

## **EFFECTS OF EXPOSURE TO WELDING FUME ON LUNG FUNCTION - RESULTS FROM THE GERMAN WELDOX STUDY**

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**Introduction:** The association between exposure to welding fume and chronic obstructive pulmonary disease (COPD) is poorly understood. We studied the influence of exposure to welding fume on lung function parameters.

**Methods:** We investigated forced expiratory volume in one second (FEV<sub>1</sub>), forced vital capacity (FVC), and FEV<sub>1</sub>/FVC in 219 welders. We measured current exposure to respirable particles and calculated a worker's lifetime exposure considering the welding techniques, working conditions and protective measures at current and former workplaces. Multiple regression models were applied to estimate the influence of age, smoking, and exposure to welding fume on lung function.

**Results:** Age- and smoking-adjusted lung function parameters showed no decline with increasing duration, current exposure level, and lifetime exposure to welding fume. However, 15% of the welders had FEV<sub>1</sub>/FVC below the lower limit of normal.

**Conclusions:** Based on exposure estimates we did not observe an association of FEV<sub>1</sub>/FVC as indication of obstructive lung disease and exposures to respirable particles in welders.