

Evidence for silica exposure contributing to pneumoconiosis among modern working underground coal miners

Silica Exposure and Lung Disease in the Mining Industry: NIOSH/MSHA Respirable Mine Dust Virtual Workshop

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Outline

- Coal Workers' Health Surveillance Program
- Respirable coal mine dust analysis
- Evidence of silicosis among working coal miners
- Discussion



Coal Workers' Health Surveillance Program



Mean percent quartz in underground mine samples for central Appalachia and the rest of the United States, 1982–2017.



Doney et al. Respirable coal mine dust in underground mines, United States, 1982-2017. Am J Ind Med. 2019 Jun;62(6):478-485.

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Annual geometric and arithmetic mean of respirable quartz in surface mines by year, 1982-2017.



Doney et al. Respirable coal mine dust in surface mines, United States, 1982-2017. Am J Ind Med. 2019 Dec 9. doi: 10.1002/ajim.23074.

Lung Pathology in U.S. Coal Workers with Rapidly Progressive Pneumoconiosis Implicates Silica and Silicates





Cohen et al. Lung pathology in U.S. coal workers with rapidly progressive pneumoconiosis implicates silica and silicates. Am J Respir Crit Care Med. 2016

Percentage of r-type opacities, by region and decade, 1980–2018.



Conclusion

- The prevalence of r-type opacities in Appalachian coal miners continues to increase
- Apply and maintain effective measures to control coal mine dust and protect miners
- Screen working miners for pneumoconiosis

"The first priority and concern of all in the coal mining industry must be the health and safety of its most precious resource – the miner." Federal Coal Mine Health and Safety Act of 1969

The Faces of Black Lung II



NIOSH [2020]. Faces of Black Lung II. By Wolfe A, Yancheski M, Halldin C. Morgantown, WV: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2020–109D (revised 05/2020), https://doi.org/10.26616/NIOSHPUB2020109drevised052020

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