

# Smoking negatively impacts long-term survival after breast cancer

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A new study published in *JNCI Cancer Spectrum* finds that smoking negatively impacts long-term survival after breast cancer. Quitting smoking after diagnosis may reduce the risk of dying from breast cancer.

This study aimed to examine whether [smoking](#) at the time of diagnosis and changes in smoking within five years after diagnosis were associated with long-term [breast cancer](#) mortality.

In a study population of 1508 Long Island women with breast [cancer](#), subjects were interviewed and asked a variety of questions, including about [smoking status](#). At the five-year follow-up, participants responded to the same questions, which asked about the time period since the original questionnaire.

While breast cancer survival rates in the United States are high, estimated at 90% at five years after diagnosis, approximately 40,000 women will die from breast cancer in 2017. This makes breast cancer the second leading cause of cancer-related death among women.

Compared to never [smokers](#), the risk of all-cause mortality was elevated among the 19% of at-diagnosis smokers. Risk of all-cause mortality was further increased among the 8% of women who were at-/post-diagnosis smokers, but was reduced among the 11% women who quit smoking after diagnosis.

Compared to never smokers, smoking at the time of breast cancer diagnosis was associated with a 69% increased risk of all-cause mortality. Risk of all-cause mortality was increased 50% for current smokers who smoked fewer than 20 cigarettes/day and 85% for current smokers who smoked more than 20 cigarettes/day. All-cause mortality was also increased among former smokers and current smokers who had smoked for more than 30 years.

The risk of all-cause mortality was elevated 130% among women who continued smoking after diagnosis as compared to never smokers. Although risk of all-cause mortality remained elevated among women who quit smoking after diagnosis, the increase in risk of mortality was estimated at 83% compared to never smokers. Similar patterns were observed for risk of breast cancer-specific mortality, which was elevated 60% among women who continued smoking after diagnosis, but was not elevated among those who quit smoking, compared to never smokers.

The results of the study show that smoking negatively impacts long-term survival after breast cancer. For the 10 to 20% of women who are smokers at the time of breast cancer diagnosis, smoking cessation is one important behavioral change that may improve survival after breast cancer.

"Studies of smoking and breast cancer survival have generally focused on at-diagnosis smoking as a prognostic indicator," said the study's author, Dr. Humberto Parada of the University of North Carolina at Chapel Hill, "We considered the impact of post-diagnosis changes in smoking and show that quitting smoking after diagnosis may be important to improve survival among [women](#) with breast cancer. Future studies should continue to study the mechanisms by which smoking impacts [breast](#) cancer specific-survival."

Prospective survival cohorts such as this one "help quantify the mortality

burden faced by active smokers with malignancies not traditional thought to be smoking related," wrote Michael N. Passarelli and Polly A. Newcomb in an editorial accompanying the study. "Evidence that smoking cessation benefits even those who quit soon after diagnosis should serve as continued motivation for [breast cancer survivors](#) to pursue positive health behavior changes."

**More information:** "Post-Diagnosis Changes in Cigarette Smoking and Survival Following Breast Cancer," [DOI: 10.1093/jncics/pkx001](https://doi.org/10.1093/jncics/pkx001)

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