

Modeled Impact of a Proposed Alcohol Excise Tax on Cancer Incidence and Mortality

**The Economic and Health Effects of a Twenty-Five Cents per Drink
Alcohol Excise Tax Increase in New Mexico**

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Summary

- In 2000, the United States Department of Health and Human Services listed alcohol as a human carcinogen.
- According to National Cancer Institute data for 2008-2012, alcohol was a risk factor in 26.2% of the total cancer deaths in New Mexico each year. This is equivalent to 876 out of 3,341 total cancer deaths.
- On average, an estimated 128 of New Mexico's cancer deaths can be attributed to alcohol consumption each year, including 37 deaths from female breast cancer.
- Using conservative modeling, a 25 cents per drink increase in New Mexico's alcohol excise tax will prevent 13 cancer deaths and 41 new cases of cancer from occurring each year.

Background

Excessive alcohol consumption not only affects our state's economic status, it places an enormous toll on our health as well.

This report expands on an earlier report describing the potential economic and health benefits of an alcohol excise tax increase for New Mexico, which can be read in its entirety here: <https://alcoholtaxessaveslives.org/the-facts/the-report>. In this addendum, we provide an analysis of the impacts of a tax increase on morbidity and mortality for cancers for which alcohol consumption is a reported risk factor.

Since 1974, several studies have consistently found that alcohol causes a percentage of all US cancer deaths (Rothman, et al. 1978; Doll, et al. 1994; Harvard Center for Cancer Prevention, 1996). Newer research has confirmed that alcohol intake is a modifiable risk factor for several cancers, including female breast, colon and rectal, esophagus, laryngeal, liver, and oropharyngeal cancers (Nelson, et al. 2013).

In 2000, the United States Department of Health and Human Services listed alcohol as a human carcinogen. Although alcohol-attributable cancer risks and deaths were the greatest among those who consumed three (40 grams) or more drinks per day, Nelson et al. estimated that 30% of alcohol-attributable cancer deaths occurred among those who consumed 1.5 (20 grams) drinks per day (Nelson, et al. 2013). This suggests that alcohol consumption at low levels is also associated with increased cancer risk.

Methodology

With the exception of laryngeal cancer, average annual cancer deaths and new cases of cancer for New Mexico are derived from the *National Cancer Institute, State Cancer Profiles for 2008-2012*. Average annual cancer deaths and number of new cases for laryngeal cancer for New Mexico are derived from the *New Mexico Department of Health, Indicator Based Information System for 2006-2012*.

Average annual deaths (or new cases of cancer) attributed to alcohol are calculated by multiplying the total number of deaths (or total number of new cases) by the percent attributed to alcohol consumption. Percentage attributed to alcohol consumption is the average of population attributable fractions for alcohol attributable cancers: United States, 2009 by cancer site and sex which are derived from table 1 of *Alcohol Attributable Cancer Deaths and Years of Potential Life Lost in the United States* (Nelson, et al. 2013).

Findings

According to National Cancer Institute data, alcohol was a risk factor in 26.2% of the total cancer deaths in New Mexico. This is equivalent to 876 out of 3,341 total cancer deaths (Table 1). On average, an estimated 128 cancer deaths attributed to alcohol consumption occur each year. According to our model, a 25 cents per drink alcohol excise tax will result in 13 fewer deaths each year because of decreased alcohol consumption (Table 1).

Table 1. Average annual decrease in cancer deaths with a 25 cents per drink alcohol excise tax.

Cancer Site	Total # Deaths		% Attributed to Alcohol Consumption		Total Deaths Attributed to Alcohol Consumption		Annual Reduction in Deaths with Alcohol Excise Tax
	Men	Women	Men	Women	Men	Women	
Female Breast	n/a	247	n/a	15.00	n/a	37	4
Colon and Rectal	178	149	7.38	8.38	13	12	2
Esophagus	60	15	25.00	18.75	15	3	2
Laryngeal	17	4	26.75	17.50	5	1	1
Liver	105	48	13.75	11.75	14	6	2
Oropharyngeal	37	16	46.75	32.25	17	5	2
Total	397	479			64	64	13

Alcohol is a known risk factor for female breast, colon and rectal, esophagus, laryngeal, liver, and oropharyngeal cancers. From 2008 to 2012, an average of 2,716 new cases of these types of cancers occurred each year. Of these cancers, an estimated 423 were attributed to alcohol consumption (Table 2).

According to our model, a 25 cents per drink alcohol excise tax will decrease alcohol consumption contributing to an estimated decrease in 41 new cancer cases each year (Table 2).

Table 2. Average annual reduction in new cancer cases with a 25 cents per drink alcohol excise tax.

Cancer Site	Total # of New Cases		% Attributed to Alcohol Consumption		Total New Cancer Cases Attributed to Alcohol Consumption		Annual Reduction in New Cancer Cases with Alcohol Excise Tax
	Men	Women	Men	Women	Men	Women	
Female Breast	n/a	1,332	n/a	15.00	n/a	200	20
Colon and Rectal	429	378	7.38	8.38	32	32	6
Esophagus	72	16	25.00	18.75	18	3	2
Laryngeal	49	9	26.75	17.50	13	2	1
Liver	151	57	13.75	11.75	21	7	3
Oropharyngeal	160	63	46.75	32.25	75	20	9
Total	861	1,855			159	264	41

Our modeling provides conservative estimates because we assumed the decrease in alcohol consumption from a 25 cents per drink increase in the alcohol excise tax would be evenly distributed among all drinkers. Other models suggest decreases in mortality and morbidity would likely be greater than estimates provided in tables 1 and 2 because the impact of the tax would not be evenly distributed, and would have a greater affect on problem drinkers (Jernigan, et al. 2011).

Reducing alcohol consumption is an important cancer prevention strategy, yet has received relatively little attention as an intervention to reducing cancer, when compared with other risk factors for cancer.

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