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<b>Subject: 4.0</b> Ergonomics Program				
<b>Approved</b>  <hr/> Human Resources Manager      Date		<b>Approved</b>  <hr/> Risk Analyst Manager      Date		

## 1.0 INTRODUCTION

Musculoskeletal disorders, also known as cumulative trauma disorders (CTDs), repetitive trauma disorders (RTDs), repetitive strain injuries (RSIs), repeated motion disorders, or overuse syndromes, are illnesses, injuries, or diseases that affect one or more parts of the musculoskeletal system. CTDs include sprains, strains, inflammation, degeneration, tears, pinched nerves or blood vessels, bone splintering, and stress fractures.

Common symptoms of CTDs include:

- Painful joints
- Pain, tingling or numbness in hands or feet
- Shooting or stabbing pains in arms or legs
- Swelling or inflammation
- Burning sensations
- Pain in wrists, shoulders, forearms, knees, etc.
- Fingers or toes turning white
- Back or neck pains

There are some risk factors that increase the chance of work-related CTDs. These include forcefulness, task repetitiveness, awkward posture, static loading or sustained exertions, mechanical contact stress, extreme temperatures, hand-arm vibrations, poorly fitted gloves, and so on.

As much as 50% of all worker compensation claims in TUOLUMNE COUNTY are attributable to CTDs. The prevention of occupational musculoskeletal disorders is a management top priority. This program must be considered as a minimum standard. It cannot cover every situation. The need will always exist for common sense and good judgment to protect yourself and others around you from injury.

## 2.0 PURPOSE

The purpose of this program is to establish TUOLUMNE COUNTY ergonomics program and define the responsibilities, to evaluate, prevent, and manage work-related musculoskeletal disorders.

This program applies to all employees (full-time, part-time, temporary), contractors, and visitors.

### **3.0 DEFINITIONS**

Awkward posture: a deviation from the ideal working posture of arms at the side of the torso, elbows bent, with the wrists straight. Awkward postures typically include reaching behind, twisting, bending forward or backward, pinching, and squatting.

CTDS: illness, injuries, and diseases that affect one or more parts of the musculoskeletal system.

Fatigue: a condition that results when the body cannot provide enough energy for the muscles to perform a task.

Forcefulness: the amount of physical effort required of a person to do a task and/or maintain control of tools and equipment.

Hand-arm vibration: vibration (generally from equipment or hand tools) that goes through the hand and arm, then travels through the body.

Musculoskeletal system: soft bones, muscles, tendons, ligaments, cartilage, nerves, and vessels in the body.

Neutral Posture: comfortable working posture that reduces the risk of CTDs.

Repetitiveness: performing the same motion repeatedly. The severity of risk depends on the frequency or repetition, speed of the movement or action, number of muscle groups involved, and the required force.

Risk factors: aspect of the job that increases the worker's chance of getting a work-related CTD.

### **4.0 RESPONSIBILITY**

Generally, both management and employees are responsible for compliance with safety and health standards. Management has the responsibility to see that practices and processes are designed, engineered, constructed, maintained, and operated to provide the utmost in safe and healthful conditions.

#### **4.1 Managers / Supervisors**

- Eliminate or minimize exposure of employees to ergonomic risk factors
- Work with employees to resolve ergonomic issues
- Inspect the work area to identify high-risk work activities and causes of injuries
- Identify and implement actions to minimize the occurrence of injuries
- Ensure employees are trained on how to identify signs and symptoms of work-related CTDs
- Provide direction, accountability, and credibility to TUOLUMNE COUNTY's efforts in preventing CTDs
- Encourage and support communication regarding ergonomic issues between employees and management at all levels.
- Provide an environment that encourages participation at all levels

#### **4.2 Risk Management Analyst**

- Provide guidance, consultation, and a system to support the managers / supervisors in maintaining a safe workplace.

- Review safety and health inspection reports and records, and help to correct unsafe conditions or practices observed
- Conduct pre-injury preventative workstation evaluations
- Identify interventions to minimize unsafe conditions
- Recommend appropriate equipment for work stations when needed.

