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Asbestos-Related Pulmonary Disease in Boilermakers

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Boilermakers are skilled building tradesmen who construct, repair, and dismantle boilers. The present study reports on the evaluation of members of a Michigan boilermaker's union for the presence of signs and symptoms of chronic pulmonary disease. Study variables included standardized evaluations of chest x-ray findings, pulmonary function testing, physical examination, and respiratory symptoms. An overall participation rate of 69% was achieved. A non-participant survey identified no significant differences between participants and non-participants in dyspnea, cough, age, or smoking history. Among participants with greater than 20 years experience in the trade, the mean FVC was 91% of predicted; the FEV₁ was 86% of predicted; 25% showed at least a 1/0 profusion of interstitial markings on chest x-ray; 30% had bilateral pleural abnormalities; and 52% had audible inspiratory rales on physical examination. Forced vital capacity and forced expiratory volume at one second both decreased with years in the trade. Chest x-ray findings of interstitial fibrosis and pleural plaques were related to ten or more years in the trade, as were respiratory symptoms of pulmonary rales, wheeze, and dyspnea.

Key words: asbestosis, interstitial fibrosis, pleural plaques, pulmonary function

INTRODUCTION

Boilermakers are members of the skilled construction trades who perform assembly, repair, and dismantlement of boilers. Boilermakers work closely with other members of the skilled construction trades, including insulators, pipefitters, sheet-metal workers, and laborers. Boilermakers commonly remove asbestos-containing insulation materials in order to access boiler services for repair work. Though they rarely apply asbestos-containing materials directly, they often work in proximity to those operations. Work days of boilermakers are frequently spent in closed and non-ventilated environments.

A mortality study conducted among boilermakers in the State of Washington identified an excess mortality from chronic lung disease but did not specify that the

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