

## Alcohol & Cancer

### *An Underappreciated Risk Factor for a Deadly Disease*

Alcohol use is one of the leading preventable causes of cancer, yet many Americans, including health professionals, are not aware of this or are underinformed.<sup>1</sup> According to a 2017 American Institute for Cancer Research (AICR) survey, only 39% of Americans recognize this link.<sup>2</sup>

### Facts About the Alcohol-Cancer Link

- Alcohol consumption is a causal risk factor for several types of cancer, including cancers of the head and neck, female breast, stomach, liver, and colorectum.<sup>3</sup>
- Every high-level cancer research body – including the WHO’s International Agency for Research on Cancer (IARC),<sup>4</sup> the American Institute for Cancer Research (AICR),<sup>5</sup> the American Cancer Society,<sup>6</sup> the American Society for Clinical Oncology (ASCO),<sup>7</sup> and the National Cancer Institute (NCI)<sup>8</sup> – has determined that alcohol beverages are causal risk factors for cancer.
- The U.S. National Toxicology Program (the U.S. agency charged with officially identifying carcinogens) has identified “alcoholic beverage consumption” as “known to be a human carcinogen” – its highest category of carcinogenicity, indicating that there is “sufficient evidence of cancer from human studies showing a cause-and-effect relationship between exposure to the substance and human cancer.”<sup>9</sup> **Other examples of human carcinogens include: arsenic, asbestos, formaldehyde, Hepatitis B and C viruses, and tobacco.**<sup>10</sup>

Percentage of  
Cancer Deaths  
which are  
Alcohol-Related

Cancer Site	Alcohol-related %
Mouth, pharynx, & larynx	27
Esophagus	34
Liver	15
Colorectum	5
Female Breast	11

Source: WCRF/AICR<sup>11</sup>

<sup>1</sup> LoConte et al. (2017); AICR (2017); Oh, Kumar, & Cruz (2008)

<sup>2</sup> AICR (2017)

<sup>3</sup> AICR (n.d.)

<sup>4</sup> IARC (2010)

<sup>5</sup> AICR (n.d.)

<sup>6</sup> Islami et al. (2017)

<sup>7</sup> LoConte et al. (2017)

<sup>8</sup> National Cancer Institute (2013)

<sup>9</sup> National Toxicology Program (2014)

<sup>10</sup> American Cancer Society (n.d.)

<sup>11</sup> WCRF/AICR (2009)

- Alcohol is a risk factor for three of the deadliest cancers in terms of recalcitrance: those of the **liver** (18% 5-year relative survival rate), **esophagus** (21%), and **stomach** (31%).<sup>12</sup>
- Even low-to-moderate levels of consumption confer risk for some of these cancers. In fact, there is no completely “safe” level of alcohol use with regard to cancer risk, with risk for some cancers (most notably female breast cancer) beginning at just one drink a day.<sup>13</sup> Accordingly, AICR offers the following recommendation regarding alcohol use and cancer:

*Even small amounts of alcohol pose some cancer risk, so for lowest risk, AICR recommends not drinking alcohol at all. However, if you do drink alcohol, limit your intake to no more than two drinks a day for men and one drink a day for women.*<sup>14</sup>

- Furthermore, no specific type of alcohol (beer, wine, or hard liquor) is more associated with the risk of cancer than others.<sup>15</sup>
- There is a growing body of research on alcohol’s link with cancers of the pancreas,<sup>16</sup> prostate,<sup>17</sup> and skin.<sup>18</sup>

## The Truth about Alcohol’s “Health Halo”

While some past studies have shown a relationship between red wine and other alcohol consumption and decreased heart disease risk and reduced overall death rates, a growing number of researchers believe this relationship has been overstated.<sup>19</sup>

The improved health outcomes may be better explained (or at least partially explained) by other healthy behaviors and advantages enjoyed by light-moderate drinkers – like regular exercise, better diet, and access to preventive health care.<sup>20</sup> Regardless, the American Heart Association does not recommend that anyone drink for heart health. Moreover, binge and heavy drinking can cause serious heart problems, including alcoholic cardiomyopathy<sup>21</sup> and arrhythmias.<sup>22</sup>

An in-depth meta-analysis of studies about effects of moderate drinking on mortality backs up the contention that many of the studies finding health benefits from drinking are not carefully designed. The researchers found that “low-volume alcohol consumption [that is, regular, moderate drinking] has **no net mortality benefit** compared with lifetime abstention or occasional drinking.”<sup>23</sup>

Furthermore, there have been misleading claims circulating about red wine because of the presence of resveratrol, an anti-oxidant. In reality, the (carcinogenic) ethanol in a glass of wine is **over 100,000 times** more potent than the resveratrol.<sup>24</sup>

---

<sup>12</sup> Deadliest Cancers Coalition (n.d.)

<sup>13</sup> AICR/WCRF (2017)

<sup>14</sup> AICR (n.d.)

