

CTS

Prevention of Carpal Tunnel Syndrome in California



THE SENSOR PROJECT

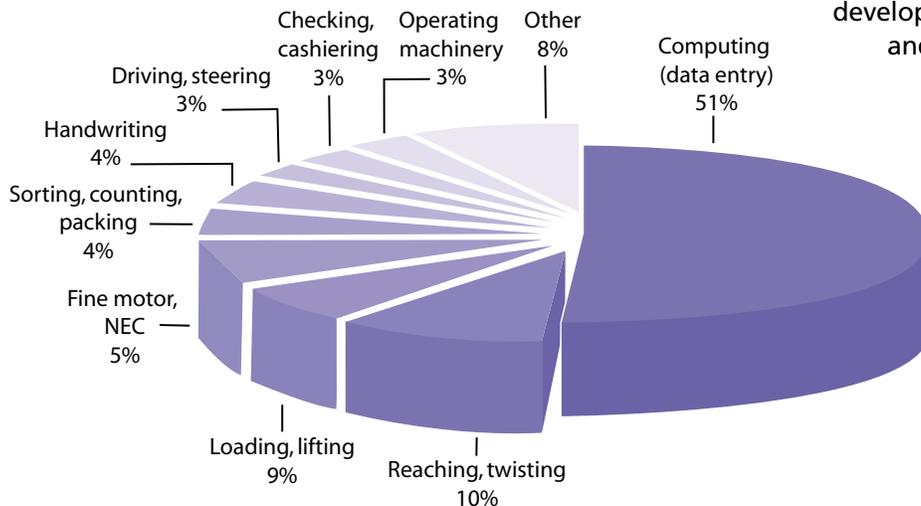
The importance of carpal tunnel syndrome (CTS) as a public health problem is well documented. CTS has been shown to take a tremendous toll in terms of long term disability, impact on the workforce, and cost. The average cost per case of upper extremity cumulative trauma disorder is estimated to be \$8,000 to \$10,000. Carpal tunnel syndrome is one of the most costly MSDs in terms of lost and restricted work days, surgery, rehabilitation and retraining. Since the early 1980's, disorders

associated with repeated trauma steadily increased as a proportion of total illness cases. These disorders account for over 60% of all reported occupational illnesses. According to the National Occupational Research Agenda update, "Musculoskeletal problems are the largest single problem facing American workers today, costing between \$13 and \$20 billion annually."

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Type of Activity Surveillance of Occupational CTS in California

N= 5,058 representing 15,174 cases
 (1/3 of cases are missing activity information)



California receives funding from the National Institute for Occupational Safety and Health (NIOSH) to conduct surveillance of occupational CTS. The California Department of Health Services' Sentinel Event Notification System for Occupational Risks (SENSOR) program was developed to identify cases of occupational CTS, characterize risk factors, develop interventions in the workplace, and devise prevention strategies.

California law requires that physicians file a Doctor's First Report of Occupational Injury or Illness for each case of suspected illness or injury caused on the job. The SENSOR program depends upon Doctor's First Reports for case identification. These reports constitute a sentinel event,

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providing an opportunity for follow-up, investigation and prevention. Over 15,000 occupational CTS cases were identified in California from 1998 through 2000, illustrating the significance of the problem in California. Cases were reported from every region of the state. Workers reported to have occupational CTS were 75% female and 25% male, compared with the California workforce which is 44% female and 56% male. An evaluation of the work task associated with each worker's injury showed that 51% of all cases reported computer use as the suspected cause of their CTS.

The overall rate of occupational CTS by industry is 35 cases per 100,000 workers, with particularly high rates in electric, gas and sanitary services (206/100,000); communications (124/100,000); manufacturing of lumber and wood products (121/100,000); local passenger transportation (104/100,000); heavy construction (82/100,000); and food stores (108/100,000). Occupations with particularly high rates include utility customer service order clerks (397/100,000); cake decorators (354/100,000); billing, posting, and calculating machine operators (313/100,000); social welfare eligibility clerks (271/100,000); police and detective supervisors (239/100,000); and electrical power installers and repairers (200/100,000). An evaluation of the case ascertainment source used for these estimates suggests that it may significantly undercount cases, and that the actual overall rate is as high as 97/100,000. Some of the industries and occupations with the highest rates of CTS are among the fastest growing sectors in the economy, indicating that the extent of the problem is likely to increase over time.

