

**The Economic Burden of Carpal Tunnel Syndrome:  
Long-Run Earnings of CTS Claimants in Washington  
State, 1993-94**

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## **Executive Summary**

### **Objectives:**

This study examines the long-term loss of earnings of a cohort of CTS claimants from 1993-94 over a period of six years following their claim. This is to highlight the magnitude of these losses as compared to those measured only by the direct costs of workers' compensation in order to underscore the importance of efforts by business, labor and government to prevent CTS, to attain early diagnosis and treatment of CTS cases, and to accommodate workers to an early and safe return to productive employment.

### **Methods:**

We compared the reported quarterly earnings of workers who filed claims with the State Fund in 1993 or 1994 for CTS to those of workers who filed claims for either an upper-extremity fracture or a medical-only dermatitis condition. We selected 4443 CTS claimants, 2544 fracture claimants and 1773 claimants with medical-only dermatitis. We linked each selected claimant by SSN to their quarterly earnings data from the Employment Security Department to produce for each claimant a ten-year earnings profile bracketing the quarter in which they filed their claim. Other predictors of earnings, such as age, gender, region and treatment received, were drawn from the claims file for each case. Comparing the excess earnings losses of CTS claimants to those of the other two cohorts gives us a lower bound estimate of the magnitude of the CTS-related loss. Multivariate linear regression and logistic regression methods were used to isolate the effect of injury type on earnings from that of other predictors.

### **Results:**

We find that CTS claimants on average endure periods on workers' compensation time loss more than three times longer than do claimants with upper extremity fractures; they also recover to their pre-injury earnings level at a rate of about half that of claimants with either dermatitis or upper extremity fractures. Those CTS claimants with specific ANSI codes which define CTS as the primary injury have shorter time loss and better earnings recovery than those with only a diagnosis code on one of their medical bills consistent with CTS. We find that CTS claimants who have carpal tunnel release surgery have better earnings recovery than those who don't have surgery. We also find that the probability of having a carpal tunnel release surgery is higher for workers with high pre-injury earnings; it is also higher for men and for older workers; and it is higher if the worker resides outside of the Puget Sound region.

Time loss is higher for older workers than younger workers; higher for workers employed by smaller businesses; and higher for workers in non-fixed industries, such as construction or transportation.

Recovery of earning potential following injury is better for younger workers than older workers; better for workers with stable pre-claim employment histories; better for workers in the Puget Sound area; better for workers employed by large businesses; and better for workers in fixed-site industries. High pre-injury earnings are associated with shorter time loss and better return to pre-injury earnings levels, especially for claimants with CTS. This advantage remains significant even when controlling for the higher frequency of surgery among the higher income claimants.

Finally, the cumulative excess loss of earnings of the 4,443 CTS claimants we studied amounted to between \$203 million and \$309 million over the six years following their claim, a per claimant loss of between \$46,000 and \$70,000.

The results of this study show the devastating economic impact which CTS can impose on workers and their households. It also underscores the importance of prevention, early diagnosis, treatment and accommodation for return to work.