

## Alcohol: A Major Modifiable Risk Factor for Cancer



3/4 of U.S. adults drink at least once a week (2019-2020).<sup>1</sup> Despite increasing research, only 1/3 of Americans are aware of the cancer risk tied to alcohol.<sup>2-3</sup>

Alcohol intake is the 3rd leading modifiable risk factor for cancer for women and 4th for men in the U.S., after tobacco and excess weight.<sup>2</sup>

Alcohol intake is a leading modifiable risk factor for cancer, contributing to **4.7%** of cancer cases in men and **6.2%** in women.<sup>4-5</sup>

## How Alcohol Causes Cancer

Alcohol's carcinogenic effects are primarily due to the breakdown of acetaldehyde, which causes DNA damage, oxidative stress, inflammation, and immune system disruption. It also raises estrogen levels, increases the risk of breast cancer, and when combined with tobacco, enhances the risk for cancers of the mouth and throat.<sup>7-10</sup> In general, the more alcohol is consumed, the greater the cancer risk.<sup>11</sup>



**DNA damage & protein alterations**



**Increased oxidative stress and inflammation**



**Disrupts gut microbiome and immune response**



**Raises estrogen levels (linked to breast cancer)**

## Cancer Types Linked to Alcohol

Alcohol contributes to at least 7 types of cancer. In 2019, the following cases were attributed to alcohol consumption:<sup>6</sup>

- Oral Cavity: 41.7%
- Pharynx: 40%
- Larynx: 26.4%
- Liver: 18.8%
- Esophagus: 18.7%
- Female Breast\*: 16.4%
- Colorectal: 12.8%

*\*While the association of alcohol to breast cancer is not as robust as in other cancer types, due to the prevalence of breast cancer (1 in 8 women), additional cases related to alcohol consumption present a large public health burden.<sup>11</sup>*

## Alcohol Use During Cancer Treatment: Risks and Considerations



Understanding the impact on health, recovery, and treatment effectiveness.

1

### Increased Risks Post-surgery

- Higher risk of postoperative complications after surgery.
- Alcohol use is linked to increased mortality during recovery.<sup>12</sup>



2

### Alcohol and Medication Interactions

- Pain, anxiety, sleep, and nausea medications may be less effective or dangerous when combined with alcohol.
- Risk of increased bleeding and CNS depression.<sup>13</sup>



3

### Impact on Immune Function

- Chronic alcohol use weakens immune response.
- Increased risk of infection due to compromised immunity from both alcohol and cancer treatments.<sup>5,14</sup>



4

### Psychiatric Impact on Treatment

- Alcohol use disorder often co-occurs with psychiatric disorders.
- These issues may impact cancer treatment adherence and quality of life.<sup>15-16</sup>



5

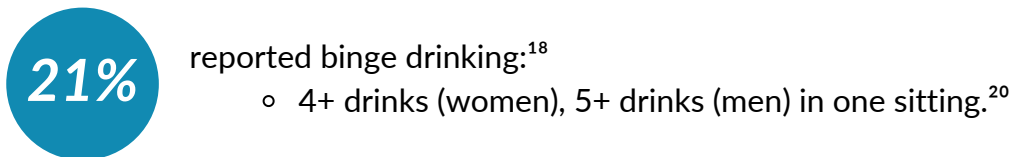
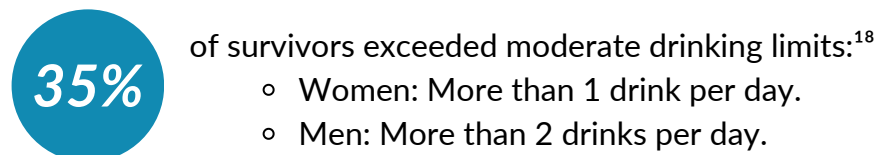
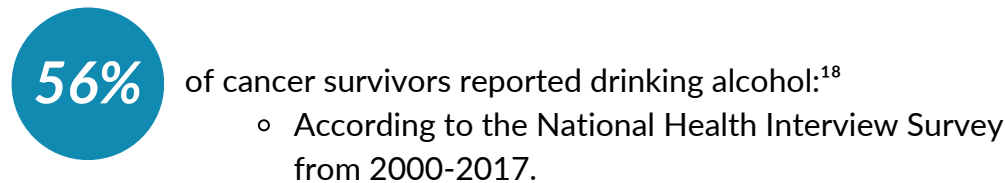
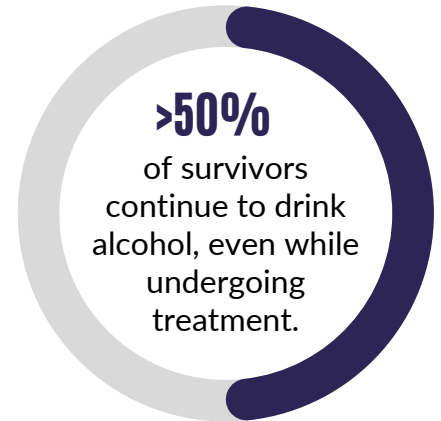
### Alcohol and Cancer Treatment Effectiveness

