

FACT SHEET

M. Jodi Rell, Governor
J. Robert Galvin, MD, MPH, Commissioner



Connecticut Department of Public Health
Environmental and Occupational
Health Assessment Program
410 Capitol Avenue MS # 110SP, PO Box 340308
Hartford, CT 06134-0308
(860) 509-7740
<http://www.ct.gov/dph>

OFFICE WORK & CUMULATIVE TRAUMA DISORDERS



What are Cumulative Trauma Disorders?

Cumulative trauma disorders also known as repetitive strain injuries, repetitive motion disorders, overuse syndrome and work-related musculoskeletal disorders, are the largest cause of occupational disease in the United States and the most frequently reported type of occupational disease in Connecticut. CTDs are injuries of the musculoskeletal system, which includes joints, muscles, tendons, ligaments, nerves, and blood vessels.

Office workers who use personal desktop and laptop computers for word processing or data entry are at risk for developing CTDs. Their duties require working at a fast pace, performing repetitive tasks, and remaining in awkward or fixed positions for long periods of time. CTDs are usually caused by a combination of the following risk factors:

- **repetitive motions**
- **forceful exertions** - pulling, pushing, lifting, and gripping
- **awkward postures** - body positions that are not the natural resting position
- **static postures** - body positions held without moving
- **mechanical compression of soft tissues** in the hand against edges or ridges, such as using tools or objects which press against the palm
- **fast movement** of body parts
- **vibration**, especially in the presence of cold conditions
- **mental stress**
- **lack of sufficient recovery time** (rest breaks, days off), which will increase the risk of developing a CTD by any of the above factors.

WHAT ARE THE MOST COMMON CTDs AMONG OFFICE WORKERS?

There are many different types of CTDs. The most well known CTDs related to operating personal computers are **carpal tunnel syndrome (CTS), extensor tendonitis, flexor tendonitis, rotator cuff tendonitis, thoracic outlet syndrome, and ulnar nerve compression.**

Carpal tunnel syndrome refers to compression of the median nerve as it passes the carpal tunnel in the wrist. Any condition that increases the contents of or decreases the size of the carpal tunnel can cause compression of the median nerve. Commonly reported symptoms of CTS include numbness, burning, and tingling in the first 3 ½ digits. If left untreated, symptoms can become much worse and may result in loss of grip strength, clumsiness, increased pain at night, and possibly permanent loss of hand function.

Extensor tendonitis is irritation of the tendons used to straighten the fingers. Pain caused by extensor tendonitis is normally experienced on the top of the hand and forearms.

Flexor tendonitis is irritation of the tendons used to curl and close the fingers. Symptoms include severe pain in the palms and the underside of wrists and forearms. If left untreated, flexor tendonitis can cause permanent disability.

Rotator cuff tendonitis is the thickening of the tendons and the tissues that connect the arms and shoulders. The prolonged stress of holding the arm in a typing position without arm and/or elbow support can cause strain on shoulder muscles and tendons. Symptoms can include severe pain and loss of shoulder function.

Thoracic outlet syndrome results from compression of the nerves from the spine and blood vessels from the heart that go to the muscles in the arms. The fixed position of the shoulders necessary to operate a personal computer makes office workers susceptible to developing this disorder. Symptoms include numbness and pain in the fingers.

Ulnar nerve compression at the elbow is associated with pressing the nerves surrounding the elbow against hard surfaces and the elbow bones. When hitting your “funny bone,” in reality, you have hit your ulnar nerve. Office workers are at risk for developing this CTD as a result of pressure on the elbow from unpadded arm rests.

HOW CAN CTDs BE PREVENTED?

Proper equipment, tool design and layout of the work area, along with good work practices (i.e., routinely alternating tasks, slowing down and taking regular breaks from repetitive work), are ways to prevent a CTD. Use this list to help you become more aware of your equipment, tool design, work area layout and work practices.