### 4.3 Employees

- Required to abide by the safety rules and not to commit to unsafe acts
- Communicate ergonomic issues to your manager / supervisor when first noticed
- Attend training programs when required
- Follow work procedures and adjust workstations to prevent injury and ensure safety.

## 5.0 HAZARD PREVENTION AND CONTROL

### 5.1 Engineering Controls

Where possible, permanent engineering controls will be used to fit the task to the employee. These controls include making changes to workstations, tools, or equipment used on the job, or changing the way the job is done to avoid work-related musculoskeletal hazards.

**Workstation Design:** Each workstation shall be evaluated in terms of its workspace layout, work surfaces, standing and walking surfaces, seating, storage, work fixtures, materials handling and/or movements and environmental factors such as extreme temperatures, humidity, and so on. Any ergonomic risk factors discovered must be eliminated or at a minimum, reduced and the workstation fixed to fit the employees.

**Work Methods Design:** Job tasks shall be critically evaluated to eliminate static or awkward postures, mechanical stress, repetitive motions, excessive force, and unreasonable work rates.

**Tools and Equipment Design:** Where possible, tools and equipment should be designed to fit the employee, however they must be chosen for the specific demands of the task. Tools must meet the neutral body test, meaning that the employee using the tool should maintain neutral posture while using the tool. Some of the factors that can be modified to prevent risk include tool size, weight, and balance; handle size and position, and power control design.

### 5.2 Work Practice Controls

These are administrative controls used when engineering controls are not viable to reduce the duration, frequency, or severity of exposure to a hazard.

Work Practice controls include but are not limited to:

- Work method training – Training the employee to perform the work in a fashion that helps to reduce work-related CTDs
- Gradual introduction to work – Slowly introduce the employee to work that has a risk for work-related CTDs
- Monitoring – monitor the employees task to ensure that they are doing it correctly and not taking short cuts that could increase the risk for work-related CTDs

- Recovery pauses – small breaks (3-5 min) that employees are given every hour to stretch and relax the muscles that have been used
- Job rotation – rotate the tasks being performed in the department to reduce the risk or work-related CTDs
- Job redesign – redesign the process for the task to promote less repetitive motion and more recovery pauses.

### **5.3 Personal Protective Equipment**

This must be used as a last resort, only when engineering and work practice controls are not a viable option to eliminate or reduce the risk. PPE must be worn while alternative measures are being evaluated.

PPE includes but is not limited to gloves, knee pads, appropriate footwear, and braces, support cushions, and so on.

## **6.0 Injury Prevention Phases**

The methods described on the Hazard Prevention and Control section of this program are part of our injury prevention efforts. TUOLUMNE COUNTY will identify risk factors and implement controls to eliminate them.

### **6.1 Injury Management / Early Intervention Phase**

This phase begins when a work-related musculoskeletal injury occurs. Our injury management focus is on early diagnosis and treatment of the injury, regardless of whether the employee continues to work, begins modified duty, or is off work.

The goal of this phase is to minimize time lost from work and ensure safe return to work. This is accomplished by:

- Seeking early and appropriate treatment
- An aggressive safe return to work by modifying duties and jobs for injured workers

### **6.2 Chronic Injury Phase**

It is our intent never to get to this phase with any injury. By focusing on prevention and injury management, no injury should ever become chronic. However, in the unlikely event that an injury becomes chronic, our goal is to ensure return to work without further complexity and to prevent disability. The following conditions will trigger chronic intervention:

- Employee has not returned to work and the claim remains unsolved
- Employee has not returned to work and does not show demonstrated improvement from the second phase
- Employee has returned to work with limited duties, but without resolution of the claim
- Employee has been released for work, but nonphysical barriers have prevented return to work

Each case shall be dealt with by the Risk Management Analyst and any other parties that may need to be involved. All information gathered shall be used to resolve the claims. The

information should also be used to update and improve the ergonomics program so that the risk factors that caused the chronic injury would be prevented in the future.