Ergonomic improvements can have a significant impact on preventing CTS.

Research has shown that ergonomic improvements can have a significant impact on preventing CTS, and the surveillance system provides mechanisms for prevention on a targeted case-by-case basis, as well as through larger industry and occupation-based

CASE STUDY

Customer Service Representative

A 34-year old female who works as a customer service representative for an answering service presented to her doctor with a one-year history of increasing pain and tingling sensation in both hands, especially after work. Her job for the previous 10 years required rapid typing while responding to client calls. Physical examination was significant for positive Phalen's test and slightly decreased grip strength bilaterally, and positive Tinel's sign and wrist flexor weakness on the left. Cervical spine x-rays showed C5-6 degenerative disc disease. EMG and nerve conduction studies revealed changes suggestive of bilateral median mononeuropathy at or distal to the wrists (carpal tunnel syndrome) and minimal C6 cervical radiculopathy.

Following bilateral carpal tunnel release, she obtained temporary relief of symptoms. After an 11-month period of disability, she was able to return to work part-time. However, after 5 months, she left her job voluntarily because of persistent wrist pain. ●

prevention efforts. Physicians play a crucial role in preventing occupational CTS. Identifying cases promptly is critical to stopping exposure and significantly improving the chance for recovery. It is important for all clinicians to be aware of the prevalence and consequences of occupational CTS and to file a Doctor's First Report whenever the condition is identified or suspected. For more information about occupational CTS in California or the SENSOR program, contact Dr. Robert Harrison at 510-622-4404. ●

FINDINGS FROM THE FIELD...

The California SENSOR project collects field information on cases that fulfill one or more of the following criteria: a large number of cases (“cluster”) is received from a particular industry, occupation, or employer; the case represents an occupation with a large number of employees at risk for CTS in a particular industry or plant; worksite evaluation suggests that prevention recommendations are feasible and there is an opportunity to distribute industry-wide prevention materials; or the case represents a sentinel event (i.e., the case presents an opportunity to collect important information on an industry, process, task, occupation, equipment or tool).



1. Worker leaning on desk edge while waiting for a customer response

Workers providing customer service are at increased risk of CTS.

The California SENSOR Program received reports of 324 cases from workers involved in customer service-type work tasks. We define customer service work as having the following characteristics:

- ▶ Simultaneous use of both the phone and computer
- ▶ Low rate of data entry (e.g., 5 – 10 words per minute versus 80 words per minute as in word processing)
- ▶ Interactive (i.e., frequent pause time waiting for customer response) (*Photo 1*)

These workers may work in telecommunications, insurance, reservations, and sales. In California alone, a large population involving thousands of workers staff what are known as “call centers.”

We collected field information at 3 worksites: a telecommunications directory assistance office, a sales office at a telecommunications company, and an airline reservations center. Some of our findings include:

- ▶ High rate of hand and arm symptoms (65 to 80% of workers surveyed)
- ▶ Frequent sustained awkward postures (*Photo 2*)
- ▶ High psychosocial stress caused by constant electronic monitoring and nature of work organization
- ▶ Poor workstation furniture and layout
- ▶ Inadequate ergonomics training
- ▶ Poor management response to injuries and concerns



2: Wrist extended while waiting to type in a customer response

Some of our recommendations include:

- ▶ Providing better upper extremity support and adjustable furniture
- ▶ Rotating job tasks
- ▶ Improving environmental conditions such as lighting and air quality
- ▶ Providing regular workstation evaluation by an ergonomist
- ▶ Faster management response to injuries

For more information on customer service work tasks and other field studies, please call Jackie Chan at 1-800-970-6680 ●

CONTACT US...

For more information about our projects or to see a list of our publications, contact:

Occupational Health Surveillance and Evaluation Program (OHSEP)

Occupational Health Branch
California Department of Health Services
1515 Clay Street, Suite 1901
Oakland, CA 94612

Office: 510-622-4300
Fax: 510-622-4310
Toll-free: 800-970-6680
Web: www.dhs.ca.gov/ohb

Project SENSOR Staff

Robert Harrison
Jennifer Flattery
Jackie Chan
Eleana Martysh
Christine Hannigan
Roselle McNeilly
Rachel Johns



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California Department of Health Services
1515 Clay Street, Suite 1901
Oakland, CA 94612



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