Proper equipment:

- Can you adjust the height of the seat on your chair?
- Does the backrest of your chair firmly support your lower back?
- Do your feet rest firmly on the floor? If not, do you have a footrest to rest your feet? (A footrest is less preferable than the floor, but if that is not an option, a foot rest is better than not having support for your feet).
- Is the front edge seat of your chair rounded to avoid pressure on the back of your thighs?
- If you use a mouse, is the mouse surface close to your body?
- If you wear glasses, are they the correct prescription for computer work? (Bifocals are often not appropriate for computer work.)
- Can you easily move the backrest of your chair up, down, forward and backward?
- Have you had training in how to adjust your chair and work station?
- Are the arm rests of your chair padded? Are they adjustable in regard to height and width?
- Is your keyboard tray or desk surface adjustable in height?
- Is the monitor placed 1.5 to 2 feet from your face? Is it at eye level?



Work practices:

- Does your job include a variety of duties other than operating the personal computer which requires the use of different muscles and body parts? Do you get up and move around whenever you feel any pain or tingling in your neck, shoulders, arms, or hands?
- Do you have breaks of at least 15 minutes after two consecutive hours of intensive computer work? Does this include “minibreaks” where for at least 5 minutes of every hour of computer work, you perform a task using different muscles?

If you answered “no” to any of the previous questions, you may be at risk for a CTD.

To reduce your risk, use the checklist above to evaluate your workstation and to make changes. Your job/worksites can also be evaluated by an **ergonomist**, a trained professional who is qualified to assess and make recommendations regarding work areas, work organizations, work practices, tools, and equipment. **Ergonomics** is the study of fitting the job to the person rather than forcing the person to fit the job. However, once a CTD has developed early diagnosis and treatment are very important in order to prevent further or permanent damage.

WHAT SHOULD YOU DO IF YOU THINK YOU HAVE A CTD?

- Consult your doctor or an occupational health clinic. Discuss non-surgical treatments, and work with your doctor to reduce risks. Let him/her know of your concerns.
- Keep track of your symptoms and their frequency.
- Keep track of which tasks cause you pain. This can be very helpful to your doctor.
- Keep track of postures that strain your neck, shoulders, elbows, wrists, hands or back. Bending, stooping, twisting, and reaching are examples of awkward postures.
- Learn more about Cumulative Trauma Disorders and their symptoms. Know what to look for. Share your information with your physician.
- Learn how to prevent Cumulative Trauma Disorders .
- Recommend to your Health and Safety Committee that an ergonomic committee be formed to identify commonly experienced CTD problems and discuss possible solutions with your employer.

WHERE CAN I GET MORE INFORMATION ABOUT CTDs?

For more information about Cumulative Trauma Disorders contact

- Your doctor or an occupational medicine clinic
- Connecticut Department of Public Health, Environmental and Occupational Health Assessment Program
(860)509-7740
www.ct.gov/dph/occupationalhealth
 - Connecticut Department of Labor
CONN-OSHA Consulting Services
860-263-6900 (Employer Referral Only)
<http://www.ctdol.state.ct.us/osha/consulti.htm#Consulting%20Services>
- Ergonomic Technology Center of Connecticut UCONN Health Center
(860)679-2893
<http://www.oehc.uchc.edu/ergo.asp>
 - National Institute of Occupational Health & Safety
Ergonomic & Musculoskeletal Disorders
<http://www.cdc.gov/niosh/topics/ergonomics/>
- U.S. Department of Labor, Occupational Health & Safety Administration
Safety & Health Topics: Ergonomics
<http://www.osha.gov/SLTC/ergonomics/index.html>

Some information contained within this fact sheet was extracted in part from the National Institute for Occupational Safety and Health (NIOSH) and The United States Department of Labor, Occupational Safety and Health Administration.

Originally prepared for the Connecticut Department of Public Health, Division of Environmental Epidemiology and Occupational Health and the Ergonomic Technology Center, Inc. by Colleen Mullins, University of Connecticut, Graduate Program in Public Health

May 1996

[Revised November 2008]