Lung cancer is the leading cause of cancer deaths among men and women in the United States. Cigarette smokers are at markedly increased risk of developing this disease. Unfortunately, by the time the disease can be diagnosed, most cases are not curable because the cancer is so far advanced.

Eliminating smoking will prevent the vast majority of lung cancers and other cancers that affect the upper airways. However, people who have already been exposed, and people who cannot or will not stop smoking, present formidable challenges. For them, we need to develop new approaches that detect lung tumors early enough to be cured by surgery or radiation.

This issue of Einstein Cancer Center News describes a collaborative project that brings together a multidisciplinary team of scientists focused on detecting and defining the early defects in genes that lead to lung cancer and designing a strategy for reversing these genetic changes. What is particularly novel about this approach is that it is noninvasive: both diagnosis and treatment are carried out via the respiratory airway. This project, led by Dr. Roman Perez-Soler, is an example of “translational” research at the Albert Einstein Cancer Center, where promising discoveries that originate in the lab are evaluated in mouse models and then translated into initiatives in humans.