<sup>15</sup> LoConte et al. (2017)

<sup>16</sup> Naudin et al. (2018)

<sup>17</sup> Michael et al. (2018)

<sup>18</sup> Gandini et al. (2018)

<sup>19</sup> Wisconsin Cancer Council (n.d.)

<sup>20</sup> Barefoot et al. (2002); Naimi et al. (2005)

<sup>21</sup> Maisch (2018)

<sup>22</sup> Brunner et al. (2018)

<sup>23</sup> Stockwell et al. (2016). Emphasis added.

<sup>24</sup> Lachenmaier et al. (2014)

## The Nebraska Experience

The cancers for which alcohol consumption is a risk factor (in shaded cells, below) are among the deadliest to Nebraskans, both in terms of numbers of deaths and recalcitrance (five-year survival rate).

Cancer site	Est. number of deaths, Nebraska, 2017
Lung/Bronchus	900
<b>Colorectum</b>	330
Pancreas	250
<b>Female Breast</b>	230
Prostate	180
Leukemia	150
<b>Liver</b>	130

Source: American Cancer Society<sup>25</sup>

The Nebraska Comprehensive Cancer Control Program has identified the need to address excessive alcohol consumption in order to reduce alcohol-related cancers. The Nebraska Cancer Plan (2017-2022) includes objectives to reduce binge drinking, as well as raise awareness of the alcohol-cancer link among medical professionals and the general public.<sup>26</sup> According to the Centers for Disease Control and Prevention (CDC), between 2015-2019, 720 Nebraskans died annually due to cancer, 71 of which were alcohol-related cancer deaths: 15 liver, 16 colorectal, 12 oral cavity & pharyngeal, and 11 female breast.<sup>27</sup>

## Solutions

The most effective way to reduce alcohol-related cancers is through the implementation of population-level alcohol control policies. These policies include:<sup>28</sup>

- Increasing the price of alcohol through taxation;
- Reducing the availability of retailed alcohol through regulation of alcohol outlet density;
- Restricting alcohol advertising and marketing.

The American Society of Clinical Oncology – America’s cancer doctors – also calls for the elimination of **pinkwashing**:

... Pinkwashing is a form of cause marketing in which a company uses the color pink and/or pink ribbons to show a commitment to finding a cure for breast cancer. Given the consistent evidence that shows the link between alcohol consumption and an increased risk of breast cancer, alcoholic beverage companies should be discouraged from using the symbols of the battle against breast cancer to market their products.<sup>29</sup>

For more on alcohol-related cancer prevention from the CDC:

[https://www.cdc.gov/cancer/dcpc/prevention/policies\\_practices/alcohol/index.htm](https://www.cdc.gov/cancer/dcpc/prevention/policies_practices/alcohol/index.htm)

---

<sup>25</sup> American Cancer Society (2017)

<sup>26</sup> Nebraska DHHS (2017)

<sup>27</sup> CDC ARDI (2022)

<sup>28</sup> WHO (2017); The Community Guide (2017)

<sup>29</sup> LoConte et al. (2017)

