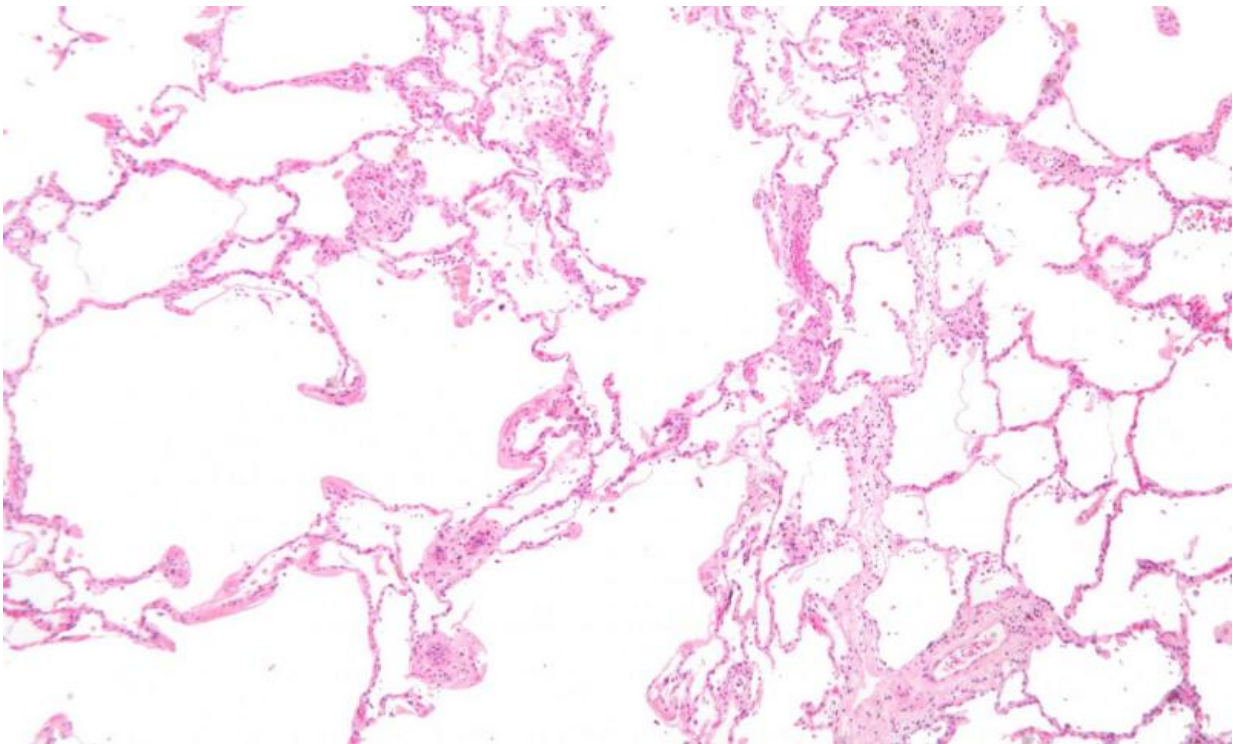


Risk of COPD may already occur in adolescence

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Micrograph showing emphysema (left – large empty spaces) and lung tissue with relative preservation of the alveoli (right). Credit: Wikipedia, CC-BY-SA 3.0

Chronic obstructive pulmonary disease (COPD) is one of most common causes of death in the world today - active smoking accounting for approx. 85% of all cases. Yet ground-breaking research from the University of Copenhagen indicates that accelerated decline of lung

function is not a prerequisite for COPD.

It has been generally assumed that all people suffering COPD experience an accelerated decline of [lung function](#), which is why so many large studies have focused on reducing this decline. However, this new study reveals that this is the case for only approx. 50% of patients with COPD, whereas the remaining 50% develop the disease with close to normal lung function decline.

"This long-term chronic disease can be developed in different ways, so achieving normal growth in lung function in early adulthood is an important factor in terms of future risk," says Peter Lange, Consultant in Respiratory Medicine at Hvidovre Hospital and professor at the Department of Public Health, University of Copenhagen.

The findings have just been published in the *New England Journal of Medicine*.

Ground-breaking study

For decades, the development of COPD has been ascribed to accelerated decline of lung function from a normal level achieved in young adulthood. However, this study indicates that not all at risk patients show accelerated lung function decline, which may explain why, so far, the effect of various treatments of lung function decline has been difficult to establish.

For the first time, the scientists could quantitate two major trajectories of lung function leading to COPD: the fast decline trajectory, where lung function declines very rapidly from a normal level, and the alternative trajectory where suboptimal development of lung function during childhood and adolescence is the major determinant of COPD in older age.

The study comprised data from three large cohorts, where individuals were subjected to repeated lung function measurements over the course of many years. In two of the cohorts, the longest follow-up period was approx. 25 years.

Longer-term benefits

The potential longer-term benefits of this study will include a better understanding of the development of COPD, which could play an important part in the prevention of new cases. The present study shows that the maximally achieved level of lung function in childhood and early adulthood is an important determinant of future COPD risk. "Thus, every effort should be undertaken to achieve normal growth of lung function including non-smoking during teenage years, treatment of asthma in childhood and reducing exposure to agents such as passive smoking," Professor Peter Lange concludes.

Provided by University of Copenhagen

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