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Catch it early, quit forever: a dual fight against lung cancer

While lung cancer screening can aid early detection once hurdles are overcome, quitting smoking remains the most effective preventive measure

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NOVEMBER IS LUNG CANCER AWARENESS MONTH, and efforts must be made to ensure both detection of cancer and smoking cessation activities are made available to all.

“I regret I didn’t quit smoking,” confessed Ajay (name changed), a 60-year-old man battling lung cancer. His habit began in engineering college, where the pressure to excel felt relentless. Over time, stress from work, relationships, and life’s challenges kept him hooked. Moments of joy -- *chai* with friends, reunions, and celebrations -- blurred the harm smoking causes. Through life’s changes, his cigarette remained a constant companion, until his oncologist uttered three devastating words - “*You have cancer.*” It was stage IV and he had only a few months left.

Unfortunately, the majority of lung cancer patients are **detected at a late stage**, when chances of survival plummet and treatment costs soar. Several challenges contribute to the diagnostic delay of lung cancer. For example, low awareness of lung cancer symptoms leads to a lag between symptom onset to first visit to a clinician. Often, early lung cancer symptoms could be mild and dismissed as respiratory issues. And in India, which is a tuberculosis-endemic country, the symptom overlap often leads to lung cancer being misdiagnosed as tuberculosis.

Timely lung cancer detection requires both effective screening and increased awareness of its symptoms. These include cough, loss of



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are red flags that require immediate referral to a specialist.

Lung cancer screening

The World Health Organization highlights the importance of screening high-risk individuals for early lung cancer detection. However, in low- and middle-income countries like India, health system barriers such as limited access to facilities, dearth of trained personnel, and financial constraints hinder implementation of effective and equitable lung cancer screening, leading to late detection.

Low-dose computed tomography (LDCT) is proven effective for lung cancer screening in high risk individuals. However, in the Indian context, nation-wide LDCT-based lung cancer screening is faced with several challenges. First, radiological similarities with tuberculosis lead to high false positive rates. Nevertheless, recent evidence suggests LDCT could be effective in tuberculosis-endemic regions. Second, availability of limited LDCT equipment and trained professionals. Third, an LDCT machine can cost up to ₹2 crore, creating a significant barrier to establishing such facilities, particularly in non-metro cities and rural areas. Fourth, the per test cost of nearly ₹7,000 is unaffordable in India, where half or more of healthcare expenses are still paid out-of-pocket.



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potentially improve accuracy, and distinguish lung cancer from tuberculosis. Portable AI-powered X-rays can boost screening in rural India, where 70% live and tobacco use is higher (as per NFHS-5), and can be an interim solution until LDCT infrastructure improves in India.

Smoking cessation

Smoking remains the leading preventable cause of lung cancer. Yet, as per the National Family Health Survey-5, 39% of men and 4% of women in India are smokers. While lung cancer screening can aid early detection once hurdles are overcome, quitting smoking remains the most effective preventive measure.

The reasons behind smoking initiation, continuation and failure to quit are multifactorial spanning personal drives, peer pressure, **weak anti-tobacco policies** and strong pharmacological effects of nicotine. Anyone who has smoked tobacco knows that quitting smoking is hard. It takes numerous quit attempts and only a fraction of users are successful in quitting smoking.

Smoking cessation often fails because most attempts are made without behavioral support, which significantly improves success rates. Behavioral support ranges from SMS reminders nudging users to quit, to active engagement through individual or group sessions, conducted in person or via video conferencing.



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being. Research shows that combining CBT with other cessation supports, including nicotine replacement therapy, exercise and financial incentives, significantly boosts success rates. In contrast to CBT, Acceptance Commitment Therapy is another behavioral approach that focuses on changing how individuals relate to their thoughts, rather than changing the thoughts themselves. Mindfulness-based interventions for smoking cessation aim to increase individual's awareness of their feelings, thoughts, beliefs and actions related to smoking.

To make smoking cessation scalable, almost 400 mobile apps, including one from the WHO, have been developed. However, **only a few are relevant** and provide evidence-based support to users. In India, the National Tobacco Control Programme offers free support for smoking cessation. Using mobile apps in tandem with behavioral approaches and nicotine replacement therapy can be a promising multi-pronged strategy to quit smoking.

Looking ahead

Although we are concluding Lung Cancer Awareness Month this November, it is important to continue the discussion on this important public health issue. Smoking shortens life by almost 10-11 years. In India, lung cancer is the second-leading cause of cancer-related deaths in men and the fourth in women. Beyond cancer, smoking dramatically elevates the risk of numerous other



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these costs.

In the absence of accessible and affordable lung cancer screening and effective anti-tobacco policies, quitting smoking is the most effective and individually responsible measure to prevent lung cancer. And the good news is, timely smoking cessation reverses much of the damage. To regain the years lost to smoking, the best time to quit is now.

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