



# RISK BULLETIN

## Cumulative Trauma Disorder (CTD) Assessment Guidelines

Workers' compensation losses include a significant number of dollars spent on ergonomic ailments. Assessing the workplace for Cumulative Trauma Disorder (CTD) risk factors and implementing ergonomics initiatives can reduce the costs of CTD claims. The following guidelines are designed to help you recognize these ergonomic stressors in your workplace so that you can make changes before workers' compensation claims occur.



### WHAT ARE CTDS?

CTDs result from stresses to the tendons, muscles and nerves of the hand, wrist, forearm, elbow and shoulder. A variety of factors influence the degree of risk that a workstation task may contribute to CTDS. The following subjective guidelines to assess workstations, based in part on research by Asa Kilbom<sup>1</sup>, can be used to help you assess your workplace.

### REPETITIVENESS

An employee's risk of developing an ergonomic disorder increases as the repetitiveness of a task increases. To identify repetitive tasks, which may place an employee in a high-risk category for cumulative trauma disorders, use the following guidelines:

- Duration of work task is less than 30 seconds
- Work task is performed continuously for at least 60 minutes
- Frequency of movements or contractions for specific upper extremities exceeds the following:
  - Shoulder > 2.5 repetitions/minute
  - Upper Arm/Elbow > 10 repetitions/minute
  - Forearm/Wrist > 10 repetitions/minute
  - Finger > 200 repetitions/minute

### FORCE OF EXERTION

The amount of energy an employee applies to accomplish a task is related to the potential for developing musculoskeletal disorders. A high force coupled with a repetitive task is another indicator of risk. Subjective judgment is used to rate the amount of external force (high, medium or low) that must be applied to the muscle, tendon, ligament or bone to accomplish the task.

### STATIC WORK LOADING

Holding your arms out in front of you is an example of static loading. The shoulders do the

“work” of supporting your arms, with the muscles in a constant state of contraction and little physical movement. Static work results in decreased blood flow at a time when the muscles are in need of oxygen and nourishment. A subjective assessment is made if an extremity (typically the shoulder) remains under prolonged stress (i.e., muscle contraction) in order to support another extremity that is in motion to perform the task.

### BODY POSTURE

Extreme deviations from neutral body posture increase the risk of ergonomic disorders. Examples of extreme postures include raising arms above the shoulder, twisting of the torso, reaching behind the back, or leaning toward one side. Observe the lower body and upper torso positioning so a subjective assessment can be made (neutral, moderate or extreme) of the deviations from a neutral (symmetrical sitting or standing) posture.

### SPEED OF MOTION

The speed with which employees move their arms, wrists and fingers can also be an indicator of potential ergonomic stress. Subjective observations should be made during the routine completion of tasks and notes made regarding the speed (slow, moderate or fast) of the upper extremity motions, looking for signs of “bursts” of motion versus slower, smoother actions.

### DURATION OF EXPOSURE

Extended work periods without opportunities for the body to rest can increase the risk of CTDs. Take specific notes on tasks that are performed in excess of one hour per day, frequency of rest breaks, and job rotation into non-exposure tasks.

### RECOGNITION IS THE KEY TO PREVENTION

By using these guidelines, you can assess if work tasks contain ergonomic stressors that lead to the onset of CTDs. Recognition of these potential workers’ compensation exposures is the first step in preventing these types of claims.



1. Kilbom, Asa. “Repetitive work of the Upper Extremity: Part I- Guidelines for the Practitioner.” *International Journal of Industrial Ergonomics*, Vol. 14, Nos. 1-2, August 1994.

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