Improving early detection of lung cancer among construction workers

Lung cancer mortality among construction workers: implications for early detection

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Overview

The Building Trades National Medical Screening Program (BTMed), a service delivery program administered by CPWR, provides screenings for construction workers previously employed at U.S. Department of Energy (DOE) nuclear weapons facilities, where they were exposed to hazards such as asbestos, beryllium, radiation, silica, and welding fumes. Previous studies found these workers face elevated mortality from multiple causes, including all cancers, asbestosis, chronic obstructive pulmonary disease, and mesothelioma. Researchers examined the records of 17,069 BTMed participants—including 352 who died from lung cancer—to identify predictors that would better define eligibility for low-dose CT scans which have demonstrated a 20% reduction in lung cancer mortality. The risk factors considered included age, beryllium sensitization, body mass index (BMI), chest X-ray results, cigarette smoking, a family history of cancer, gender, personal history of cancer, race/ethnicity, respiratory symptoms, spirometry results, and years of trade or DOE work.

Key Findings

■ The most predictive risk model included age, smoking, chest X-ray changes, abnormal lung function, respiratory symptoms, body mass index, personal history of cancer, and having worked five or more years at a Department of Energy site or in construction.

■ Risk-based, low-dose CT (LDCT) eligibility using the study model demonstrated improved sensitivity, specificity and positive predictive value compared with current guidelines from the U.S. Preventive Services Task Force, an independent panel of experts that make evidence-based recommendations intended to help primary care clinicians and patients decide together whether a preventive service is right for a patient's needs.

■ The study found that the risk of lung cancer death from five years of work in the construction industry or at a DOE site was comparable with the risk from a personal cancer history, a family history of cancer, or a diagnosis of COPD.

■ BTMed LDCT eligibility criteria used for DOE construction workers, which includes factors beyond age and smoking, identified 86% of participants who eventually would die from lung cancer, compared with 51% based on age and smoking alone

■ Results support inclusion of risk from occupational exposures and non-malignant respiratory clinical findings in LDCT clinical guidelines.

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Read the article:
https://bit.ly/3aYyJqY
Read more about the health of BTMed participants:
https://bit.ly/3aZVwD1
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