## References

- American Cancer Society. (n.d.). Known and probable human carcinogens. Available at <https://www.cancer.org/cancer/cancer-causes/general-info/known-and-probable-human-carcinogens.html>
- American Institute for Cancer Research (AICR). (n.d.). The facts about alcohol [brochure]. Available at <http://www.aicr.org/assets/docs/pdf/brochures/facts-about-alcohol.pdf>
- American Institute for Cancer Research (AICR). (2017). "Fewer than half of Americans know alcohol, processed meats affect cancer risk." Available at [http://www.aicr.org/cancer-research-update/2017/02\\_08/cru-fewer-than-half-of-americans-know-alcohol-processed-meats-affect-cancer-risk.html?referrer=https://www.google.com/](http://www.aicr.org/cancer-research-update/2017/02_08/cru-fewer-than-half-of-americans-know-alcohol-processed-meats-affect-cancer-risk.html?referrer=https://www.google.com/)
- AICR/WCRF. (2017). Diet, nutrition, physical activity and breast cancer. Available at <http://www.aicr.org/continuous-update-project/reports/breast-cancer-report-2017.pdf>
- Barefoot, J. C., Grønbaek, M., Feaganes, J. R., McPherson, R. S., Williams, R. B., & Siegler, I. C. (2002). Alcoholic beverage preference, diet, and health habits in the UNC Alumni Heart Study. *The American Journal of Clinical Nutrition*, 76(2), 466-472.
- Brunner, S., Herbel, R., Droblesch, C., Peters, A., Massberg, S., Käab, S., & Sinner, M. F. (2017). Alcohol consumption, sinus tachycardia, and cardiac arrhythmias at the Munich Octoberfest: Results from the Munich Beer Related Electrocardiogram Workup Study (MunichBREW). *European heart journal*, 38(27), 2100-2106.
- Community Guide. (2017). Excessive alcohol consumption. Available at <https://www.thecommunityguide.org/topic/excessive-alcohol-consumption>
- Deadliest Cancers Coalition. (n.d.). "What are the deadliest, or recalcitrant, cancers?" [webpage]. Available at <http://www.deadliestcancers.org/what-are-deadly-cancers.html>
- Gandini, S., Masala, G., Palli, D., Cavicchi, B., Saieva, C., Ermini, I., ... & Caini, S. (2018). Alcohol, alcoholic beverages, and melanoma risk: a systematic literature review and dose-response meta-analysis. *European journal of nutrition*, 57(7), 2323-2332.
- IARC Working Group on the Evaluation of Carcinogenic Risks to Humans. (2010). *Alcohol consumption and ethyl carbamate. IARC monographs on the evaluation of carcinogenic risks to humans*. World Health Organization, International Agency for Research on Cancer, 96, 3.
- Islami, F., Goding Sauer, A., Miller, K. D., Siegel, R. L., Fedewa, S. A., Jacobs, E. J., et al. (2017). Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *CA: a cancer journal for clinicians*.
- Lachenmeier, D. W., Godelmann, R., Witt, B., Riedel, K., & Rehm, J. (2014). Can resveratrol in wine protect against the carcinogenicity of ethanol? A probabilistic dose-response assessment. *International Journal of Cancer*, 134(1), 144-153.
- LoConte, N. K., Brewster, A. M., Kaur, J. S., Merrill, J. K., & Alberg, A. J. (2017). Alcohol and cancer: A Statement of the American Society of Clinical Oncology. *Journal of Clinical Oncology*, JCO-2017. Available at: <http://ascopubs.org/doi/full/10.1200/JCO.2017.76.1155>
- Maisch, B. (2018). Alcoholic Cardiomyopathy: The Result of Dosage and Individual Predisposition." *Herz*, 41(6), 484-493.
- Michael, J., Howard, L. E., Markt, S. C., De Hoedt, A., Bailey, C., Mucci, L. A., ... & Allott, E. H. (2018). Early-life alcohol intake and high-grade prostate cancer: results from an equal-access, racially diverse biopsy cohort. *Cancer Prevention Research*, 11(10), 621-628.
- Naimi, T. S., Brown, D. W., Brewer, R. D., Giles, W. H., Mensah, G., Serdula, M. K., et al. (2005). Cardiovascular risk factors and confounders among nondrinking and moderate-drinking US adults. *American Journal of Preventive Medicine*, 28(4), 369-373.
- National Cancer Institute (2013). *Alcohol and cancer risk* [fact sheet]. Available at <https://www.cancer.gov/about-cancer/causes-prevention/risk/alcohol/alcohol-fact-sheet>
- Naudin, S., Li, K., Jaouen, T., Assi, N., Kyrø, C., Tjønneland, A., ... & Boeing, H. (2018). Lifetime and baseline alcohol intakes and risk of pancreatic cancer in the European Prospective Investigation into Cancer and Nutrition study. *International journal of cancer*, 143(4), 801-812.
- NTP (National Toxicology Program) (2014). *Report on Carcinogens, Thirteenth Edition. Research*. Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. Available at: <http://ntp.niehs.nih.gov/pubhealth/roc/roc13/>
- Nebraska Dept. of Health and Human Services. (2017). *Nebraska Cancer Plan: 2017-2022*. Available at <http://dhhs.ne.gov/publichealth/Documents/Nebraska%20Cancer%20Coalition%20Plan%202017%20-%202022.pdf>
- Oh, J., Kumar, J., & Cruz, G. (2008). Racial and ethnic disparity in oral cancer awareness and examination: 2003 New York State BRFS. *Journal of Public Health Dentistry*, 68(1), 30-38, p. 37
- Stockwell, T., Zhao, J., Panwar, S., Roemer, A., Naimi, T., & Chikritzhs, T. (2016). Do "moderate" drinkers have reduced mortality risk? A systematic review and meta-analysis of alcohol consumption and all-cause mortality. *Journal of Studies on Alcohol and Drugs*, 77(2), 185-198.
- Wisconsin Cancer Council. (n.d.) *Alcohol & cancer: You asked. We've answered*. [fact sheet]. Available at: [https://wicancer.org/wp-content/uploads/Alcohol-and-Cancer-FAQ\\_design\\_FINAL.pdf](https://wicancer.org/wp-content/uploads/Alcohol-and-Cancer-FAQ_design_FINAL.pdf)
- World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR). (2009). *Policy and action for cancer prevention. Food, nutrition, and physical activity: A global perspective*. Table A2, p. 152
- World Health Organization (WHO). (2017). *Tackling NCDs: 'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases*. Geneva: WHO. Available at <http://apps.who.int/iris/bitstream/10665/259232/1/WHO-NMH-NVI-17.9-eng.pdf?ua=1>

## Contact Information

Project Extra Mile  
6001 Dodge Street, CEC 228B  
Omaha, NE 68182-0600  
Ph: (402) 963-9047  
Email: [info@projectextramile.org](mailto:info@projectextramile.org)