,² and 3.2% to 3.7% of cancer deaths in the United States,³ primarily based on relative risks from studies focused on high intake of alcohol.

DESCRIPTIVE EPIDEMIOLOGY OF ALCOHOL AS A CANCER RISK FACTOR

In the United States, *one standard drink* contains roughly 14 grams of pure alcohol, which is found in 12 ounces of regular beer, 5 ounces of wine, or 1.5 ounces of distilled spirits. Heavy alcohol consumption, commonly defined as more than one drink per day for women and more than 2 drinks per day for men, has been linked to an increased risk of several cancers, including cancer of the colon, rectum, female breast, oral cavity, pharynx, larynx, liver, and esophagus.⁴ These eight cancers were considered as causally related to alcohol consumption according to the International Agency for Research on Cancer, and ethanol in alcoholic beverages was classified as “carcinogenic to humans.” The dose-response relationship varies by cancer site, with the highest relative risk for the upper aerodigestive tract, including cancers of the oral cavity, pharynx, larynx, and esophagus. The relative risks associated with alcohol consumption are less for colorectal and breast cancer but the absolute number of cases attributable to these cancers is high.⁵ Overall, the total amount of alcohol consumed over time, not the type of alcoholic beverage, seems to be the most important factor cancer risk. High intake of alcohol may also be associated with an increased risk of stomach,⁶ pancreas,⁷ and lung cancer.^{8,9}

According to the Dietary Guidelines for Americans,¹⁰ *light-to-moderate drinking* is defined as up to 1 drink per day for women and up to 2 drinks per day for men and is more prevalent than heavy alcohol consumption in the United States; about 46% of adults are light-to-moderate drink-

ers, and 5.4% are heavy drinkers. Extensive literature has documented the J-shaped associations between alcohol intake and a variety of diseases, including multiple cardiovascular outcomes¹¹ such as congestive heart failure and^{12,13} stroke,¹⁴ as well as diabetes¹⁵ and possibly coronary heart disease,¹⁶ whereby light-to-moderate drinkers have less risk than abstainers, and heavy drinkers are at the highest risk. Thus, the potential benefits of light-to-moderate alcohol consumption have to be weighed against the other possible health risks, and cancer is a major concern. However, the association between light-to-moderate drinking with cancer and the above alcohol-related cancers is less clear.^{17,18}

In a recent analysis of two large prospective US cohort studies, the Nurses’ Health Study and the Health Professionals Follow-Up Study, we quantified risk of cancer across all levels of alcohol consumption among women and men separately, with a focus on light-to-moderate drinking and never smokers.¹⁹ Overall, light-to-moderate drinking (<15 g/d for women and <30g/d for men) was associated with a small but non-significant increased risk of cancer in both women and men, consistent with findings from women in the British Million Women study.¹⁷ For men, the association with alcohol-related cancers (cancer of the colorectum, oral cavity, pharynx, larynx, liver, and esophagus⁴) was observed largely in alcohol drinkers who also smoked, and moderate drinking did not appreciably increase risk in never smokers. Among women, even a consumption of 5 to 14.9 g/d was associated with increased risk of alcohol-related cancers, mainly breast cancer.

Heavy episodic or binge drinking is not consistently defined across studies, but one commonly used definition in the United States, according to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), is four or more drinks at one time for a woman and five or more drinks at one time for a man, resulting in a person’s blood alcohol concentration to 0.08 g/dL. One in six US adults binge drink about four times a month, consuming about eight drinks per binge episode. While binge drinking is more common among young adults aged 18 to 34 years, binge drinkers aged 65 years and older report binge drinking more often (an average of five to six times a month).²⁰ Binge drinking was associated with an increased risk of breast cancer compared with women who consumed the same amount of total alcohol but did not binge drink.²¹

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