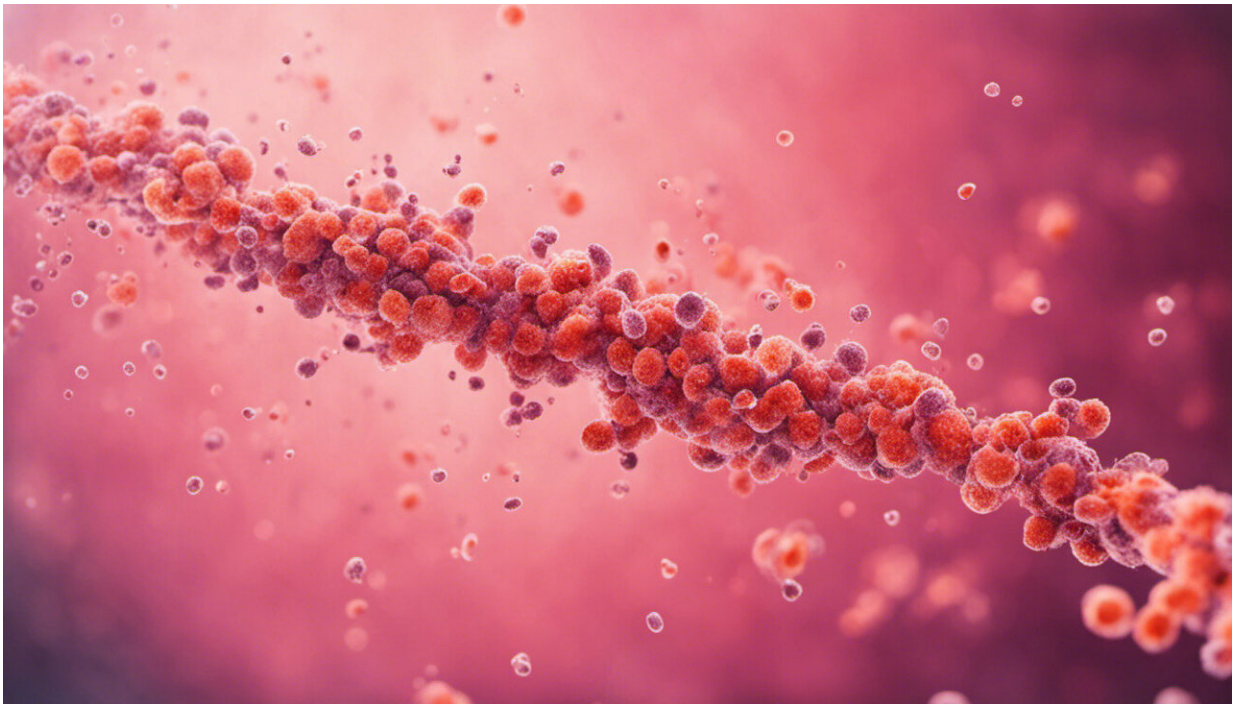


Vitamin A receptor may help protect lungs from smoking, viral infections

May 8 2015, by Ziba Kashef



Credit: AI-generated image ([disclaimer](#))

It's no surprise that smoking is bad for the lungs. But only 10%-20% of long-term smokers will develop serious conditions that affect breathing, such as emphysema and chronic obstructive pulmonary disease (COPD). To understand why, a Yale-led team studied the mechanisms that cause lung health to decline.

Led by assistant professor of medicine (pulmonary, critical care and sleep medicine) Dr. Charles S. Dela Cruz, the researchers focused on retinoic acid, a form of vitamin A that plays a key role in [lung](#) development and maintenance. By studying mouse models, the researchers found that exposure to cigarette smoke causes a key protein, IL-15, to significantly weaken a retinoic acid receptor. That weakening is further exacerbated by viral infections, which tend to be more severe in people with COPD.

The finding provides researchers with a strategy to restore retinoic acid's protective function and decrease lung damage. With this insight, scientists can develop potential therapies for patients suffering from [emphysema](#) and COPD, a leading cause of death in the United States.

The study appeared in April 29 in the *American Journal of Respiratory Cell Molecular Biology*.

More information: "Interleukin-15 Regulates Retinoic Acid Receptor Beta in the Lung During Cigarette Smoking and Influenza Virus Infection." *Am J Respir Cell Mol Biol*. First published online 29 Apr 2015 as [DOI: 10.1165/rcmb.2014-0448OC](https://doi.org/10.1165/rcmb.2014-0448OC)

Provided by Yale University

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