

Genetic Science Spotlight

ASCO: Lung Cancer in Non-smokers and Genetic Susceptibility

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Lung cancer has been a leading cause of death in the United States. Counterintuitively, more and more lung cancer patients have never smoked a single cigarette in their lifetime, especially the female patients. Several etiologic factors have been proposed for the development of lung cancer in non-smoker patients, including exposure to radon, cooking fumes, asbestos, heavy metals, and environmental tobacco smoke, human papillomavirus infection, and inherited genetic susceptibility. Family history of respiratory tract cancer in first-degree relatives was seen to confer an excess risk of lung cancer in multiple case control studies, where the risk was even higher for female non-smokers. In a later study of carcinogenesis of non-smoker lung cancer patients, over a dozen susceptible genes were identified:

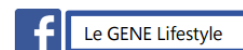
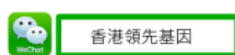
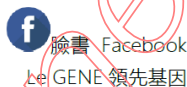
<i>AKT1</i>	<i>ALK</i>	<i>BRAF</i>	<i>DDR2</i>	<i>EGFR</i>	<i>KRAS</i>	<i>MAP2K1</i>
<i>NRAS</i>	<i>PIK3CA</i>	<i>PTEN</i>	<i>RET</i>	<i>RIT1</i>	<i>ROS1</i>	

With the genetic susceptibility information of healthy individuals, previously covert, at-risk patients can now be identified and followed by a personalized surveillances and prevention programs.

<https://www.ncbi.nlm.nih.gov/pubmed/25850996>

http://ascopubs.org/doi/full/10.1200/jco.2006.06.8015?utm_medium=cpc&utm_campaign=J_Clin_Oncol_TrendMD&utm_source=TrendMD&

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