

New findings suggest increased monitoring needed to prevent lung disease in underground coal miners

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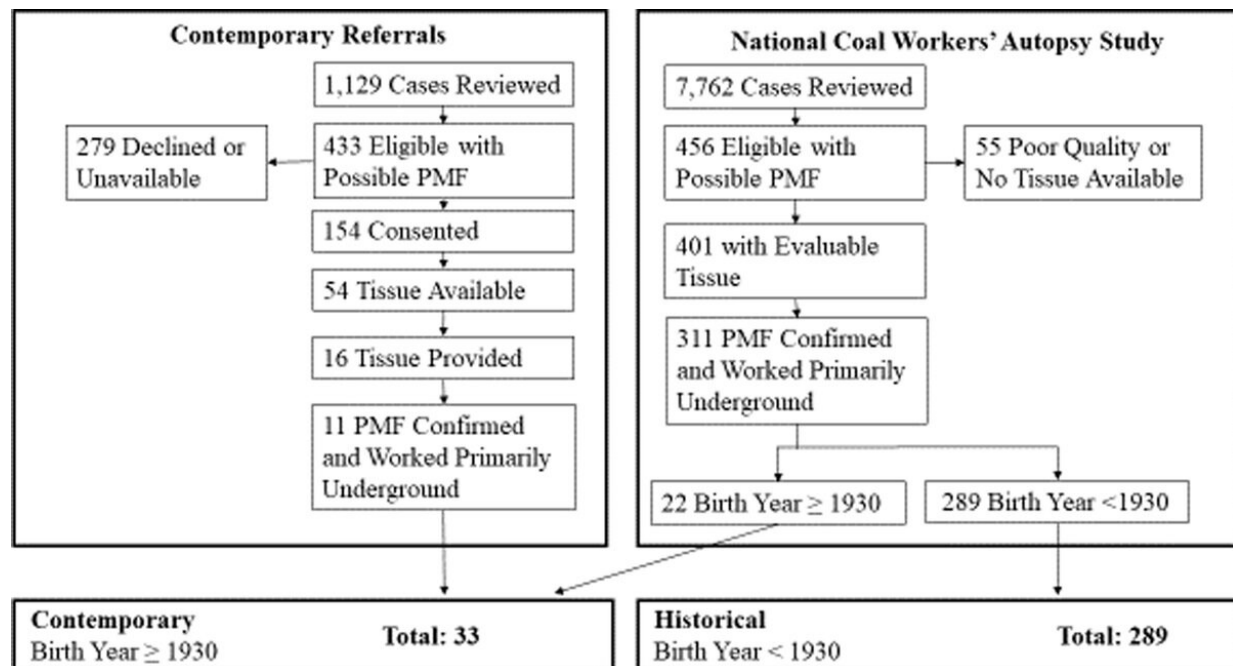


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For the past two decades, there has been a major resurgence in progressive massive fibrosis (PMF), (also known as black lung) among coal miners, leading researchers from National Jewish Health and across the country to examine what job duties might be putting them at risk. Current federal regulations require routine monitoring of dust levels in specific "high risk" jobs in underground coal mines, mainly jobs near the coal seam where coal is mined from surrounding rock.

During the study, crystalline silica, a component of [coal](#) mine dust, was found in the lungs of coal miners whose jobs had not been targeted for exposure monitoring based on current regulations during their working lives. Silica is a particular concern since it causes severe and irreversible lung scarring. These findings were published in the *Journal of Occupational and Environmental Medicine*.

Researchers examined [lung tissue](#) from deceased coal miners and compared findings across specific mining job duties to see which miners were at risk for severe black lung disease. They found that more recent coal miners with PMF (born after 1930 and working primarily with modern mining technologies) had worked significantly fewer years than historic miners (born before 1930) with PMF.



Flowchart of study sample selection. Credit: *Journal of Occupational & Environmental Medicine* (2023). DOI: 10.1097/JOM.0000000000002746

They also found that scarring from silica dust exposure was more common in contemporary miners, even those whose job duties were not prioritized for dust sampling in current federal regulations such as electricians and foremen.

"Our findings show the importance of monitoring silica exposure in coal miners whose job duties weren't previously considered high risk," said National Jewish Health researcher Lauren Zell-Baran, MPH, who was the lead author on the study.

"Severe black lung disease is incurable, disabling and entirely preventable," said Cecile Rose, MD, MPH, occupational pulmonologist at National Jewish Health and co-senior author of the study. "This study

underscores the need to control [silica](#) dust exposure for all coal miners."

More information: Lauren M. Zell-Baran et al, Mining Tenure and Job Duties Differ Among Contemporary and Historic Underground Coal Miners With Progressive Massive Fibrosis, *Journal of Occupational and Environmental Medicine* (2023). [DOI: 10.1097/JOM.0000000000002746](https://doi.org/10.1097/JOM.0000000000002746)

Provided by National Jewish Health

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