What Medical Screenings Indicate about Changes in Construction Worker Health

How much have adverse occupational health outcomes among construction workers improved over time? Evidence from 25 years of medical screening

Knut Ringen, John Dement, Laura Welch, Patricia Quinn. American Journal of Industrial Medicine, November 2022.

Overview

Construction workers have always had a disproportionately high risk of occupational illness. Using data from medical screenings of former construction workers at U.S. Department of Energy nuclear facilities, researchers examined how health outcomes have changed over the past 60 years. They focused on assessing the change in risk for respiratory diseases, for lung cancer mortality, and for hearing impairment, factoring in the time period the worker began in the construction trades. Over 15,000 workers were included in each outcome studied, and researchers analyzed relative risk by decade adjusted for age, sex, smoking, and years of construction trade work.

Key Findings

- This study found that stronger occupational health protections have had a significant impact on construction workers, as shown by reduction in the risk for occupational disease over the time period studied.
- The greatest reductions in occupational disease are for outcomes when there were strong regulatory and legal incentives to reduce exposures, such as those illnesses associated with asbestos, silica, and vapors, gases, dusts, and fumes (VGDF).
- The smallest improvement—declining only 20 percent—was for hearing impairment, for which little regulatory enforcement has been adopted.
- Risks started to decline in the 1960s, with greatest reductions among workers first employed after 1970.
- The improvements in health have been substantial but there remains ample room for further progress.

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Read the abstract:
https://bit.ly/40ZrpEZ

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RESEARCH ARTICLE

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How much have adverse occupational health outcomes among construction workers improved over time? Evidence from 25 years of medical screening

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Abstract

Background: Construction workers have always had a high risk of occupational illnesses. We used 25 years of data from a medical screening program serving older construction workers to determine how much health outcomes have improved over the past 60 years.

Methods: We investigated changes in relative risk for chest radiographs consistent with pneumoconiosis, COPD by spirometry, lung cancer mortality, and audiometry-assessed hearing impairment among workers participating in a medical screening program. Results were stratified by decade of first construction employment: before 1960, 1960–1969, 1970–1979, 1980–1989, and after 1990. Poisson and Cox regression analyses assessed relative risk by decade adjusted for age, sex, smoking, and years of construction trade work.

Results: Subjects were 94% male and, on average, 60 years old with 25 years of construction work. When compared to workers employed before 1960, those first employed after 1990 experienced the following reductions in model-adjusted relative risks: chronic obstructive pulmonary disease, 32%; all pneumoconiosis, 68%; parenchymal abnormalities, 35%; pleural abnormalities, 71%; hearing impairment, 20%; and lung cancer mortality, 48%. Risks started to decline in the 1960s with greatest reductions among workers first employed after 1970.

Conclusions: This study demonstrates the positive impact that adoption of occupational health protections have had over the past 60 years. The greatest risk reductions were observed for outcomes with strong regulatory and legal incentives to reduce exposures and associated risks, such as those associated with inhalation hazards (asbestos and silica), while lowest improvement was for hearing impairment, for which little regulatory enforcement and few prevention incentives have been adopted.

KEYWORDS

BTMed, construction trades, COPD, DOE, hearing impairment, lung cancer, parenchymal changes, pneumoconiosis, surveillance

