

## **Occupation and the Risk of Adult Glioma in the United States**

**AJ De Roos, PA Stewart, MS Linet PD Inskip**

**Division of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, MD**

Previous studies have observed increased glioma incidence associated with employment in the petroleum and electrical industries, and in farming. Several other occupations have also been associated with increased risk, but with rather inconsistent results between studies. We evaluated associations between occupational title and glioma incidence in adults. Cases were 489 patients with glioma diagnosed from 1994 to 1998 at three United States hospitals. Controls were 799 patients admitted to the same hospitals, treated for non-malignant conditions. An experienced industrial hygienist grouped occupations that were expected to have similar tasks and exposures. The risk of adult glioma was evaluated for those subjects who ever worked in an occupational group for at least six months, those who worked longer than five years in the occupation, and those with more than ten years latency since starting to work in the occupation. Several occupational groups were associated with increased glioma incidence for having ever worked in the occupation, including butchers and meat cutters (odds ratio [OR]=2.4; 95% confidence limits [CL]: 1.0, 6.0), computer programmers and analysts (OR=2.0; 95% CL: 1.0, 3.8), electricians (OR=1.8; 95% CL: 0.8, 4.1), general farmers and farmworkers (OR=2.5; 95% CL: 1.4, 4.7), inspectors, checkers, examiners, graders, and testers (OR=1.5; 95% CL: 0.8, 2.7), and investigators, examiners, adjustors, and appraisers (OR=1.7; 95% CL: 0.8, 3.7), physicians and physicians assistants (OR=2.4; 95% CL: 0.8, 7.2), and store managers (OR=1.6; 95% CL: 0.8, 3.1), whereas occupation as a childcare worker was associated with decreased glioma incidence (OR=0.4; 95% CL: 0.2, 0.9). These associations generally persisted when the subjects worked longer than five years in the occupation, and for those with more than ten years latency since starting to work in the occupation. Further investigation into specific tasks and work practices in these jobs provided clues about high-risk behaviors, such as not wearing gloves for butchers, and raising livestock or personally applying pesticides for farmers. This is our first analysis of occupation and will guide future exposure-specific assessments.