Is Alcohol a Risk Factor for Prostate Cancer?

We carried out the first systematic review and meta-analysis of the relationship between alcohol consumption and prostate cancer that controlled for abstainer bias (that is, we isolated lifetime abstainers as the control group).

**Alcohol is a class 1 carcinogen by the World Health Organization. It is known to cause cancer at multiple sites in the body, including the digestive tract.**

**Alcohol likely also causes skin, pancreatic, and prostate cancer; however, determining the precise scope of these relationships has been complicated partly by the methodological issue of “abstainer bias.”**

**Among current drinkers, we found a significant dose-response relationship between amount of alcohol consumed and risk of prostate cancer, with risk starting at even low volume intake.**

By accounting for abstainer bias in our main analysis of all 27 studies (graph below), Low Volume Drinkers had an 8% higher risk of prostate cancer than Lifetime Abstainers.

When we analyzed only those six studies that were originally free of both Former Drinkers and Occasional Drinkers biases, Low Volume Drinkers’ risk was 23% greater than Lifetime Abstainers.

We found that the common practice of combining former drinkers with abstainers biases risk downwards and can disguise a significant association between alcohol intake and risk of prostate cancer.

**Increased Risk**

<table>
<thead>
<tr>
<th>Level of Drinking</th>
<th>Increased Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Drinkers</td>
<td>High Volume Drinkers</td>
</tr>
<tr>
<td>Daily intake from 1 to 2 drinks per day</td>
<td>~3 drinks per day</td>
</tr>
<tr>
<td>Daily intake from 3.5 to 5 drinks per day</td>
<td>~5+ drinks per day</td>
</tr>
</tbody>
</table>

**Reduced Risk**

<table>
<thead>
<tr>
<th>Level of Drinking</th>
<th>Reduced Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasional Drinkers</td>
<td>1 drink every 10 days</td>
</tr>
<tr>
<td>Low Volume Drinkers</td>
<td>~2 drinks per day</td>
</tr>
<tr>
<td>Moderate Volume Drinkers</td>
<td>~3.5 to 5 drinks per day</td>
</tr>
<tr>
<td>High Volume Drinkers</td>
<td>~5+ drinks per day</td>
</tr>
</tbody>
</table>

**Take Home Messages**

1. Even low volume drinking increases your risk of prostate cancer.

2. Generally, the more alcohol you drink, the greater your risk of prostate cancer.

3. Given the high prevalence of prostate cancer, the public health implications of these findings are significant. Prostate cancer may need to be incorporated into future estimates of the burden of disease alongside other cancers, and be integrated into public health strategies for reducing alcohol-related disease.

**Mouth**

**Larynx**

**Upper throat**

**Esophagus**

**Breast**

**Stomach**

**Liver**

**Colon**

**Rectum**

**Prostate cancer is the 2nd most common cancer in men and 5th leading cause of cancer death worldwide.**

**What’s Your Risk of Prostate Cancer from Drinking?**

**Increased Risk**

**Reduced Risk**

**No Risk**

**Lifetime Abstainers**

**Former Drinkers**

**Occasional Drinkers**

**No statistically significant difference in prostate cancer compared to Lifetime Abstainers**

**High risk of developing prostate cancer compared to Lifetime Abstainers**

**Take Home Messages**

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3. Give the high prevalence of prostate cancer, the public health implications of these findings are significant. Prostate cancer may need to be incorporated into future estimates of the burden of disease alongside other cancers, and be integrated into public health strategies for reducing alcohol-related diseases.