

PREVALENCE AND WORK-RELATEDNESS OF SELF-REPORTED CARPAL TUNNEL SYNDROME (CTS) AMONG U.S. WORKERS - AN ANALYSIS OF 1988 NATIONAL HEALTH INTERVIEW SURVEY, OCCUPATIONAL HEALTH SUPPLEMENT

S. Tanaka, D. Wild, P. Seligman, V. Behrens, V. Putz-Anderson

National Institute for Occupational Safety and Health (NIOSH),
4676 Columbia Parkway, Cincinnati, Ohio 45226

Since the mid-1980's the Bureau of Labor Statistics has reported a sharp increase in the incidence of repetitive trauma injuries or cumulative trauma disorders (CTDs) among the U.S. workers. To estimate the magnitude of self-reported carpal tunnel syndrome (CTS) nationally, data from the Occupational Health Supplement of 1988 National Health Interview Survey (NHIS) were analyzed.

Among 127 million "recent workers" (those who worked during the 12 months prior to the survey), the prevalence rate for self-reported CTS was 1.47% (95% CI 1.30; 1.65). The demographics and work-relatedness of self-reported CTS are described for the subset of 1.62 million "recent workers" with CTS who experienced hand discomfort for one or more days.

The prevalence rate of CTS was 1.63% for females (95% CI 1.39%; 1.87%) and 0.97% for males (95% CI 0.77%; 1.18%). The female/male rate ratio for CTS was 1.7. The median age among those reporting CTS was 40 for females and 38 for males.

Occupational categories with the highest prevalence rates of self-reported CTS were: [1] mail and message distributing (3.24%), [2] health assessment and treatment (2.74%), [3] construction and extractive trades (2.49%), [4] fabricators, assemblers, and inspectors (2.44%), and [5] precision production occupations (2.22%).

Industrial categories with the highest prevalence rates were: [1] manufacturing of food and kindred products (2.46%), [2] repair services (2.40%), [3] transportation industry, excluding railroad and trucking (2.34%), [4] construction (2.11%), and [5] manufacturing

of transportation equipment (mostly automobile) (2.08%).

Among individuals who reported repetitive bending or twisting of the hand and wrists at work, 2.01% (95% CI 1.72; 2.30) reported CTS, compared to 0.55% (95% CI 0.42; 0.68) of those without such exposure (rate ratio: 3.7). Among those who used vibrating tools, 2.03% (95% CI 1.50; 2.56) reported CTS, while 1.11% (95% CI 0.95; 1.27) of those who did not use vibrating tools reported CTS (rate ratio: 1.8).

When the separate and combined effects of these two stressors were examined on male workers, 2.55% (95% CI 1.82; 3.28) of those who were exposed to both stressors reported CTS, while 1.23% (95% CI 0.86; 1.61) of those exposed to bending/twisting only, or 0.46% (95% CI 0.00; 0.99) of those exposed to vibrating tools only, and 0.49% (95% CI 0.32; 0.67) of those exposed to neither stressor self-reported CTS. Female workers showed a similar trend but none of the differences was statistically significant, probably due to small number of those exposed to vibrating tools.

When the relationship of the daily length of bending/twisting of the hands/wrists at work and prevalence rate of CTS was examined (both men and women together), those not exposed had a prevalence rate of 0.73% (95% CI 0.57; 0.88), compared to 1.97% (95% CI 1.23; 2.71) among those exposed for up to 3 hours, 2.07% (95% CI 1.42; 2.71) among those exposed from 3 to 6 hours, and 2.40% (95% CI 2.05; 2.75) among those exposed for 6 hours or more, suggesting a "plateau effect" rather than a step-wise increment.

The NHIS identified occupations and industries with high risk of CTS and supports the relationship between ergonomic stressors and development of this condition. Periodic surveys can be used to monitor trends in disease and identify risk factors and high risk industries/occupations, toward which prevention efforts should be directed.



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