## **7.0 TRAINING AND EDUCATION**

Training plays a significant part in the ergonomics program. Initial training shall be provided to all employees and managers to understand the potential risk of ergonomic injuries, their causes, symptoms, prevention, and treatment. Job specific, hands-on training will be given to employees at their workstation by their supervisor. This training is included in the New Employee Safety Orientation. An annual awareness training is also given each year as an on-line course to keep employees aware of the hazard.

Additional training will be provided when new processes, equipment, or procedures are introduced into the workplace or when an employee is absent for more than 60days

Employee Involvement is vital to the success of the ergonomics program in general, and particularly, the training element. Managers and supervisors are responsible for creating an environment conducive to maximum success through communication and training.

# COUNTY OF TUOLUMNE

## ERGONOMIC WORKPLACE PROGRAM

**Effective Date:** July 1, 1991

**Revised:** June 2001

OSHA defines ergonomic disorders as ailments of the musculoskeletal and nervous systems occurring in either the upper or lower extremities, including the back. These disorders may be caused or aggravated by repetitive motions, forceful exertions, vibrations, sustained or awkward positioning or mechanical compression of the hand, wrist, arm, back, neck, shoulder and leg over extended periods or other ergonomic stresses such as improper lighting conditions. Ergonomic disorders include cumulative trauma disorders such as carpal tunnel syndrome, various tendon disorders and lower back injuries.

A main distinction between ergonomic disorders and strain or sprain injuries is that the latter usually result from a single act, such as acute trauma. Ergonomic disorders, on the other hand, develop gradually over periods of weeks, months and years and there are few, if any, distinctive or dramatic features surrounding their onset.

### **County Ergonomic Workplace Program**

**Statement of Intent:** The County believes that ergonomics goes hand-in-hand with higher productivity and quality management. If a job is well designed, people will perform efficiently. If it is poorly designed, people will perform inefficiently and have more injuries. The County endeavors to eliminate the latter.

**Purpose of Program:** To prevent occurrence of work-related musculoskeletal disorders, to inform employees about musculoskeletal disorders and the risk factors that can cause or aggravate them, to promote continuous improvement in workplace ergonomic protection, to encourage new technology and innovation in ergonomic protection, to identify design principles that prevent exposure to risk factors, and to ensure ongoing and consistent management leadership and employee involvement.

### **Risk Identification Procedures and Employee Reporting**

Employees are encouraged to report cumulative trauma disorder symptoms or risks, without fear or reprisal or discrimination, through the Employee Hazard Report Program.

The County will establish an on-going review of County documents related to cumulative trauma disorders, to determine whether employees have reported symptoms of, or been diagnosed with any cumulative trauma disorder. Documents to be reviewed include:

- OSHA 200 logs and inspection notes
- Worker's compensation loss runs, and
- Available medical records

In addition to examining records for the occurrence of musculoskeletal disorders, the County will also monitor jobs with risk factors to determine the extent to which musculoskeletal disorders (MSD) are present. Jobs with the following characteristics will be so monitored.

- Performance of the same motion pattern every few seconds for more than two hours at a time during the work shift
- Fixed or awkward work postures for more than a total of two hours during the work shift (for example, overhead work, twisted or bent back, bent wrist, kneeling, stooping, or squatting)
- Use of vibrating or impact tools or equipment for more than two hours at a time during the work shift
- Manual handling and lifting of objects weighing more than 25 pounds in each work shift
- No worker control over work pace for more than four hours at a time during the work shift

A risk factor checklist is to be completed for the jobs with these requirements. There are two checklists available – one for office work environments and one for all other types of environments. The checklist results will determine whether the County has to proceed to further evaluation. The risk factor checklists are attached.

### **Work Site Evaluation**

The County Safety Officer will ensure that a work site evaluation is performed for any of the following reasons:

- Whenever an employee reports a cumulative trauma disorder symptom which is reasonably likely to be work related;
- Whenever an employee is diagnosed with a cumulative trauma disorder; or
- Whenever the County Safety Officer acquires information that identifies a cumulative trauma disorder risk in a specific work activity in the work place.

