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Prevalence of parkinsonism and relationship to exposure in a large sample of Alabama welders

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Objective: To estimate the prevalence of parkinsonism in welders in Alabama and to compare this prevalence with that in a general population sample.

Methods: The authors screened 1,423 welders from Alabama who were referred for medical-legal evaluation for Parkinson disease (PD). Standardized videotaped assessments using the Unified Parkinson's Disease Rating Scale motor subsection 3 (UPDRS3) were obtained. Patients provided information regarding exposure to welding fumes and job titles. Job titles were matched with Department of Labor Standard Occupational Codes (SOCs). Diagnoses were assigned based on quantitative criteria for the diagnosis of PD using two thresholds for diagnosis. With use of the number of active welders in this screening with parkinsonism as the numerator and the age-adjusted number of welders in each SOC as the denominator, the prevalence of parkinsonism in Alabama welders was estimated using conservative assumptions and compared with general population data from Copiah County, MS.

Results: With use of conservative and liberal case definitions of parkinsonism, the estimated prevalence of parkinsonism among active male welders age 40 to 69 statewide was 977 to 1,336 cases/100,000 population. The prevalence of parkinsonism was higher among welders vs age-standardized data for the general population (prevalence ratio = 10.19, 95% CI 4.43 to 23.43).

Conclusion: The estimated prevalence of parkinsonism was higher within a sample of male Alabama welders vs the

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general population of male residents of Copiah County, MS.

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