Alcohol-Related Cancers in Mississippi, 2003-2015

Excess alcohol consumption is a modifiable risk factor that increases the risk of developing certain cancers. According to data from the Behavioral Risk Factor Surveillance System for 2016, 4.75% of Mississippi adults reported heavy drinking (men having more than 14 drinks per week and women having more than seven drinks per week). Mississippi has the fifth lowest rate of heavy drinking.\(^1\) Excessive alcohol use is associated with cancers of the lip, oral cavity, pharynx, colon and rectum, breast in females, esophagus, liver, and larynx. Below are graphs of the trends in alcohol-related cancers over the period 2003 to 2015 by race and sex with a description of the trends occurring in each group both for the full time period and for the most recent period between 2011 and 2015. All analysis was done using SEER*Stat software\(^2\).

**INVASIVE LIP, ORAL CAVITY, AND PHARYNX CANCER INCIDENCE RATE* MISSISSIPPI, 2003-2015**

*Rates age-adjusted to the 2000 U.S. standard million population

Males have significantly higher rates of lip, oral cavity, and pharynx cancers than females. Over the period from 2003 to 2015, only black males experienced a significant change in incidence rates. The rate for black males decreased annually by 2.4%. The other groups experienced very little change. White males and females saw small annual increases of 0.3% for males and 0.9% for females. Black females saw a very small decrease of 0.1% annually.

For the latest five-year time period of 2011 to 2015, none of the groups had any statistically significant changes in their rates. Each group but white females was showing a decreasing trend. The observed decrease for white males was 2.8% annually. For black males, the
observed decrease was 4.9%, and for black females, the observed decrease was 4.3%. White females, conversely, were observed to have rates that were increasing 2.0% annually.

![INVASIVE COLORECTAL CANCER INCIDENCE RATE*, MISSISSIPPI, 2003-2015](image)

*Rates age-adjusted to the 2000 U.S. standard million population

Colorectal cancer rates decreased in all of the race/sex groups between 2003 and 2015. White males experienced the highest level of decrease in colorectal cancer at a significant rate of 2.0% annually. Black males had significantly higher rates of colorectal cancer incidence compared to all other groups and experienced the smallest change over time with a decrease of only 0.5% annually. Conversely, white females had lower rates of colorectal cancer than any other group, and experienced a significant annual decrease of 1.5%. Black females had the second highest annual decrease in colorectal cancer rates at a significant 1.7%. Their rates were similar to that of white males.

For the latest five-year period of 2011-2015, black females experienced a significant decrease annually of 5.0% in colorectal cancer rates. Conversely, white females experienced a significant increase of 2.0% annually. While white females had the lowest colorectal cancer incidence rates, the increasing trend is cause for concern. The annual percent decreases for white males of 1.2% and for black males of 2.7% were not statistically significant.
The rates of female breast cancer are similar between white and black females. Both white and black women had an observed annual increase between 2003 and 2015. The annual percent increase over that period for white females was 0.5% which was not statistically significant. The rates for black females significantly increased at an annual rate of 1.1%. For the most recent five-year period between 2011 and 2015, the rate for white females slightly increased at 0.9% annually. Black women experienced a decrease of 1.7% annually. The changes for both groups were not significant for the period from 2011 to 2015.
Males had significantly higher rates of esophageal cancer than females. The rates were similar by race for each sex group. The annual percent change over the period from 2003 to 2015 for white males and black females was very small. For white males, the annual percent decrease was 0.9% and for black females was 0.8%. Black males had a statistically significant annual decrease of 3.5%. White females had an observed annual increase of 2.7%, though this increase was not significant.

For the latest five-year period of 2011 to 2015, the groups had no statistically significant changes, in part, due to the small numbers of esophageal cancer. Similar to the trend observed for the overall time period, white males and black males experienced an annual decrease. The annual decrease for white males was 4.8%, and the decrease for black males was a very small 0.5% annually. Similar to the overall time period, white females experienced an observed annual increase of 1.8%. While the overall trend for black females was relatively flat with a slight decrease, the last five years was quite different. During the period from 2011 to 2015, black females experienced an annual increase of 10.4%. The magnitude of the change appears large due to how few cases are seen in black females, but this observed trend was not statistically significant.
Like many of the other tobacco-related cancers, males had significantly higher rates of liver cancer than females. The rates were similar between the races for each sex group. All groups saw an increasing trend, but that trend was only statistically significant for white males. The annual percent change for white males was 4.6%. The rates for white females changed very little on average over the time period from 2003 to 2015 with an annual percent increase of 0.9%. The annual percent increase for black males was 2.4% and for black females was 1.9%.

For the most recent five-year time period from 2011 to 2015, the trends were also increasing for all groups with only white females having a statistically significant increase. In contrast to the significant increase over the full time period for white males, the period from 2011 to 2015 saw little change for white males with a small 0.4% annual increase. Conversely, white females over the full time period had a very small annual percent change, but they had a significant 10.8% annual percent increase over the period from 2011 to 2015. Though not statistically significant, black males experienced a 6.5% annual increase over the final five years, and black females experienced a 16.4% increase. The increase for black females seems large but is not statistically significant because of the small numbers of cases for black females. The increasing trends in liver cancer may be explained, in part, by advances in imaging that allow for better diagnosis of liver cancer.
Laryngeal cancer is a relatively rare cancer. Thus, the rates could not be broken down by both race and sex. This graph only displays the rates by race. Over the period from 2003 to 2015, the rates for both whites and blacks remained relatively constant. There was a slight annual decrease for whites of 0.9% and for blacks of 0.3%. For the latest five-year time period of 2011 to 2015, both groups also saw a decrease. For whites, there was an annual decrease of 6.1%, and for blacks, there was an annual decrease of 1.5%. None of these changes were statistically significant.
Definitions

Age Adjusting: A statistical method that allows comparisons of populations that take into account age-distributions differences between the populations. The 2000 U.S. standard population is used and applied to all of the time periods being considered. This assures that the rates do not reflect changes in the age distribution of the population.

Annual Percent Change (APC): The average annual percent change over several years. It is used to measure the change in rates over time. Calculating the APC involves fitting a straight line to the natural logarithm of the data when it is displayed by calendar year.

Statistical Significance: This is a mathematical measure of the difference between groups. A difference is said to be statistically significant if it is greater than what might be expected to happen by chance alone 95% of the time.

Citations


2Surveillance Research Program, National Cancer Institute SEER*Stat software (seer.cancer.gov/seerstat) version 8.3.5.

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