Work site evaluations may also be conducted or repeated whenever control measures are implemented; wherever new processes, procedures, equipment or activities occur; or whenever the County acquires new information indicating that the most recent work site evaluation may be deficient.

A work site evaluation will seek to ascertain the presence and severity of any cumulative trauma risk, and may include the following evaluation steps:

- Asking employees if they have recently experienced or are experiencing MSD symptoms;

- Identifying specific work activities, if any, that are likely contributors to cumulative trauma;
- Identifying and evaluating changes that can be made to reduce the exposures; and
- Describing the control measures to be implemented, including a schedule for their design, implementation, and evaluation.

Schedules for corrective actions will be set and if the schedule cannot be kept, all relevant parties will be notified.

When the work site evaluation is prompted by an employee report or MSD diagnosis the evaluation will focus on the work activities of that specific employee. When the evaluation is required because a MSD risk is identified, the evaluation will focus on all of the employees known to be exposed to this risk. Work site evaluations will be formalized, documented in writing, and records maintained.

### **Corrective Control Implementation**

Where the County identifies a “MSD at risk” job (i.e. those with moderate to high risk), the County Safety Officer will endeavor to identify the cause of the risk and implement corrective actions or appropriate controls. For jobs that have an obvious MSD risk and where the solution can be readily accomplished, the goal for corrective action will be thirty (30) working days. Where the problem is multi-factorial and the causes are less obvious the County Safety Officer will perform a job analysis to ascertain what can be done to eliminate/reduce the risk and corrective action will be taken within a reasonable time period thereafter.

The County will utilize feasible engineering controls, administrative controls, and personal protective equipment as necessary to eliminate or reduce identified MSD risk. Control measures will be implemented in a timely manner based upon the severity of the hazard. Personal protective equipment will not be used as a substitute for feasible engineering or administrative controls. Protective equipment may be used where it provides protection at least as effective as the engineering and administrative controls otherwise required.

### **Training**

Employee training will be the responsibility of individual departments under this standard. HR staff can be contacted for assistance in developing this training. The training curriculum shall include:

- Awareness of the symptoms and consequences of MSD, including an explanation of the types and symptoms of upper and lower extremity MSD, how MSD occur, how their initial symptoms can be detected, and the physical limitation MSD can cause



- Awareness of MSD risk factors, including an explanation of what MSD risk is, the types of medical conditions that can aggravate MSD, and the types of occupational and non-occupational activities and postures that are associated with MSD risk
- Awareness of safe work methods, including an explanation of methods and techniques to minimize MSD risk in work activities, including the correct and safe use of all equipment and tools which pose a MSD risk; and
- The specifics of the Employee Hazard Reporting system (as outlined in the IIPP)

The training shall be updated promptly upon implementation of engineering controls, and shall be conducted at least on an annual basis.

**Training Information:** Included with this program outline are training materials related to ergonomics and MSD risk. Departments should utilize this information in complying with their responsibilities related to employee training. Call the HR office for further information on available training resources.

### **Evaluating the Effectiveness of the Program**

The County will evaluate the effectiveness of this Ergonomic Workplace Program on an on-going basis. It is anticipated that gradual improvements will be seen in the workplace as the program is implemented. Objective measures include proportion of jobs that have moderate to high risks, incidence rates, and severity rates.

### **Final Note**

The tragedy of MSD is that it is relatively easy to prevent but hard to cure. Most people can avoid the ailment by taking a few precautions – doing warm-up exercises, maintaining good posture (but no sitting too rigidly), keeping their arms loose, holding their hands properly, stretching occasionally and taking frequent rest breaks. On the other hand, once people get full-blown cases, they will be susceptible to reinjury for the rest of their lives. It must be a partnership between the employees and the County. The employees have to do their part by taking breaks and taking care of themselves, and management has to provide them with the proper tools, equipment, and education.