



Mortality of construction workers at U.S. Department of Energy nuclear sites: a follow-up study

Mortality of older construction and craft workers employed at Department of Energy (DOE) nuclear sites: Follow-up through 2021

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Overview

The Building Trades National Medical Screening Program (BTMed) provides health examinations for workers employed in construction activities at U.S. Department of Energy (DOE) nuclear weapons facilities. This study focuses on 26,922 BTMed participants, including 22,747 construction workers, such as electricians, laborers, and pipefitters, who have been exposed to a range of hazards—including asbestos, radiation, and silica—during facility construction, maintenance, renovation, demolition, and cleanup, comparing them to 2,218 non-construction workers engaged in work activities like security and science. Previous studies have identified elevated mortality risks associated with construction work exposures, particularly for all cancers of the lung, kidneys, and mesothelioma, as well as chronic obstructive pulmonary disease (COPD). This follow-up study, using data from 1998 to 2021 and including 8,367 deaths, compares mortality rates among construction workers and non-construction subpopulations at the DOE sites.

Key Findings

- Former DOE construction workers had elevated mortality from all causes, including all cancers, mesothelioma, lung diseases such as chronic obstructive pulmonary disease (COPD), asbestosis, transportation injuries, and other injuries, such as accidental poisonings. Internal analyses comparing construction workers to non-construction workers found significant excess mortality for all causes, all cancers, lung cancer, and COPD while controlling for important confounders, including smoking.
- Workers first employed after 1990 experienced significant elevation in occupational mortality risk, challenging the common perception that after 1995, DOE facilities have been in full compliance with existing safety and health requirements.
- The risk of mortality from transportation injuries was significantly elevated, especially among teamsters, laborers, and other trades.
- Accidental poisoning mortality was significantly increased, attributed in part to the opioid epidemic, although the study noted a reduction in the overall risk of accidental poisoning deaths within the participants.
- The high cancer risks identified are aligned with the types of cancers which qualify for federal compensation due to radiation exposures.
- The study emphasizes the importance of ongoing health monitoring for early intervention and prevention of occupational illnesses--in particular, the importance of lung cancer screening.

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Read the abstract:

doi.org/10.1002/ajim.23567

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