

A Drink a Day May Boost Risk for Certain Cancers

Roxanne Nelson | August 21, 2015

Another study showing an increased risk for cancer with drinking alcohol, even with just one or two drinks a day, has prompted renewed warnings on the health risks associated with alcohol consumption.

The new study, from an analysis of more than 150,000 healthcare professionals in the United States, found that overall, light to moderate drinking (alcohol intake of <15 g/day for women and <30 g/day for men) was associated with a small but nonsignificant increase in cancer risk in both women and men.

But this risk was more defined in specific populations. In men, the association was apparently driven by tobacco use. But for women, even one drink a day was associated with an increased risk for alcohol-related cancers, primarily breast cancer, and this was unrelated to smoking status.

The study was published online August 18 in the *BMJ*.

In an accompanying editorial, Jürgen Rehm, PhD, from the Centre for Addiction and Mental Health in Toronto, Canada, notes that the elevated risks for certain cancers associated with light and moderate drinking are important and have been partly confirmed by the current study.

Current guidelines relating to alcohol consumption consider overall risks to health and are not just for cancer, he comments.

"However, even when we consider all cause mortality attributable to alcohol, drinking more than 10 g of pure alcohol per day for women or 20 g for men over a lifetime can lead to a magnitude of risk not considered acceptable for voluntary behaviour in modern societies," writes Dr Rehm.

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This study does not challenge those limits, and the cited upper thresholds "are also roughly in line with the upper limits of many national guidelines."

Dr Rehm also advises that those "with a family history of cancer, especially women with a family history of breast cancer, should consider reducing their alcohol intake to below recommended limits, or even abstaining altogether, given the now well established link between moderate drinking and alcohol related cancers."

In addition, although minimal information on family histories of cancer was available, the authors did observe a stronger association of alcohol intake and overall cancer among people who had a family history of colorectal cancer. However, there were minimal differences among people with a family history of breast cancer compared with those without one.

Consider Reducing Intake

Dr Rehm questions what to make of the fact that the higher cancer risk associated with light to moderate drinking appears largely linked to lifetime ever-smokers.

"This could be the result of an interaction between smoking and drinking on risk for cancer," he notes, or it could be a confounder, but more research is definitely needed.

"Such research is becoming increasingly possible in high income countries, where the number of never smokers has increased while alcohol consumption has been relatively stable," says Dr Rehm.

Defining the Smoking Angle

Last year, the 2014 World Cancer Report, issued by the World Health Organization's International Agency for Research on Cancer (IARC), declared that no amount of alcohol is safe. The IARC put alcohol on the list of carcinogens back in 1988. But the risk is dose dependent — the more alcohol that a person drinks, the higher the cancer risk — and the study authors note that the association of cancer with light to moderate drinking is less clear.

The authors, led by Edward L Giovannucci, MD, ScD, professor of nutrition, Harvard T. H. Chan School of Public Health, Boston, also wanted to clarify the role of alcohol consumption independently of smoking, because that "has not been settled." Heavy drinkers are more likely to smoke, and although the analyses adjusted for smoking, residual confounding may exist.

Smoking is also the major risk factor for most alcohol-related cancers, aside from female breast cancer, and in studies that include tobacco use, the apparent influence of alcohol on cancer could be partly driven by its effect among smokers, they point out.

Women and Smokers at Risk

For their study, Dr Giovannucci and his team used data from two ongoing prospective cohort studies: the Nurses' Health Study, which included 121,700 female nurses aged 30 to 55 years at enrollment in 1976, and the Health Professionals Follow-up Study, which included 51,529 male health professionals aged 40 to 75 years at enrollment in 1986. They assessed the association between light to moderate drinking and cancer, as well as how alcohol consumption affects cancer risk in the absence of tobacco use.

Of the defined alcohol-related cancers (affecting the colorectum, female breast, oral cavity, pharynx, larynx, liver, and esophagus), there were 9016 cases in women and 1611 cases in men documented during follow-up. Breast cancer was the leading alcohol-related cancer in women, and colorectal cancer was predominant in men.

The associations between light to moderate drinking and risk for total cancer were similar regardless of smoking history, but consuming alcohol above moderate levels (Pinteraction = 0.06 for women and 0.11 for men) was more strongly associated with risk for cancer among ever-smokers compared with those who never smoked.

Among women, alcohol consumption of 5 to 14.9 g/day was associated with increased risk for alcohol-related cancer (relative risk, 1.13; 95% confidence interval, 1.06 - 1.20), which was primarily driven by breast cancer. It was similar regardless of smoking status and after controlling for obesity and other covariates.

Conversely, the risk for alcohol-related cancers (among light and moderate drinkers) only increased among men who ever smoked (Ptrend = 0.006) but not among those who never smoked (Ptrend = 0.18).

The authors also found that the relationship between total cancer and alcohol was not "appreciably" different when they looked at possible confounders, such as age, multivitamin or aspirin use, Alternative Healthy Eating Index 2010, or family history of breast cancer among women. However, it was stronger among those with a family history of colorectal cancer, although the interactions were not significant.

"Among women, even consumption of up to one drink per day was associated with increased risk of alcohol related cancers (mainly breast cancer)," conclude the authors. "Decisions on levels of alcohol consumption should also incorporate information on smoking history and familial predispositions to alcohol related cancers."

Alcohol Ups Mortality and Cancer Risk; No Net Benefit

Veronica Hackethal, MD | September 24, 2015

Drinking alcohol does not result in a net health benefit and, in fact, increases the risk for alcohol-related cancers by 51%, according to a study of almost 115,000 people from 12 countries.

It also showed that heavy drinking increases the risk for death by 31% to 54%, and that the highest rates of harmful alcohol use are seen in the lowest-income countries.

