

# Age-related inflammatory processes facilitate development of COPD

June 17 2015

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At present, there is a lack of effective treatments that target the causes of chronic obstructive pulmonary disease (COPD). Scientists of the Comprehensive Pneumology Center (CPC) at Helmholtz Zentrum München are therefore investigating the molecular causes of COPD in order to intervene specifically. A recently published study in the journal *Oncotarget* is a contribution to understanding the underlying causes of COPD, especially in the elderly population.

Inflammatory processes in lung tissue play a crucial role in the development of COPD. The main cause is assumed to be a reaction of [lung tissue](#) to chronic exposure to toxic gases or particles such as from cigarette smoke. This results in excessive mucus production, cough and remodeling processes in the airways as well as the loss of alveoli, which are therefore no longer available for gas exchange. Increased activation of the immune system appear to be involved in these processes because the immune cell count in the lungs of COPD patients is significantly elevated.

Furthermore, premature aging of the lung cells is considered a factor favoring the development of COPD. To investigate this further, the research team led by Dr. Ali Önder Yildirim, Dr. Gerrit John-Schuster and Prof. Dr. Oliver Eickelberg at the CPC studied the influence of cells of the immune system on the development of COPD. They demonstrated in an animal model that there is an association between advancing age and increased inflammation processes, especially if the lung is additionally exposed to cigarette smoke. "Our results show that

age-related inflammatory changes play an important role in accelerated COPD development," said first author John-Schuster.

"The current scientific consensus is that both aging and [cigarette smoke](#) facilitate the development of COPD. However, the mechanisms that lead to this remain unclear," said study leader Yildirim. "We have shown for the first time that the immune response, especially in the aged lung, plays an essential role in the pathogenesis of the disease. This provides us with new directions for the development of innovative approaches to treatment."

**More information:** "Inflammaging increases susceptibility to cigarette smoke-induced COPD." [www.impactjournals.com/oncotar...  
article&op=view&path%5B%5D=4027&path%5B%5D=9625](http://www.impactjournals.com/oncotar...article&op=view&path%5B%5D=4027&path%5B%5D=9625)

Provided by Helmholtz Association of German Research Centres

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