- Limited research on alcohol's effect on tumor growth.
- Alcohol may impact chemotherapy, immunotherapy, radiation, and surgery efficacy and toxicity.<sup>5</sup>



## Cancer Survivors: Numbers and Trends ▼

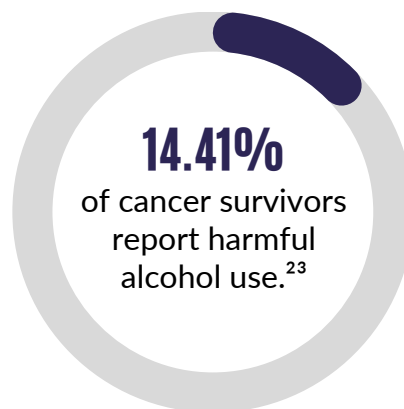
By 2030, there will be over **22 million cancer survivors** in the U.S.<sup>17</sup>



## Alcohol and Cancer Recurrence ▼

- Drinking after a diagnosis of upper aerodigestive tract (UADT) cancers (oral cavity, pharynx, larynx, esophagus) is associated with:<sup>21</sup>
  - Nearly **three times higher** risk of second primary cancer.
  - Increased all-cause mortality.
- For breast cancer:<sup>22</sup>
  - Postmenopausal, estrogen-receptor positive subgroups may see a higher risk of recurrence.

## Cancer Survivors and Harmful Drinking ▼



Harmful drinking was most common in:<sup>23</sup>

- Cervical cancer
- Head cancers
- Neck cancers

The impact of alcohol cessation on most cancers is largely unstudied, but it is linked to a reduced risk of laryngeal and pharyngeal cancers, with greater benefits after 10–20 years of abstinence.<sup>5,22</sup>

## Guidelines and Interventions

Consuming alcohol is linked to an increased risk for cancer. The American Cancer Society (ACS) recommends reducing or eliminating alcohol to prevent cancer.<sup>21</sup>



### American Cancer Society Guidelines

- **2020 Recommendations for Diet & Physical Activity:**<sup>24</sup>
  - No alcohol is best for cancer prevention.
  - If drinking: Limit to **1 drink per day** (women), **2 drinks per day** (men).
- **2022 Recommendations for Cancer Survivors:**<sup>24</sup>
  - **Avoid or Limit Alcohol:** Roughly **50%** of cancer survivors do not follow this guideline.



### Key Public Health Interventions

International cancer care and U.S. public health organizations, including the American Society of Clinical Oncologists (ASCO), recommend:

- **Reducing Alcohol Availability & Advertising:** Make alcohol less accessible and decrease affordability.
- **Raising Awareness:** Strengthen public knowledge of alcohol's cancer risks.
- **Updating Health Warnings:** The U.S. Surgeon General (2025) proposes prominent cancer warning labels on alcoholic beverages.<sup>6</sup>



### Healthcare Professionals' Role

- **Screening & Brief Interventions:**<sup>22</sup>
  - Oncology providers should screen for alcohol use and provide guidance on reducing consumption.
  - Healthcare providers should lead efforts to inform the public and influence policy.
- **Key Recommendation for Healthcare Professionals:**<sup>22</sup>
  - Increase knowledge about alcohol's cancer risks to reduce barriers and better counsel patients about alcohol consumption.

## Funding Statement



Funding for this initiative was made possible by cooperative agreement No. 1H79TI086771-01 from SAMHSA. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

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