

Prevalence of lung condition more than double WHO figures, students find

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Around 550 million people have chronic obstructive pulmonary disease (COPD), according to two University of Manchester medical students. The figure more than doubles the previous estimate of 251 million

people with the illness linked to smoking by the World Health Organization (WHO) Global Burden of Disease Study.

University of Manchester students Emily Hammond and Charles McDonald made the extraordinary discovery while researching the global impact of aspergillosis (an infection caused by *Aspergillus*, a type of mold) on COPD.

The findings have been published as "The global impact of *Aspergillus* infection on COPD," in *BMC Pulmonary Medicine*, the first published paper by both students.

Emily Hammond said: "COPD is the most widespread non-infectious disease of the lungs. It is progressive and irreversible. Advanced COPD often leads to hospitalization and sometimes invasive aspergillosis (IA), a serious and sometimes fatal form of aspergillosis. All this highlights COPD as a significant global health concern."

Data was initially collected from three large studies: The students reviewed the results of papers published worldwide between January 2000 and May 2019 that focused on hospitalization of patients with COPD, aspergillus sensitivity in COPD patients, and patients who developed IA.

Joint author, Charles McDonald said: "We used the GOLD (Global Initiative for Chronic Obstructive Lung Disease) system for Grading COPD and standardized criteria in multiple countries to re-estimate the prevalence of COPD."

Emily continued: "From the results of our analyses we re-estimated the global prevalence of COPD at 552,300,599 people (7.39% of the global population) with 339,206,893 (8.58%) in Asia, 85,278,783 (8.52%) in the Americas, 64,298,051 (5.37%) in Africa, 59,484,329 (7.77%) in

Europe and 4,032,543 (10.86%) in Oceania."

The current global burden of [disease](#) estimate for COPD deaths annually is 3,198,000 million. If untreated approximately 100% of people with IA die. Even with treatment for their condition 45% of patients with IA die. This new estimate which has identified aspergillosis as causing 500,000 to 1 million deaths annually, is a much larger problem than ever previously realized.

David Denning, a professor of infectious diseases in Global Health at the University of Manchester, said: "This is fantastic work by Emily and Charles. They have shown that not only is the prevalence of COPD much higher than previously estimated, but, overall COPD mortality may be higher than estimated and IA probably contributes to many deaths. Improved rapid diagnosis of IA is required in COPD hospital admissions to reduce mortality."

Professor Jørgen Vestbo, professor of respiratory medicine at The University of Manchester, said: "We have believed COPD to be the fifth leading cause of death in the UK with costs to the NHS of more than £1 billion per year. However, this discovery could be game-changing. It highlights the need to re-evaluate these figures and can only strengthen the requirement to develop personalized approaches for better diagnosis and treatment of COPD, one of the key aims of our Manchester BRC respiratory research."

More information: Emily E. Hammond et al. The global impact of Aspergillus infection on COPD, *BMC Pulmonary Medicine* (2020). [DOI: 10.1186/s12890-020-01259-8](https://doi.org/10.1186/s12890-020-01259-8)

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