It’s “Never Too Late” to See Survival Benefits from Quitting Smoking—Even With Late-Stage Cancer

New JNCCN study found that patients with Stage III or IV cancer who quit smoking gained nearly a full year of additional life over those who contiued.

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New research published online in JNCCN—Journal of the National Comprehensive Cancer Network finds that people with cancer who quit smoking had a much lower risk of dying within two years compared to those who kept smoking. The researchers followed more than 13,000 individuals with cancer, tracking whether they quit smoking in the first six months after being seen in clinic. The survival benefit was seen across all cancer types and stages, including stages III and IV, where treatment may be less curative. Despite these benefits, only about 1 in 5 smokers quit within six months of their visit.

The Cancer Center Cessation Initiative (C3I) implemented an electronic health record (EHR)-based tool for streamlining the process for doctors to assess smoking status and provide assistance with quitting—called ELEVATE—as part of the National Cancer Institute Cancer (NCI) Cancer Moonshot program. This study began on June 1, 2018, the same date C3I launched system-wide use of ELEVATE, and included every patient seen in participating oncology clinics regardless of cancer type, stage, or time since diagnosis. Of the 13,282 patients studied, 13% self-identified as currently smoking. Of those, 22.1% quit within the following six months. The study found that the people who continued smoking had a 97% higher risk of death within two years compared to those who quit smoking.

“Lifestyle change such as quitting smoking can prolong survival even more than some chemotherapies. Our research reinforces the idea that smoking cessation should be considered the fourth pillar of cancer care—alongside surgery, radiation therapy, and chemo/immunotherapy,” said lead author Steven Tohmasi, MD, MPHS, Siteman Cancer Center, based at Barnes-Jewish Hospital and Washington University School of Medicine in St. Louis. “Future cancer care must treat smoking cessation not as an optional extra, but as a core part of the treatment plan. By doing so, we can maximize survival, improve quality of life, and truly deliver comprehensive oncology care.”

“It is never too late, and no one is ever ‘too sick’ to quit smoking,” added senior author Li-Shiun

Chen, MD, MPH, ScD, Siteman Cancer Center, based at Barnes-Jewish Hospital and WashU Medicine. “Our study found that individuals with cancer who stop smoking after their diagnosis live significantly longer than those who continue smoking, even when their cancer is at an advanced stage. This data argues for an important paradigm shift to routinely include tobacco treatment as part of care in order to extend survival and improve outcomes for all people with cancer.”

The researchers noted that NCCN has free resources available to help guide important conversations between clinicians and patients about smoking cessation.

Dr. Tohmasi said: “The NCCN Guidelines for Smoking Cessation provide a trusted, evidence-based framework for delivering these interventions consistently across all cancer types and stages. They translate research into clear clinical steps, from assessing readiness to quit, to recommending effective medications, to offering behavioral counseling. Aligning practice with these guidelines not only standardizes care across providers but also ensures that each patient receives the most effective, science-backed treatment available. The NCCN Guidelines for Patients: Quitting Smoking further reinforce these efforts by giving patients accessible, easy-to-understand materials that can motivate and guide them between clinic visits.”

James M. Davis, MD, Associate Professor of Medicine and Medical Director for the Duke Center for Smoking Cessation, Duke Cancer Institute—a Member of the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) Panel for Smoking Cessation, who was not involved with this research—commented:

“Several things impressed me about this study—patients who quit smoking after their cancer diagnosis showed a two-fold lower rate of all-cause mortality. That is a huge effect. Because this is an observational study, we need to be careful about inferring causality—we can’t say with confidence that smoking cessation saved all of these people’s lives. We can say however, that in the context of what we already know about smoking and cancer, this study suggests a profound impact of smoking cessation before and after a person develops cancer.”

To read the entire study “Smoking Cessation and Mortality Risk in Cancer Survivorship: Real-World Data From a National Cancer Institute–Designated Cancer Center,” visit JNCCN.org.

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