

Mortality estimates that exclude smoking status increases the calculated death risk for non-smokers, shows study

June 13 2023, by Justin Jackson



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Research led by the Geisel School of Medicine at Dartmouth, New Hampshire, has looked into mortality estimates due to various causes when accounting for smoking status.

In the paper "Updating the Know Your Chances Website to Include Smoking Status as a Risk Factor for Mortality Estimates," published in *JAMA Network Open*, the researchers assessed the weight and significance of [smoking](#) status, currently missing from the Know Your Chances interactive risk charts on the National Cancer Institute website.

Using data from the National Cancer Institute's Know Your Chances website, the researchers found that the chance of death due to causes like [heart disease](#), [lung cancer](#), and all causes combined can be altered dramatically by smoking status.

Data on risk in the Know Your Chances charts does not differentiate by smoking status but offers general mortality risk across populations. The study findings suggest that [mortality estimates](#) are too low for smokers and too high for non-smokers.

To make intelligent decisions about avoiding death, people need reliable information about the threats, the risks and some context as to how they should be compared. Often information on mortality is presented by age, sex, and race but rarely accounts for [smoking status](#), a significant risk factor for many causes of death.

To find the influence of smoking, the researchers pooled previously published data from five U.S. cohorts with 421,378 men and 532,651 women aged 55 or older. For smoking-related causes of death, the general population mortality estimates were found to consistently underestimate the risk for smokers and overestimate mortality for non-smokers and former smokers.

The authors give an example of a 60-year-old white male with a general population average death risk over ten years by any cause of 14.5%. If that individual were a lifelong non-smoker, the adjusted risk would be just 9.7%. A former smoker does slightly better than the general

population average at 13.2%, which is good news for folks who have quit successfully, as the alternative is much worse.

If the 60-year-old white male is a smoker, the risk jumps to 27.3%, nearly twice the [general population](#) average and almost three times the risk compared to a never-smoker. Similar patterns were discovered across age, sex, and race.

For lifelong non-smoking women, the ten-year risk of breast cancer mortality was slightly above all other causes after ages 30-35. For women who smoke, lung cancer and [coronary heart disease](#) took over as the leading causes of death.

According to the CDC, around 11.5% of Americans currently smoke cigarettes. That this small percentage of the population can so dramatically affect the statistical mortality risk rate, effectively obscuring accurate risk rates from 88.5% of the [population](#), is alarming.

The study findings could affect how research resource allocators choose which diseases to target or policymakers' attempts to fund solutions to the biggest threats to human health.

Avoiding [mortality](#) on a daily basis seems an easy enough task, but in the end, death will get everyone. The current study reminds us that it is not so much the thing at the end that gets us, but the daily behaviors that lead to a more likely end, and depending on our choices, a much shorter or longer life.

More information: Steven Woloshin et al, Updating the Know Your Chances Website to Include Smoking Status as a Risk Factor for Mortality Estimates, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.17351](#)

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