

Stevens JC, Witt JC, Smith BE, Weaver AL. The frequency of carpal tunnel syndrome in computer users at a medical facility. Neurology 2001;56:1568-1570.

Design: Cross sectional survey

Population/sample size:

- 257 employees (out of 314 invited) of Mayo Clinic in Arizona who agreed to participate in study of computer use in relation to carpal tunnel syndrome completed questionnaire about computer use and hand paresthesias
- 181 reported no paresthesias and did not undergo medical examination; 76 reported paresthesias and were invited for examination; 70 accepted and were examined with nerve conduction studies

Main outcome measures:

- CTS identified on basis of nocturnal awakening, hand paresthesia while driving, hand paresthesia while reading, and relief by shaking hand
- Definite CTS was 2 or more positive responses to above questions; possible CTS was 0 or 1 positive response to above and distribution of paresthesias consistent with CTS; nerve conduction done unless it was obvious that CTS was not cause of symptoms
- Nerve conduction was considered positive or normal using the 1997 American Academy of Electrodiagnostic Medicine published criteria
- Among 76 workers reporting hand paresthesias, 27 were diagnosed with CTS (18 possible, 9 definite)
- Comparison of questionnaire responses of 27 CTS cases and 222 non-cases revealed no significant differences between cases and non-cases with respect to age, sex, occupation, hours/years at keyboard or typewriter, or mouse use

Authors' conclusions:

- Carpal tunnel syndrome not significantly associated with keyboard use, and keyboarding not likely to be causative of CTS

Comments:

- Hours at keyboard may not strongly correlate with degree of hand use if keystrokes per hour are not measured
- Inclusion of the 49 non-CTS hand paresthesia among the 222 non-cases may have effect on difference measure, if the development of these paresthesias is related to keyboarding; this could inflate the apparent keyboard use among non-cases and weaken any actual difference between workers with and without hand complaints (not likely to be a large effect, however)
- Table 2 mouse use data reported as non-significant; however, this is true only if the categories of mouse use are treated as nominal categories; if they are treated more appropriately as ordered categories, then there is an association between mouse use and CTS ($p=.04$)

Assessment: For an evidence statement that CTS is unlikely to be caused by keyboarding:
inadequate (no quantification of keyboard use)
For an evidence statement that mouse use is associated with CTS: adequate