



# Black Lung Incidence Study

## SUMMARY

In 2022, the Chief Evaluation Office (CEO) partnered with the [Mine Safety and Health Administration \(MSHA\)](#) and commissioned contractor Summit Consulting, LLC (Summit) to conduct the Black Lung Incidence Study. This study examined the rate of black lung disease across the United States, how black lung incidence compares between populations of interest (Appalachia and the Navajo Nation) and coal mining or non-coal mining communities and how residential coal burning correlates with black lung incidence. To examine these factors, Summit conducted a literature review to explore the current state of knowledge on black lung disease—particularly black lung disease among populations of interest and the link between coal mining or residential coal use and black lung disease—and a statistical analysis of publicly available data from various time periods spanning 1970–2021 to identify black lung incidence, determine whether the factors related to higher rates of black lung disease can be distinguished, and design a series of predictive models that attempt to estimate black lung incidence across the United States.

This Department of Labor-funded study was a result of the learning agenda process. It contributes to the labor evidence-base to inform [data, methods, and tools](#) and [worker protection, labor standards, and workplace-related benefits](#) programs and policies and addresses Departmental strategic goals and priorities.

## KEY TAKEAWAYS

- The prevalence of coal workers' pneumoconiosis (CWP) has been increasing in the United States since the 1990s.
- The results of analyses in the Final Report show that black lung disease continues to be associated with unsafe practices in coal mining, residential coal burning, and air pollution through coal processing and transportation in the United States (based on data from the MSHA, CDC, Census, and the U.S. Energy Information Administration).
- Black lung disease is exponentially higher in counties where coal mining activity has been more predominant, especially those counties that have maintained coal mining practices since the 1970s and 1980s.
- The prevalence of black lung disease is highly concentrated in specific areas of the country, such as Appalachia. In the Navajo Nation where coal mining has historically been important to the economy and available studies show high levels of residential coal use, results regarding black lung disease prevalence were inconclusive, possibly due to underreporting in the Navajo Nation.
- While there is a correlation between residential coal use and black lung cases and deaths, this correlation does not imply a causal relationship between



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residential use and black lung disease. Residential coal burning is likely a confounding factor with other factors contributing to black lung disease, such as the number of local underground mines or family members working in the coal industry.

- While this study made advances in measuring the incidence of black lung disease in the United States, true incidence rates are difficult to estimate given data limitations, including challenges with diagnosis, underreporting, and data suppression in the publicly available datasets.

[SEE FULL STUDY](#)

**TIMEFRAME:** 2022-2023

**SUBMITTED BY:** Summit Consulting

**DATE PREPARED:** December 2023

**PARTNER AGENCY:** Mine Safety and Health Administration

**SPONSOR:** Chief Evaluation Office

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