

Metformin may lower lung cancer risk in diabetic nonsmokers

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Lung CA seen on CXR. Credit: [CC BY-SA 4.0](#) James Heilman, MD/Wikipedia

Among nonsmokers who had diabetes, those who took the diabetes drug metformin had a decrease in lung cancer risk, according to a study in *Cancer Prevention Research*, a journal of the American Association for Cancer Research, by Lori Sakoda, PhD, MPH, research scientist at the Kaiser Permanente Division of Research in Oakland, California.

Some laboratory studies and a number of observational studies suggest that metformin may prevent cancer, but the data from human studies, however, are conflicting, explained Sakoda. The researchers conducted this study to further clarify the association between metformin use and lung cancer risk.

Sakoda and colleagues conducted a [retrospective cohort study](#) of 47,351 diabetic patients (54 percent men), 40 years or older, who completed a health-related survey between 1994 and 1996. Information on their diabetes medications was collected from electronic pharmacy records. About 46 percent of them were "ever-users" of metformin, defined as those who filled two or more prescriptions within a six-month period.

During 15 years of follow-up, 747 patients were diagnosed with lung cancer. Of them, 80 were [nonsmokers](#), and 203 were current smokers.

Metformin use was not associated with lower lung cancer risk overall; however, the risk was 43 percent lower among [diabetic patients](#) who had never smoked, and the risk appeared to decrease with longer use. Nonsmokers who used metformin for five years or longer had a 52 percent reduction in lung [cancer risk](#), but this finding was not statistically significant.

Metformin use for five or more years was associated with a 31 percent decrease in the risk for adenocarcinoma, the most common type of lung cancer diagnosed in nonsmokers, and an 82 percent increase in the risk for small-cell carcinoma, a type of lung cancer often diagnosed in

smokers, but neither of these findings were statistically significant.

In an interview, Sakoda said, "Metformin use was not associated with [lung cancer](#) risk when we looked at all patients with diabetes. However, our results suggest that risk might differ by smoking history, with metformin decreasing risk among nonsmokers and increasing risk among current smokers. Our results suggesting that the risk associated with metformin might differ by smoking history were unexpected. Additional large, well-conducted studies are needed to clarify whether [metformin](#) may be used to prevent lung or other cancers, particularly in specific subpopulations, such as nonsmokers."

Provided by American Association for Cancer Research

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