

# Possible benefit from online genetic testing for lung cancer

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As scientists continue to decode the human genome and the information becomes publicly available, private companies that offer online genetic testing are multiplying. Scientists at the National Institutes of Health were concerned that perhaps these tests posed a risk.

They evaluated responses to an online test among [smokers](#) who did or did not have a common genetic variant associated with risk for lung cancer. The results, published in a recent issue of *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research, raise a new set of questions, but also allay some of the early concerns.

"Up until now we have had a clear model for [genetic testing](#). You see a professional genetics counselor, undergo a battery of tests and that professional helps you interpret your results," said Saskia Sanderson, Ph.D., a postdoctoral fellow in the Department of Genetics and Genomic Sciences at Mount Sinai School of Medicine, who completed the study while working at the Social and Behavioral Research Branch of the National [Human Genome](#) Research Institute of the NIH.

"That model is coming under increasing pressure as more and more genetic information is generated, and as a greater number of genetic tests become available on the internet," said Sanderson. "What we found was encouraging in that people who got these online genetic results recalled them correctly, and no one regretted having taken the test; though it is important to remember that this was a small group of select smokers and

that others may respond differently."

Patients at higher risk genetically displayed short-term signs of decreased confidence that quitting smoking could reduce their risk of lung cancer, but scientists did note that all of those who took the test chose to receive at least one of several offered known smoking cessation aids.

"Genetic information is complex, and there is a risk that providing unfiltered information will result in heightened worry and misinterpretation of results," said Jamie Ostroff, Ph.D., chief of behavioral science services at Memorial Sloan-Kettering Cancer Center and an editorial board member of *Cancer Epidemiology, Biomarkers & Prevention*. "This pilot study found no harm in undergoing these tests and underscores the importance of conducting future research as to how to best educate smokers about gene-environment risks."

Scientists are reluctant to endorse the tests based on this one study, because the sample was limited to 44 individuals who were biologically related to people with lung cancer and who smoked. The online test assessed the presence or absence of the GSTM1 gene, the absence of which has been associated with a slightly increased lung cancer risk.

Exactly half of the smokers were missing GSTM1, thus presenting as higher risk and the other half had GSTM1 present. All the GSTM1 missing individuals correctly identified themselves as "higher risk." Of the GSTM1 present group, 55 percent accurately labeled themselves as "lower risk" while 41 percent interpreted their result as "average risk."

These patterns of accurate interpretation remained at six months, suggesting that these individuals retained the information.

Overall, the individuals taking this test found the results to be believable,

trustworthy, easy to understand, relevant and important. At follow-up, no one regretted taking the test.

After taking the test, all of the smokers selected some sort of smoking cessation help with no difference between the higher risk or lower risk groups. Scientists agreed that regardless of the genetic test result, quitting smoking is the single most important step a smoker can take in preventing [lung cancer](#) and that a larger comparison study would be needed to determine if knowledge of genetic risk encourages an individual to quit smoking.

Source: American Association for Cancer Research ([news](#) : [web](#))

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