

Black patients are diagnosed with, hospitalized for and die of pulmonary fibrosis at younger ages than white patients

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Pulmonary fibrosis is a devastating disease characterized by progressive scarring in the lungs, killing up to half of patients within five years of a diagnosis. Little is known about whether there are differences in how the condition affects individuals of different ethnicities.

New research at the University of Chicago Medicine has found that Black patients with [pulmonary fibrosis](#) are significantly younger than their Hispanic and white counterparts across a wide variety of disease metrics, including diagnosis, first hospitalization, lung transplant and death.

"Pulmonary [fibrosis](#) is a [deadly disease](#), and people are often diagnosed right around the time they retire," said Ayodeji Adegunsoye, MD, MS, Assistant Professor of Medicine at UChicago Medicine and lead author on the study, published March 10 in *JAMA Network Open*. "You can imagine how devastating it would be, to work diligently all your life and then as you are about to retire, you're diagnosed with a disease with a life expectancy of around three years. Anything that increases the mortality of this disease should be carefully examined."

The study examined data from four geographically distinct hospitals across the U.S. and followed the outcomes for over 4,500 patients between January 2003 and April 2021. The results found that Black patients were diagnosed with pulmonary fibrosis at an average age of 57.9 years, compared to 68.6 years for white patients. Black patients were also less likely to be male and more likely to be hospitalized compared to white and Hispanic patients, and were consistently younger at the time of their first hospitalization, lung transplant and death.

"I was driven to study this question through my work with patients with pulmonary fibrosis on the South Side of Chicago," Adegunsoye said. "This disease has no clear cause and no cure, but it is not a cancer; the [poor prognosis](#) made me wonder if Black patients are as affected by this

disease as whites, and whether or not they experienced different outcomes. And we saw that Black patients' experience with the disease is accelerated by about 10 years."

Pulmonary fibrosis has been linked to a number of risk factors, including a rheumatoid arthritis diagnosis, exposure to [air pollution](#), occupations that place an individual at high risk of inhaling particulate matter and smoking. The researchers believe the disparities seen in the study are likely linked to lifestyle and socioeconomic factors that put Black patients at a higher risk of environmental exposures.

"For example, Black people are more likely to live along transit corridors, exposing them to more air pollution," Adegunsoye said. "They're also more likely to be underinsured or uninsured. Being Black is not the health risk; it's the environmental and societal factors that make it difficult for Black patients to access high-quality care."

The results highlight the need for policy changes to raise awareness about the risks and symptoms of the condition and to encourage prophylactic screenings when warranted. Adegunsoye pointed to recent changes in the recommendations for colorectal cancer screenings, spurred by research showing that Black patients were more likely to be diagnosed at a younger age.

"These results are so profound that I believe we should be screening everyone for pulmonary fibrosis earlier, especially if a patient has any risk factors," he said. "If you can pick up the disease sooner, the outcomes will improve. We know more about the disease now than we did even 10 years ago, and while there is no cure, there are treatments available—some of them are as simple as changing your environment or wearing a mask to reduce environmental exposure, but there are also drugs that can slow the progression of the disease."

"People should be aware that not every cough is a sign of pulmonary fibrosis, but patients and their care teams need to evaluate such symptoms carefully. The earlier we can intervene in this disease, the longer we can give patients to enjoy their lives."

Adegunsoye and his research team are now investigating the [molecular mechanisms](#) and environmental exposures that may be contributing to the racial disparities seen in the study. Understanding how things such as pollution, diet and stress can alter human biology may help clarify why and how certain patients end up with pulmonary fibrosis, and whether there is an opportunity to intervene before it becomes deadly. They are also investigating whether contracting COVID-19 places patients at a higher risk of pulmonary fibrosis.

Outside of the lab, Adegunsoye says he simply wants patients to get what they need and when they need it, including understanding that protecting their lungs from pollutants and irritants is an easy step for preventing many types of pulmonary fibrosis.

"Something as simple as wearing a mask if you're working in a refinery or factory could help," he said. "People should understand that breathing clean air, as simple as it sounds, can make a huge difference."

More information: Ayodeji Adegunsoye et al, Evaluation of Pulmonary Fibrosis Outcomes by Race and Ethnicity in US Adults, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.2427](#)

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