The results were published online September 17 in the *Lancet*.

"The association between alcohol consumption and health is extremely complex. Although alcohol consumption has been associated with some health benefits, it has also been associated with increased risks for other outcomes," said first author Andrew Smyth, MMedSc, a research fellow at the Population Health Research Institute, McMaster University, in Hamilton, Ontario, Canada.

"Our study suggests no overall benefit from alcohol consumption. Importantly, the greatest magnitude of increases in risk were seen in lower-income countries, where harmful alcohol use was highest," he reported. "Our data support global health strategies and national initiatives to reduce harmful alcohol use."

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Alcohol consumption has been linked to more than 60 medical disorders and represents the third most important modifiable risk factor for death and disability.

Low to moderate drinking has been linked to a reduced risk for heart attack, whereas heavy episodic drinking can increase the risk for injury and sudden cardiac death. And the risk for certain cancers increases with the amount of alcohol consumed over time, the researchers report.

The prospective cohort study involved 114,970 adults with no history of heart disease, stroke, or cancer. Participants lived in 12 countries on five different continents and were part of the Prospective Urban Rural Epidemiological (PURE) study.

The participants were categorized into income groups on the basis of country of residence: the 12,904 from Canada and Sweden were categorized as high income (11%); the 24,408 from Argentina, Brazil, Chile, Poland, South Africa, and Turkey were categorized as upper middle income (21%); the 48,845 from China and Colombia were categorized as lower middle income (43%); and the 28,813 from India and Zimbabwe were categorized as lower income (25%).

The researchers assessed potential confounders such as high-density-lipoprotein cholesterol, body mass index, education, diabetes, hypertension, physical activity, diet, and smoking.

Self-reported alcohol use was categorized as abstinence (never drinking), former drinking, (no drinking for at least 1 year), or current drinking (drinking in the previous year). Level of consumption was categorized as low (up to seven drinks a week), moderate (seven to 14 drinks in women and seven to 21 drinks in men), or high (14 or more drinks in women and 21 or more drinks in men). Consumption of five or more drinks in one sitting at least once per month was considered heavy episodic drinking.

Of the 36,030 (31%) current drinkers, 72% had low consumption. Over a follow-up of about 4 years, current drinking was linked to a 24% lower risk for heart attack (hazard ratio [HR], 0.76; 95% confidence interval [CI], 0.63 - 0.93), a 51% increased risk for alcohol-related cancers (mouth, esophagus, stomach, colorectal, liver, breast, ovary, and head and neck) (HR, 1.51; 95% CI, 1.22 - 1.89), and a 29% increased risk for injury (HR, 1.29; 95% CI, 1.04 - 1.61). There was no reduction in the risk for death or stroke among current drinkers.

The risk for cardiovascular disease was lower in wine drinkers than in never drinkers, and the risk for heart attack was significantly lower (HR, 0.55; 95% CI, 0.39 - 0.77).

However, the risk for cancer was 38% higher in wine drinkers than in never drinkers (HR, 1.38; 95% CI, 1.05 - 1.81), 69% higher in spirit drinkers (HR, 1.69; 95% CI, 1.26 - 2.26), and 20% higher in beer drinkers (HR, 1.20; 95% CI, 0.91 - 1.57).

"The reduction in risk of heart attack is consistent with previous literature, both concerning red wine and low alcohol consumption. However, this may be offset by increases in risk for other outcomes," Dr Smyth pointed out.

People with high alcohol intake had a 31% increased risk for death (HR, 1.31; 95% CI, 1.04 - 1.66). Those with heavy episodic drinking had a 54% increased risk for mortality (HR, 1.54; 95% CI, 1.27 - 1.87) and a 71% increased risk for injury (HR, 1.71; 95% CI, 1.14 - 2.56).

More than three-quarters of people in high-income countries consumed alcohol, whereas only one-eighth of those in low-income countries did. However, even though low-income countries had the lowest frequency of current drinking, they also had the highest rates of current drinkers with high intake and heavy episodic drinking patterns.

In higher-income countries, risk on a composite score indicating the net association between alcohol and health outcomes was significantly lower for current drinkers than for never drinkers (HR, 0.84; 95% CI, 0.77 - 0.92). In lower-income countries, there was no reduction in composite score for current drinkers (HR, 1.07; 95% CI, 0.95 - 1.21; P interaction $\leq .0001$).

Dr Smyth and his colleagues emphasize that people who do not drink should not be advised to start drinking because of the potential to increase consumption or to start drinking in a heavy episodic pattern.

A detailed assessment of alcohol use during follow-up is lacking in this study, Jason P. Connor, PhD, from the University of Queensland in Herston, Australia, and Wayne Hall, PhD, from King's College London in the United Kingdom, write in an accompanying comment.

Even though outcomes on all health measures assessed were worse in former drinkers, the researchers did not collect data on how much alcohol these people drank before they abstained. In addition, relatively few adverse events occurred during the short follow-up period, which affects the study's statistical power, they note.

Nevertheless, Drs Connor and Hall commend the researchers, noting that the value of the PURE study "will greatly increase as the number of adverse health outcomes accumulates with longer follow-up."

"In the meantime, we should not delay action," they write. "More than sufficient evidence is available for governments to give increased public health priority to reducing alcohol-related disease burden in low-income and middle-income countries."

"This should be done by implementing the most effective population policies to discourage harmful drinking — namely, increasing the price of alcohol and reducing its availability, especially to younger drinkers, and preventing the alcohol industry from promotion of frequent drinking to intoxication," they explain.

The study authors, Dr Connor, and Dr Hall have disclosed no relevant financial relationships.